A STUDY ON ANALYSIS AND DESIGN OF G+15 HIGH RISE BUILDING BY USING STAAD PRO IN SEISMIC ZONE IV & ZONE V

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Abstract: In this project G+15 high-rise building modeling is completed to examine the outcome of special circumstances along with specific heights on seismic parameters like base shear, lateral displacements, and lateral drifts. The knowledge gained has been implemented for zones IV and V in soil type II (medium soils) as targeted in 1893–2002. This study focuses on the analysis and design of a G+15 high-rise building situated in seismic Zone IV and Zone V, employing STAAD Pro software. The seismic performance of structures is a critical aspect, particularly in regions characterized by high seismic activity. In this research, the seismic response of the building is evaluated, considering the dynamic effects of earthquakes. The analysis involves the determination of seismic loads, model analysis, and response spectrum analysis to understand the building's behavior under seismic forces. The software enables the assessment of various design parameters, including member sizing, reinforcement detailing, and load distribution, ensuring compliance with relevant building codes and standards. The findings of this research contribute to the advancement of seismic design practices for high-rise buildings in Zone IV and Zone V regions. The insights gained from the analysis facilitate the development of safer and more resilient structures, mitigating the risks associated with seismic events, and ensuring the protection of life and property.

Keywords: Zone IV & Zone V, Staad pro, Seismic zone.

I. INTRODUCTION

A soft storey known as weak storey is defined as a storey in a building that has substantially less resistance or stiffness or inadequate ductility (energy absorption capacity) to resist the earthquake induced building stresses. Soft storey buildings are characterized by having a storey which has a lot of open space for example, parking garages.

Earthquakes are the most destructive of natural hazards, Earthquake occurs due to sudden transient motion of the ground as a result of release of energy in a matter of few seconds. The impact of the event is most traumatic because it affects large area, occurs all of a sudden and un-predictable. Vibrations induced in the Earths crust due to Internal (or) External causes that virtually shake up a part of the crust and all the structures and living and non-living things existing on it they can cause large scale loss of life, Property and disrupts essential services such of water supply, sewerage systems, power and transport etc.

II. LITERATURE REVIEW

SOURABH RAJORIA (2016) In this study, we studied about the analysis of these kinds of buildings for seismic zones III and V of the India for same

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Social media Based cyber bullying detection

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ABSTRACT
Increasing internet use and facilitating access to online communities such as social media have led to the emergence of cybercrime. Cyber bullying is a pervasive issue on the internet, affecting both teenagers and adults, and leading to severe consequences such as suicide and depression. The need for stricter content regulation on social media platforms has become increasingly apparent. This study addresses the problem of cyber bullying by utilizing data from two different forms: hate speech tweets from Twitter and comments containing personal attacks from Wikipedia forums. The research focuses on building a robust cyber bullying detection model using Natural Language Processing and machine learning. Three distinct methods for feature extraction and four classifiers are thoroughly examined to identify the most effective approach. This proposed system aims to provide a proactive solution for the detection and prevention of cyber bullying, thereby promoting a safer online environment
Keywords: Machine Learning, Cyberbullying, Social Media, Twitter.

INTRODUCTION

Cyber bullying is bullying online. Most of the time, if not all the time over social media. Cyber bullying is often not physical, which means that the people being cyber bullied feel mental pain instead of physical. Cyber bullying started when social media was made, and there's been more and more cases since. Cyber bullying expresses the acts of the slanders, gossips, threaten harassment, insult, abashing and excluding someone on the digital world. It is a new generation bullying. Cyber bullying has influence on people more psychological. Seventy percent of people are exposed to cyber bullying every year .It is usually being done via fake accounts. Some people who are exposed to cyber bullying are thinking of suicide. Authorities and parents have to talk to children about cyber bullying .They should listen to them without judging. Adults should be role model about respecting the others. Children have to be taught to fight with cyber bullying. People who are suffering from cyber bulling should be encouraged to talk about what they live. We mustn't be a cyber-bully. Cyberbullying on social media platforms is a pervasive issue with limited and often ineffective content moderation Mechanisms. The main drawbacks of the existing system are Limited Detection Capabilities that is the existing system relies on basic and outdated methods, resulting in suboptimal cyberbullying detection capabilities, often failing to identify nuanced forms of online harassment. Due to the lack of real-time monitoring and preventive measures, the current system provides delayed responses, allowing cyberbullying incidents to escalate before any intervention occurs, so to address the shortcomings of the existing system by employing advanced Natural Language Processing and machine learning techniques to detect and prevent cyberbullying more effectively. To perform this the present existing system follows different plan of actions such as Gathering extensive datasets from various social media platforms, including Twitter and Wikipedia, containing examples of cyberbullying. Data Preprocessing to implement data cleaning, text normalization, and feature extraction techniques to prepare the data for analysis. From those preprocessed data different methods are explored for feature extraction that includes TF-IDF, word embeddings, and sentiment analysis. Model Selection is done by evaluating multiple machine learning algorithms and

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ADVANCED THYROID DISEASE DETECTION USING MACHINE LEARNING AND AI

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ABSTRACT
In the modern healthcare landscape, efficient detection and diagnosis of thyroid diseases are imperative for timely treatment and improved patient outcomes. This project endeavors to develop a robust thyroid disease detection and diagnosis system by control the capacity ofMLand AI algorithms. Keywords: Thyroid disease detection, Diagnosis, Machine Learning, Artificial Intelligence, SVM, Random Forest, Decision Trees, Artificial Neural Networks (ANN), ensemble techniques. Leveraging algorithms such as SVM, Random Forest, Decision Trees, ANN& ensemble methods, the system aims to accurately classify thyroid disorders based on patient data. Through comprehensive data collection, preprocessing, and model training, our project seeks to revolutionize thyroid healthcare, offering clinicians powerful tools for early detection and precise diagnosis. This paper outlines the methodology employed for training and validating the ML and AI models, the challenges encountered, and the strategies implemented to address them, ultimately advancing over the domain of thiroid disease identification.

Keywords: Diagnosis, ML, AI, Support Vector Machines, RF, Decision Trees,ANN, Ensemble techniques, Medical diagnostics, Precision medicine.

I. Introduction

Thyroid diseases present a growing healthcare challenge globally, demanding more accurate and efficient diagnostic approaches. In response, this project focuses on improving the capabilities of ML and AI to advance thyroid disease detection and diagnosis. By integrating ML and AI algorithms, including SVM, Random Forest, Decision Trees, ANN, and ensemble techniques, the aim is to enhance diagnostic accuracy, expedite treatment initiation, and alleviate the strain on healthcare systems.

The traditional diagnostic methods for thyroid diseases often rely on clinical symptoms, blood tests, and imaging studies. However, these approaches may lack sensitivity or specificity, leading to misdiagnoses or delayed treatments. By leveraging ML and AI, this project seeks to augment existing diagnostic methodologies with advanced computational techniques capable of analyzing complex data patterns, thereby improving diagnostic precision and facilitating timely interventions.

Each ML and AI algorithm employed in this project offers unique advantages in processing and interpreting diverse data types, ranging from patient demographics to laboratory results and imaging findings. SVM, Random Forest, Decision Trees, ANN, and ensemble techniques are selected based on their respective strengths in handling high-dimensional data, capturing complex decision boundaries, learning intricate patterns, and improving model robustness through ensemble learning.

The integration of individual ML and AI algorithms, along with ensemble techniques, aims to create a comprehensive diagnostic framework for thyroid diseases. By combining multiple algorithms, the project seeks to mitigate the limitations of individual models, improve predictive performance, and enhance an mechanism in producing unlocked information. Ultimately, goal is to develop the sophisticated diagnostic tool capable of accurately identifying thyroid diseases at an early stage, thereby facilitating personalized treatment strategies and improving patient outcomes.

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Efficient Disease Classification from Chest X-Rays Using CNN with DenseNet-201

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ABSTRACT

Chest X-ray (CXR) pictures are essential for the diagnosing various respiratory diseases, but accurate and efficient disease classification remains challenging. This project proposes a novel approach for disease classification from CXR pictures by employing CNN's or Convolutional Neural Networks with sophisticated algorithms including Efficient Net, Resent, Dense Net, CNN, and VGG. By utilizing these algorithms, our system seeks to enhance the efficiency and accuracy of disease classification, enabling timely diagnosis and treatment planning. Through comprehensive testing and evaluation, we prove that our method is efficient in accurately classifying chest diseases, paving the way for enhanced healthcare diagnostics and patient care.

Indexed Words

Disease Classification, Convolutional Neural Networks, Efficient Net, Resent, Dense Net, VGG, Mobile Net and Chest X-rays.

1.Introduction

Chest X-rays (CXRs) are essential for the diagnosis of respiratory diseases, offering valuable insights into various pulmonary conditions. However, accurate disease classification from CXR images residual of difficult task due to the complication and subtlety of pathological features. In latest years, Convolutional Neural Networks, or CNN'S have shown to be a useful tool for image classification tasks, revolutionizing medical imaging analysis. In this project, we leverage cutting-edge CNN architectures, including Efficient Net, Resent, Dense Net, CNN, and VGG, to develop a robust system for disease classification from CXR images. By harnessing the capabilities of these advanced algorithms, we aim to address the pressing need for accurate and efficient disease identification in clinical practice.

Solar Energy Radiation Prediction With Machine Learning

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Abstract— **In the global shift towards renewable energy, solar power is a highly viable option for sustainable electricity production. This project examines the synergy between solar energy generation and machine learning techniques, highlighting their potential to enhance efficiency and reliability. Machine learning optimizes solar energy system components such as photovoltaic performance monitoring, solar radiation forecasting, and system maintenance by leveraging vast datasets and sophisticated algorithms.**

The review focuses on solar radiation prediction, crucial for solar energy systems' performance. Traditional models often fail to capture the complex interplay of atmospheric conditions, geographical factors, and temporal variations. In contrast, machine learning algorithms excel at identifying intricate patterns from diverse data sources, resulting in more accurate and robust predictive models. By utilizing data from satellite imagery, meteorological reports, and historical performance records, machine learning frameworks enable real-time optimization of energy generation. This review emphasizes the transformative potential of integrating machine learning into solar energy applications, paving the way for a sustainable and resilient energy future.

Keywords— **Solar energy generation, Radiation Prediction, Machine Learning, Renewable energy, Weather conditions, Solar photovoltaic(PV), Prediction accuracy, ML algorithms and Forecasting methodologies.**

1. INTRODUCTION

The convergence of solar power generation and machine learning offers promising solutions for sustainable energy. "Solar Energy Radiation Prediction with Machine Learning" explores how these technologies synergize to address challenges in harnessing solar power and accurately predicting solar radiation levels. Machine learning's ability to analyze vast datasets and uncover intricate patterns is crucial for improving solar energy systems. Advanced algorithms can derive valuable insights from complex datasets, enhancing solar energy generation efficiency. Moreover, machine learning models have shown exceptional accuracy in forecasting solar radiation, optimizing energy production and distribution. This review provides a comprehensive overview of the intersection between machine learning and solar energy. It covers predictive

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Brain Tumor Detection Through Image Processing and Machine Learning Techniques

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Abstract: Mind was an administrative unit in human body. It controls the capabilities, for example, memory, vision, hearing, information, character, critical thinking, and so on. Presently a day's growth is second driving reason for disease. Because of malignant growth huge no of patients are in harm's way. The clinical field needs quick, robotized, productive and dependable strategy to recognize growth like cerebrum cancer. Discovery assumes vital part in treatment. In the event that legitimate recognition of growth is potential, specialists keep a patient out of risk. Different picture handling procedures are utilized in this application. Utilizing this application specialists give legitimate treatment and save various growth patients. A growth is only overabundance cells filling in an uncontrolled way. Cerebrum cancer cells fill such that they in the long run take up every one of the supplements implied for the sound cells and tissues, which brings about mind disappointment. At present, specialists find the position and the area of cerebrum growth by taking a gander at the MR Pictures of the mind of the patient physically. This outcomes in off base location of the cancer and is considered very tedious.

Mechanized imperfection recognition in clinical imaging has turned into the new field in a few clinical demonstrative applications. Computerized discovery of growth in X-ray is exceptionally critical as it gives data about strange tissues which is important for arranging treatment. The regular technique for deformity location in attractive reverberation cerebrum pictures is human examination. This technique is unfeasible because of enormous measure of information. Thus, trusted and programmed arrangement plans are fundamental to forestall the demise pace of human. Thus, mechanized cancer recognition techniques are created as it would save radiologist time and get a tried exactness. The X-ray cerebrum growth recognition is convoluted assignment because of intricacy and change of cancers. In this venture, we propose the AI calculations to defeat the downsides of customary classifiers where cancer is identified in mind X-ray utilizing AI calculations. AI and picture classifier can be utilized to recognize disease cells in mind through X-ray effectively.

Keywords: *Brain Tumor, Machine Learning Techniques, Image Processing etc.*

1. Introduction

A cerebrum cancer alludes to an unusual development of cells either inside the mind or in its area such as nerves, pituitary organ, pineal organ, layers covering an mind's area. Essential cerebrum growths start in the mind, while optional growths, otherwise called metastatic mind cancers, result from the spread of disease from other body parts.

There are different kinds of essential mind growths, with some being noncancerous or harmless, and others named dangerous or destructive. Noncancerous cancers, however not carcinogenic, can develop after some time, applying strain on the cerebrum tissue. Threatening cancers, then again, may develop quickly, attacking and obliterating encompassing mind tissue.

Cerebrum cancers differ in size, going from little ones that make prompt side effects enormous growths that might stay undetected for quite a while. Recognition might be deferred on the off chance that the growth creates in a less dynamic piece of the mind, where side effects may not show right away.

Treatment choices for cerebrum cancers rely upon variables, for example, the growth type, size, and area. Normal methodologies incorporate a medical procedure and radiation treatment. The focal sensory system (CNS), including the cerebrum and spinal segment, oversees essential capabilities like idea, discourse, and body developments. Subsequently, growths in the CNS can affect mental cycles, discourse, and engine capabilities.Human brain is a very complex structure and

it is tightly packed within the skull, and viewed as a kernel (core) section of the body. Study of the brain and its structure, and analysis of diseases are very difficult. The structure of the brain is that, it is a soft spongy mass of tissues and is very delicate. Human brain systemizes and controls all activities and functions of the human body. Anatomy of brain is shown in Figure 1.3. Anatomically, brain can be divide into 3 main regions, namely, Forebrain, Midbrain and Hindbrain [2]. Prosencephalon is the biological name of mid brain which is alsocalled as the center of the brain, and composes the Brainstem. Rhombencephalon is the biological name [3] of the hind brain and having other brainstem,

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An Overall Survey of Brain Tumor Detection with Improved Machine Learning and Deep Learning Techniques

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Abstract: Cancer ID plays the crucial role in identifying the type of therapy, treatment progress, success rate, and disease advancement. CNN were the pivotal class at deep learning, particularly in recognizing visual imagery. CNNs train through convolution & maxpooling layers. ELM were the type for trainind mechanisms with hidden layers, applied at multiple domains like classification & regression.Gliomas, which is the common as well as violent brain cancers, significantly impact patient survival. Therefore, effective treatment planning is vital for enhancing life time for oncological patients. MRI which is very often used for identifying tumor. However, extensive information generated with MRI impedes traditional filtering within proper timeframe, by limits of the application in identifying the quality in terms of medical data. Hence, there is a need for reliable and automated segmentation methods.

Indexing Words: Segmentation, Feature Extraction, Validation, Disease.

1. Introduction

Significant effort to train a radiologist, and even the most experienced individuals may face challenges in analyzing vast amounts of medical data efficiently. Artificial Intelligence (AI) techniques having capability to impact complete areas in medical field, revolutionizing practices starting with development of medicine to medical navigation. The recent success of AI algorithms in computer vision tasks aligns well with the increasing digitization of medical records. The adoption of EHR at United States saw a significant rise of 11.8% - 39.6% among employees among 2007 and 2012. Clinical photos constitute the major component of patient's EHR, at present examined with radiologists. However, human radiologists face limitations in terms of speed, fatigue, and experience. Training a radiologist is a time-consuming process that demands years of dedication. Even the most seasoned professionals may encounter difficulties when tasked with efficiently analyzing vast volumes of medical data. This is where AI algorithms step in, offering a promising to improve an speed, exactness, and efficiency for medical photo analysis, thereby transforming the landscape of healthcare practices. extraordinary monetary expense to prepare a certified radiologist, and some medical care frameworks re-appropriate radiology answering to cheaper nations, for example, India by means of radiology. A postponed or incorrect conclusion hurts the patient. Consequently, it is great for clinical picture examination to be completed by a robotized, precise and proficient AI calculation

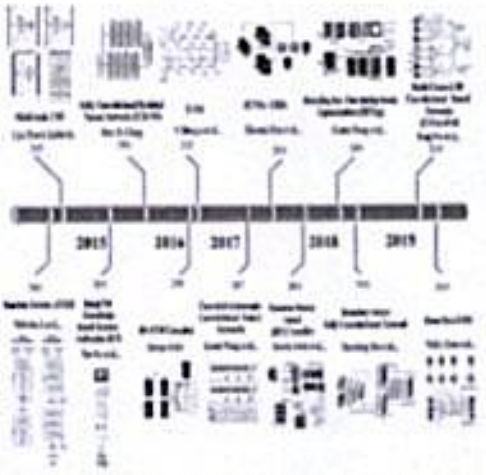

Figure 1: Development of Brain tumor using Machine Learning

Here are the bunch for photo mechanism as well as recurrence in utilization was expanding. Smith-saw images which uses from 1996 - 2010 over 6 huge coordinated medical care frameworks at US, which involves 30.9 trillion photos assessments. Creators identified that in the review time, CT, X-ray & PET utilization raised 7.8%, 10% & 57% separately. Representative man-made intelligence worldview at 1970s prompted an improvement in rule-based, master frameworks. Execution at medication is MYCIN framework in less life span that is recommended various systemsat anti-microbial treatments to people.Lined up with these turns of events, man-made intelligence calculations changed from traditional methodsto the normal, high quality element filtering strategies as well as afterward that regulatedtraining procedures. Unaided AI techniques are additionally being explored, however most calculations from 2015-2017 were distributed writingwhich was utilized directed training strategies.

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A Comprehensive Survey of Advanced Image Processing and OCR Techniques for Enhanced Image Plagiarism Detection

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Abstract: - In today's digital world, sharing files, documents, and presentations online has become routine for both work and study purposes. However, this surge in online sharing has brought forth a significant challenge: plagiarism. Plagiarism will happen whenever the copied content in various sources by not giving proper credit. This paper delves into the realm of plagiarism detection, particularly focusing on images. We discuss various tools and techniques designed to detect plagiarism and compare their effectiveness based on factors like accuracy. Finally, we analyze the work of different authors and share common findings. Our research employs a thorough review process to ensure the accuracy of our conclusions. By emphasizing the use of AI-powered tools, our agenda is to promote sharing of original dataover the online domain.

Keywords: Plagiarism detection, Image plagiarism, Online data sharing, Document sharing, Plagiarism checking software, AI-powered tools, Digital collaboration, Academic integrity, Content attribution, Comparative analysis.

Introduction

Plagiarism, is a way of submitting someone else's task as their own work without giving the proper credit to the concerned individual who should get the credit. Ethical challenges in research and scholarly endeavors. It encompasses various forms, from directly copying text to using images and data without acknowledgment, undermining the integrity of the research process and leading to severe consequences such as reputational damage and legal repercussions. To uphold academic integrity, it is imperative to cite all sources properly and give credit where it is due.

Moreover, the complexity of plagiarism extends to different manifestations, including copy-and-paste, paraphrasing, self-plagiarism, patchwork, mosaic, and accidental plagiarism. Each form presents unique challenges and implications, emphasizing the need for robust detection mechanisms to combat this pervasive issue effectively.

In response to the evolving landscape of plagiarism, exploring diverse tools and techniques for enhanced image plagiarism detection has become indispensable. Artificial intelligence (AI) emerges as a pivotal ally in this endeavor, leveraging advanced algorithms to scrutinize images comprehensively and identify instances of plagiarism with precision. These AI-powered tools offer comprehensive solutions for detecting copied content, thereby upholding the integrity of academic and professional research practices.

What is Image Processing?

Image processing is the technique of altering or enhancing digital images through mathematical operations. It involves tasks like improving image quality, extracting useful information, and recognizing patterns. Image processing finds applications in various fields such as medicine, surveillance, and entertainment.

Identifying plagiarism in Images

Identifying plagiarism in images involves comparing visual content to determine if it has been copied or altered without proper authorization. This can be achieved using image processing techniques such as undo image search, where an image is compared against a database of existing images to find similar or identical matches. Additionally, analyzing metadata, watermarks, and image features can help detect alterations or unauthorized use of images.

Various image processing algorithms were there for identifying the plagiarism in images. Some of the algorithms like Histogram Comparison, Feature Matching, Template Matching, Deep Learning, Hashing Algorithms, Watermark Detection, Edge Detection, Edge Analysis, Optical Character Recognition (OCR) etc.,

Over the set of algorithms were available in image processing choosing Optical Character Recognition (OCR) for getting text in images can be advantageous for several reasons like Text Extraction, Accuracy, Versatility, Automation, Integration, Cross-Verification, Integration with Existing Systems, Customization and Tuning, Metadata Extraction, Accessibility and Usability, Scalability, Language Support, Character Recognition

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Original Article

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Integrating OCR and NLP Techniques for Accurate Text Extraction and Plagiarism Detection in Image-Based Content

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Abstract

In the digital age, images often contain valuable text-based information, including numbers, symbols, and other data. Efficient extraction and verification of this content is critical, particularly in academic and content-driven domains where originality is paramount. This paper presents a novel approach to detecting plagiarism in text embedded within images. The proposed method leverages Optical Character Recognition (OCR) to extract text from images and applies Natural Language Processing (NLP) techniques to evaluate the originality of the extracted content. By comparing the text against a comprehensive database of existing sources, the system is capable of identifying potential plagiarism while distinguishing between original and copied content. This approach ensures that not only text in conventional documents but also in images is scrutinized for authenticity, enhancing the reliability of plagiarism detection in diverse content formats. The proposed solution offers an efficient and automated pipeline for image-based text extraction and plagiarism detection, applicable in educational, legal, and content creation environments.

Key Words : Optical Character Recognition (OCR), Natural Language Processing (NLP), Image-Based Text Extraction, Plagiarism Detection, Text Plagiarism in Images, Automated Content Verification, Image Analysis, Document Authenticity, Content Originality, Image-to-Text Conversion

Introduction

In today's digital world, vast amounts of information are presented not only in text documents but also within images. These images often contain essential textual data such as words, numbers, and symbols that may require validation or analysis, particularly in academic, legal, and content-driven industries. As the prevalence of image-based content grows, so does the need for efficient methods to extract and verify the originality of the text embedded within these images. Detecting plagiarism in text from images has become a crucial task to ensure the integrity of data across various fields.

While traditional plagiarism detection methods focus primarily on textual documents, they fail to address the increasing occurrence of text embedded in images, leaving a significant gap in content verification. Existing tools for image analysis, such as perceptual hashing or edge detection, target visual similarity between images but do not account for the textual content within. To bridge this gap, we propose an integrated system that utilizes Optical Character Recognition (OCR) to accurately extract text from images and Natural Language Processing (NLP) techniques to perform plagiarism checks on the extracted text.

OCR technology allows us to convert the image-based text into machine-readable format, while NLP tools enable advanced comparison of the extracted text against large databases of content, identifying potential plagiarism in a highly

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Integrating Advanced OCR and NLP Techniques for Enhanced Text Extraction and Image Plagiarism Detection

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SRINIVAS PUBLICATION

Integrating Advanced OCR and NLP Techniques for Enhanced Text Extraction and Image Plagiarism Detection

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ABSTRACT

This study targets the problem of digital content misuse and impersonification, both for text and images. This paper presents a new way to discover misuses of images by first leveraging OCR to make sure the text present in the image is extracted. The extracted Text is then processed to determine the originality of the content using advanced Natural Language Processing (NLP) techniques, more recently Transformer based models like BERT. It enhances the detection of potential misuse by comparing the extracted text with databases at scale. In addition, the study investigates how Attentional Generative Adversarial Network (AttnGAN) visually imagines descriptions, expanding our understanding of text to image generation.Result analysis indicates that the incorporation of OCR with NLP enhances accuracy in determining image abuse where BERT allows to get further knowledge about content originality. Furthermore, AttnGAN has demonstrated the ability to generate high-quality images from text input efficiently; therefore, promoting the understanding of digital content creation and originality. In this work, we introduced a novel approach for content detection based on OCR, NLP and image generation (detected contents) as well as conscious sharing practices in academia, law and authorship.

Keywords: Plagiarism detection, Natural Language Processing, Transformer models, Attention Generative Adversarial Networks, content originality, digital ethics.

1. INTRODUCTION:

In today's digital era, the ease of sharing content online which came up with a lot of improvements at a same time with multiple number of challenges among us, particularly concerning content authenticity and plagiarism. While plagiarism detection has traditionally focused on text-based documents, the proliferation of image-based content has necessitated the development of more sophisticated techniques for identifying copied or manipulated material embedded within images. Academic, legal, and content creation fields now face a growing need for dependable approaches to detect and prevent image-based plagiarism, especially where text is hidden within visual media.

OCR technology has emerged as a key solution to retrieving text from images, transforming static visual data into machine-readable formats. However, despite its advancements, OCR continues to face challenges in accuracy, particularly with low-quality or complex images. Enhancing OCR results through NLP mechanisms can significantly which enhance the quality of the extracted text & aid in assessing the uniqueness in the content. By integrating these two technologies, a robust system can be developed for efficient image-based plagiarism detection.

Moreover, recent advancements in generative models, such as AttnGAN, which allows reverse process —generating High Definition Images from the text Data. This growing intersection among text as well as image generation highlights a necessity for lot of high-end mechanisms/ procedures that can handle both directions of content synthesis and detection.

This paper aims to deal with growing the necessity for comprehensive mechanism in identifying plagiarism over image based data. Combining OCR for textual data retrical as well as NLP for originality assessment, along with post-processing techniques like Transformer models (e.g., BERT), we have brought up the novel, automated pipeline which not only observes but also refines content for greater accuracy. Additionally, the exploration of AttnGAN offers insights into the generation of

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Long range based effective field monitoring system

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ABSTRACT

Adoption of the internet of things (IoT) is moving forward quickly because of the developments in communication protocols and technology involving sensors. The IoT is promoting real-time agricultural field monitoring from any distant place. For the IoT to be implemented effectively there are a number of agricultural issues related to less power usage and long-distance transfer of data are to be addressed. By using LoRa, which is a wireless communication system for IoT applications, these difficulties can be avoided when sending information from fields of crops to a web server. A customized sensor node and LoRa are used in this work to transmit continuously updated information to a remote server. Monitoring the quality of water, and reducing wasteful use of water are the main goals.

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1. INTRODUCTION

A vital part of national economies and a source of existence is agriculture. Therefore, it may be claimed that a country's agricultural growth speaks for the country [1], [2]. Improvements to agricultural operations also help the nation's workforce. Farmers that practice ecological farming must check farms to assess crop status. Furthermore, knowing farm status and farm management take about 70% of farmers' time [3]. Current advances in internet of things (IoT), communication and sensor technologies enable distant agricultural field observation from any place [4]. As the end gadgets are energy-constrained, the IoT requires minimal energy usage and far-reaching transmission-based wireless communication methods [5]. The requirements of the IoT are being met by long range (LoRa) which stands for long range that provide reliable and improved connectivity for sending information from field to a remote server without paying any fees [6], [7]. The IoT will be able to connect to a huge number of end nodes spread across a vast geographic area with LoRa technology, an advanced agriculture support tool [8].

Most prevalent protocol for communication employed by IoT is LoRa [9]. It uses chirp spread spectrum [10]. It consumes less power, covers long distance which makes it suitable for remote monitoring of fields [11]. It can be operated by battery. LoRa can communicate with the devices with in a range of 2 to 5 kilometers [12]. The most crucial element in IoT applications is the communication range. As with IoT, the majority of Wi-Fi-based devices require several access points to serve a sizable region. Consequently, the cost of integrating the system has increased [13]. The system may be extended to long-range by the addition of LoRa unit, because LoRa is able to handle several nodes. LoRa's principal objective is to improve twoway

White Spot Syndrome Detection in Shrimp using Neural Network Model

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***Abstract* - White Spot Syndrome Virus (WSSV) epidemics have seriously harmed penaeid shrimp aquaculture all over the world. There remains an absence of information concerning these complicated viral-host interactions, despite significant attempts to describe the virus, the circumstances that cause infection, and the processes of infection. This understanding is required to develop reliable and efficient treatment strategies for WSSV. Mechanisms for segmenting and categorizing images offer a method for extracting features from images based on their objects. Those certain objects are produced using an image segmentation technique in which segments are formed by grouping together pixels with similar spectral properties that are close to one another. The area of interest on any underlying image is protected by image segmentation, a crucial step before actual analysis is recommended in any image processing methodology. In fact, the effectiveness of the segmentation algorithm used will have a big impact on how accurate any image processing performs. This study proposes a typical segmentation technique for segmenting shrimp variability by using essential Canny-GLCM (Gray Level Co-occurrence Matrix) features with a simple Artificial Neural Network (ANN) model.**

***Keywords-* White spot syndrome virus, shrimp, segmentation algorithm, Artificial Neural Network**

I. INTRODUCTION

Shrimp sales volume in 2021 are expected to be at least 8.9% higher than they were in 2020, with the shrimp farming sector expected to grow by more than 5% in 2022 [1]. Fig. 1 describes the shrimp production levels from the year 2010 to 2022. The Global Shrimp Aquaculture Production Review and Prediction were created using industry data and the findings of a survey conducted by the Global Seafood Alliance. Ecuador's strong growth this year, which could reach 10% by the end of the year, is due in part to the sector rebounding after being slowed by the Covid pandemic in the first year. However, the rate of growth has been significantly higher than the Combined Annual Growth Rate (CAGR) of around 4% experienced in the decade ending in 2020 [2-7]. Most of the world was still under quarantine, and there were still issues with people being unable to find work in the processing plants. There were weather issues, high feed costs and so on. Table 1shows the shrimp growth in percentage for various regions.

White Spot Disease (WSD) is a prominent disorder among shrimps that will contaminate shrimp farms and direct more threats to the economy. WSD developed from the White Spot Syndrome Virus (WSSV) which is a rod-shaped Deoxyribonucleic Acid (DNA) virus with more additional virions and is categorized in the family Nimaviridae called genus Whispovirus [8-11]. It is considered as a severe virus pathogen of penaeid shrimp cultivated which is widely disseminated globally. Penaeid Shrimps namely Penaeus Merguiensis, P. indicus and P. monodon are magnificent shrimp species which is cultivated around the earth [12]. Similar to other species, these can develop a severe infection. Fig. 2 represents abnormal shrimp. The virus is infecting the

Ensemble Learning for Weed Detection in Soybean Crop

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Abstract— In precision agriculture, to reduce the herbicides and pesticides usage for good crop's yield, efficient weed management measures is necessary. This research explores the application of ensemble deep learning techniques for weed detection in soybean fields, aiming to enhance precision agriculture practices. The ensemble approach combines the strengths of individual models, providing a robust and accurate solution to the complex task of weed detection. The experiments are done on publicly available soybean and weed dataset containing soybean, grass, broadleaf and soil images. For preprocessing of images CLAHE algorithm is used. Different pre-trained deep learning networks viz., Darknet19, Mobilenetv2, VGG19, Resnet18, Inceptionv3 and Densenet201 are investigated for classification of weed/crop. Also an ensemble model is designed with top three accurately classified pre trained networks viz., Resnet18, Inceptionv3 and Densenet201. Ensemble method yielded an accuracy of 99.72%, which is better than base models. Extensive experiment results reveal that the ensemble technique is better than individual models and its ability to reduce false positives and negatives.

Keywords— Weed detection, Deep learning networks, Precision agriculture, Ensemble learning, CLAHE algorithm.

I. Introduction

Agriculture's fundamental objective is the production of high yield crops. It is crucial to the management of the world's food supply. A cultivated plant is a crop, but an unintended plant that emerges at random in a field is a weed. In order to produce high yield crops, weed control is crucial [1]. To assure the greatest results, precision weed management can help reduce the need for herbicides while still producing high-quality crops. There is a variety of weeds that can impair crop yield and need to be discovered. These undesirable weeds have an impact crop by using soil, water, sunlight, and the fertilizer products applied [15]. From the research, it may be inferred that weed growth affects around one-third of crops. Classifying weeds and crops is essential for use in forestry, rural medicine, agriculture, and other commercial purposes. In early days, detection and removal of weeds is done manually , but subsequently research on weed-crop classification for robotic detection and removal was conducted. Robots then emerged, however they suffer from the same accuracy issues as conventional categorization techniques [9]. Implementing modern artificial intelligence-based approaches makes this possible. In recent years, precision agriculture has incorporated several machine learning and deep learning models[12].

The most effective way for classifying objects is computer vision, in which the features are automatically extracted and used for the process of classifying objects. Various machine learning methods, including K-Nearest Neighbors, Naive Bayes, Decision Trees, Support-Vector- Machines, etc., have been employed for this [5-7]. The disadvantage of machine learning methods is that it takes a long time to extract the features and the model's accuracy also poor. Then, in contrast to models of machine learning, deep learning produces the better models. Particularly, Convolution Neural Networks (CNN) performs better than other machine learning models for the task of classifying images [28]. The CNN has the ability to automatically extract features from RGB images. However, it also has some disadvantages, such as the need for more images, for significant amounts of memory (primarily GPU), and for manual hyper parameter adjustment [1]. Later, combining different deep learning techniques are used to create ensemble learning to produce greater outcomes. As the ensemble learning system is highly efficient having increased model predictive performance, the usage of ensemble learning in research has increased recently over a wide range of application fields[31]. A composite model called an ensemble combines the results of various distinct models. It is well known that ensembles are more accurate than individual models [25-27]. Diversity has been acknowledged as a key element in the explanation of ensemble success. The primary objective of this paper is how to design efficient ensembles for categorization. Even though a number of efficient ensemble algorithms have been exists, there are still a number of unanswered questions surrounding the role that diversity plays in efficient ensemble construction. Multiple models are used in ensemble approaches to improve performance. Numerous research areas, including computational intelligence, statistics, and machine learning, have used ensemble strategies. The ensemble methods are divided into traditional ensemble methods, such as bagging, boosting, and random forest, along with deep learning-based ensemble methods, multi-objective optimization-based ensemble approaches, fuzzy ensemble approaches, and approaches based on multiple kernel learning and negative correlation learning [2]. The primary principle of the ensemble methodology is to integrate various weighted models to create a single model that outperforms all the others Dietterich [3] outlined the underlying statistical,

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Weed Detection and Localization in Soybean Crops Using YOLOv4 Deep Learning Model

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weed detection, convolutional neural networks, object detection, localization, precision agriculture, YOLOv4

ABSTRACT

In precision agriculture, detection of weed is vital to control or remove it, as the weeds will impact the crop's yield. Also accurately distinguishing weeds and crop and their localization is important, to reduce the herbicides and pesticides usage. Deep learning techniques are effective for classification and detection of these. You Only Look Once v4 (YOLOv4) deep learning architecture is very widely used for object detection and localization of objects in an image. In this work, YOLOv4 is used for detection and localization of weeds in soybean fields. The experiments are done on publicly available soybean and weed dataset containing soybean, grass, broadleaf and soil images, each group having 1000 images. YOLOv4 architecture yielded an accuracy of 98.42%, recall of 93.13% and mAP of 81.24%, better than the performance of R-CNN and SSD networks. Additionally, different pre-trained networks viz., Darknet19, Mobilenetv2, VGG19, Resnet18, Inceptionv3 and Densenet201 are also investigated for classification of weed/crop which yielded an accuracy of 98.75%, 98.9%, 99.25%, 99.25%, 99.42%, 99.58% and 99.67% respectively. For preprocessing of images CLAHE algorithm is used. From different models investigated, it is observed that YOLOv4 is efficient for both classification and detection along with localization.

1. INTRODUCTION

Soybean is a widely grown edible oil seed as it is rich protein food for human being and animals. Animal consumes it through soybean meal, and humans use it as oil. According to Soy stats, Brazil is the world's major soybean producer and it shares around 25% of edible oil. It is needed to improve the quality and quantity of soybean by removing weeds. Weeds can compete with soybean plants for essential resources like water, nutrients and sunlight, and so crop yield can be negatively impacted. Also weeds increase the risk of disease and pests, interfere the harvest and post-harvest process, thus increasing the production cost. So accurate and efficient weed detection model is needed to optimize crop yields quality, minimize herbicide usage and production costs, promoting sustainable and eco-friendly farming practices and enable precision weed management. At present, for weed management herbicides are sprayed, which causes harmful environmental effects. Locating the weed precisely and spraying the herbicides at the specific location reduces the adverse effects. Additionally, weeds and soybean are similar in color and shape, Intra- and inter-species variability of weeds in terms of its features like shape, size, color, and texture is also very less. So accurate and robust detection of weeds remains as a challenging task. To address this issue various technologies and methods have been developed for detection of weeds in soybean field. Earlier methods include visual inspection of the field by farmers, where weeds are identified by their appearance and manually removed. This is labor-intensive and time –consuming, not practical for large fields. Later feature based methods are used considering color, histograms, texture descriptors and shape features. In recent years, machine learning algorithms like Support vector machines (SVM), K-nearest neighbors (K-NN), etc. are used for classification. These methods have limitations that they may not have capability to learn and adapt to variations in lighting conditions, view point and background clutter.

Deep learning models such as convolutional neural networks (CNNs) has ability to handle complex and diverse datasets effectively. In object detection, to localize the multiple objects popular models like single shot multibox detector (SSD), region based convolutional neural network (R-CNN) and You Only Look Once (YOLO) are widely used. In order to improve the detection accuracy and to increase the robustness of the model, Contrast Limited Adaptive Histogram Equalization (CLAHE) is used for preprocessing.

The objectives of this paper are as follows:

1. Applying CLAHE for preprocessing the images in the dataset.
2. Investigating different state-of-art deep learning models viz., Darknet19, Mobilenetv2, VGG19, Resnet18, Inceptionv3 and Densenet201 for classification of weed/crop.
3. Detection and localization of weed/crop with different state-of-art deep learning models viz., YOLOv4, R-CNN and SSD networks to propose an accurate model for precision agriculture, particularly for soybean crop.

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Enhancing Distribution System Power Quality with an Integrated Ultra-Capacitor Based Dynamic Voltage Restorer (DVR)

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ABSTRACT:

Power quality issues in electrical distribution systems, such as voltage sags, swells, and harmonics, significantly impact the performance and reliability of electrical devices and renewable energy integration. This paper proposes an innovative solution through the development of an Ultra-Capacitor based Dynamic Voltage Restorer (DVR) designed to enhance power quality in distribution systems. The integration of ultra-capacitors provides a rapid response to power quality disturbances, offering a reliable and efficient energy storage medium that enhances the DVR's performance. The proposed system's design and control strategy are elaborated and simulated using MATLAB/Simulink, demonstrating its capability to effectively mitigate voltage sags, swells, and reduce harmonic distortion. The simulation results validate the ultra-capacitor based DVR's superiority in improving power quality, showcasing its potential as a robust solution for maintaining voltage stability and ensuring the seamless operation of sensitive loads in the distribution network.

Keywords: Dynamic Voltage Restorer, Ultra-Capacitor, Power Quality, Voltage Sags, Voltage Swells, Harmonic Reduction, Distribution System, MATLAB/Simulink.

INTRODUCTION:

Power quality is a major cause of concern in the industry and it is important to maintain good power quality on the grid. Therefore, there is renewed interest in power quality products like the dynamic voltage restorer (DVR) and the active power filter (APF). The topology which resulted after the integration of dynamic voltage restorer (DVR) and active power filter (APF) through a back-back inverter topology was termed as a unified power quality conditioner (UPQC). DVR prevents sensitive loads from experiencing voltage sags/swells and APF prevents the grid from supplying non sinusoidal currents when the load is nonlinear. The concept of integrating the DVR and APF through a back– back inverter topology was first introduced in and the topology was named as unified power quality conditioner (UPQC). The design goal of the traditional UPQC was limited is paper, energy storage integration into the power conditioner topology is being proposed, which will allow the integrated system to provide additional functionality. With the increase in penetration of the distribution energy resources (DERs) like wind,

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Implementing Artificial Intelligence Techniques for Enhanced Islanding Detection in Photovoltaic Systems

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Abstract:

The widespread adoption of photovoltaic (PV) systems in the electricity grid has highlighted the crucial significance of efficient islanding detection procedures in guaranteeing safety, dependability, and adherence to grid standards. Islanding is the condition in which a section of the electrical grid runs independently from the main power source, which can possibly create hazards for both equipment and workers. Conventional detection systems frequently encounter difficulties in terms of both speed and accuracy, especially when operating in less-than-ideal situations.A hybrid model that synergistically combines the capabilities of machine learning algorithms and signal processing techniques to improve the accuracy and precision of islanding detection. The model utilizes a two-step procedure: in the first step, it utilizes signal attributes derived from the output of the PV system to provide preliminary detection signals. The signals are further examined by a deep learning algorithm, specifically a convolutional neural network (CNN), which has been trained on an extensive dataset that encompasses a diverse array of islanding and non-islanding situations. This dataset includes different load and generation balances. The purpose of this analysis is to arrive at a conclusive decision. This paper presents a new method for detecting islanding in photovoltaic (PV) systems, utilizing the capabilities of artificial intelligence (AI) approaches. The method is studied and confirmed using MATLAB software.

Keywords: Islanding Detection, Photovoltaic Systems, Artificial Intelligence, Machine Learning, Deep Learning, MATLAB, Grid Safety, Renewable Energy Integration.

INTRODUCTION

Islanding detection is one of the most critical issues considered in any distributed energy resource (DER). Islanding occurs when a part of the distribution system becomes isolated from the main supply. If islanding is detected, the DER should be tripped out. Typically, a DER should be disconnected within 0.1-2 seconds after the loss of the main supply [1-3]. If the islanding is failed to detect, the islanding may lead to power inequality issues and safety issues for machines and humans. Different techniques are presented in the literature for these purposes. These techniques can be broadly divided into remote and local techniques. Remote techniques are associated with islanding detection on the supply side and the local on the DER side. In remote techniques, communication is needed to send a trip signal to the DER when the islanding is detected. Furthermore, Local algorithms divide into passive, active, and hybrid methods.

The main philosophy of the local techniques is based on monitoring the output of the DER and detecting the status of the main supply. This monitoring may base on output power, voltage, frequency, current, etc. If the

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Enhancing Power Quality in Photovoltaic System Grid Integration Using Machine Learning and Cascade Multilevel Inverters

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Abstract:

The incorporation of photovoltaic (PV) systems into the electrical grid poses both challenges and opportunities with regards to power quality and system stability. With the increasing demand for renewable energy sources, it is crucial to enhance the efficiency and dependability of these systems, while also assuring their interoperability with the current grid architecture. This work aims to overcome these issues by introducing a new method that integrates a cascade multilevel inverter (CMI) with machine learning (ML) optimization techniques. The objective is to improve the integration of photovoltaic (PV) systems into the grid and enhance power quality.The proposed system architecture utilizes a cascade multilevel inverter, known for its capability to generate high-quality output waveforms with little harmonic distortion. This is essential for ensuring power quality when integrating PV systems into the grid. The findings indicate a substantial enhancement in the quality of electrical power when employing the machine learning-optimized CMI. This is evidenced by considerable reductions in total harmonic distortion (THD) and improved voltage stability, surpassing the performance of conventional inverter technologies.The proposed solution's performance and efficacy are validated through extensive simulations carried out in MATLAB.

Keywords: Photovoltaic Systems, Grid Integration, Cascade Multilevel Inverter, Machine Learning, Power Quality, Total Harmonic Distortion, Renewable Energy

Introduction:

The global energy landscape is witnessing a paradigm shift towards renewable energy sources, driven by the dual imperatives of reducing carbon emissions and mitigating the effects of climate change. Solar energy, harnessed through photovoltaic (PV) systems, emerges as a pivotal solution due to its ubiquity and sustainability. The integration of PV systems into the power grid is crucial for achieving a diversified and resilient energy mix, capable of meeting the world's increasing power demands sustainably.

In the smart era, microprocessor-controlled devices or digital, electronic, and nonlinear devices are extensively used in all sectors of the industry. Nearly all these devices are sensitive, have electrical supply disruptions at any minute, and cannot be operated properly. In addition, several supplies have also been increased, which degrades power quality (PQ). Problems that happen because of inadequate power quality are data errors, automatic resets, memory losses, UPS alarms, equipment failures, software corrup- tions, circuit board failures, power supply problems, and overheating of electrical distribution systems. Considering these realities, PQ has become progressively critical. Not only PQ issues but also the issues related to voltage are also most important from sensitive nonlinear loads and end- users [1,2].

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Developing a Single-Stage, High-Efficiency Control Strategy with Integrated Energy Management for Photovoltaic/Battery Hybrid Systems

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ABSTRACT

Proportional-integral (PI) energy strategy (EMS) and microgrid operations are proposed to work independently of the grid in this research paper. the photovoltaic system It delivers exactly what is needed. It uses DC/DC and DC/AC converters in addition to power tracking to maximise the PV energy. Classical PI control involves controlling parameters like state of charge (SOC). The three different scenarios are to take the maximum power-point tracking (MPPT) benefit into account for power distribution and battery charging/discharging. The Matlab/Simulink simulation shows the performance of the proposed power generation system in various operating conditions, with the corresponding control algorithms enabled.

Keywords— DC microgrid; energy management; hybrid power system; energy efficiency, Induction motor drive, EV Application

1.INTRODUCTION

In power grids, the microgrid is defined as the distributed energy system (IDES), which includes energy storage like batteries and supercapacitors to balance generated power and consumed power. Together and separate for small areas, all of these items are used as a single grid [6,7]. Generally, microgrids are considered a collection of grids as shown in Figure 1. using a utility grid for power distribution has some drawbacks, such as loss of electricity in transmission, air pollution from the generation phases, and global warming due to conventional sources Microgrids offers a solution to these issues. Microgrids can lessen the loss, reduce CO2 emissions, especially when using renewable energy for power generation. There are a few advantages, too, such as reducing the risk of outages, selling power to national grids or net metering. besides storage elements, the overall system efficiency is maximised when using

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Grid-Integrated PV System with SEPIC Converter Enhanced by Grey Wolf Optimization-Aided MPPT Algorithm

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Abstract:

The current decade has witnessed a significant rise in environmental pollution, escalating fuel expenses, rapid depletion of fossil fuels, and heightened consumer demands. Consequently, this has led to a substantial expansion of Electric Vehicles (EVs).Furthermore, due to the significant pollution emitted by conventional internal combustion engine vehicles, there is a growing demand for electric vehicles powered by renewable energy sources (RES). Of particular importance are electric vehicles (EVs) that rely on photovoltaic (PV) power. These vehicles are highly significant since they can be used all year round and are easy to install. Nevertheless, the sporadic nature of photovoltaic (PV) systems results in voltage swings. Hence, it is imperative to enhance the productivity of the photovoltaic (PV) system. This study utilizes an enhanced DC-DC SEPIC converter to boost the output of a photovoltaic (PV) system, which is then applied in electric vehicle (EV) applications. A closed loop technique based on Grey Wolf Optimization (GWO) is employed to ensure a constant DC link voltage at the output of the DC-DC converter. Additionally, the SEPIC converter's output is sent to the Voltage Source Inverter (VSI), where it is transformed into an AC power supply and then supplied to the electric vehicle (EV) or grid. The process of achieving grid synchronization is facilitated by the utilization of a PI controller. The proposed work aims to minimize total harmonic distortion (THD) and decrease switching losses, leading to improved energy management in electric vehicles (EVs) and ensuring uninterrupted power supply. In addition, to assess the effectiveness of the suggested methodology, it is implemented using MATLAB/Simulink.

Key Words:Electric Vehicles (EVs), Renewable energy sources (RES), Single ended primary inductance converter (SEPIC), Grey Wolf Optimization (GWO), Voltage source inverter (VSI) and Total harmonic distortion (THD).

1. INTRODUCTION:

Energy shortages and rising energy worries have risen dramatically in recent decades, prompting the development of potential new approaches including renewable power production and the electrification of transportation. Statistical analysis reveals that over 90% of passenger cars are parked for longer periods of time than it takes for their batteries to fully recharge. Electric cars (EVs) are better for the environment than conventional vehicles powered by internal combustion engines[1], and Plug-in Electric Vehicles (PEVs) powered by batteries provide an efficient alternative source. In 2016, there were 2.3 million charging stations for EVs, most of which are linked to the grid [2]. However, RES-based EVs are recommended in order to achieve the fundamental benefits of Electric Vehicles (EVs), such as

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Design and Evaluation of a Novel MPPT System for Photovoltaic Arrays Under Fluctuating Irradiance and Partial Shading Conditions

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ABSTRACT:

Optimizing the efficacy of Photovoltaic (PV) systems in converting sunshine into energy is essential for improving the functionality of independent solar power installations, particularly in remote regions where connecting to the power grid is not possible. This research presents a new Maximum Power Point Tracking (MPPT) technique that aims to maximize the energy output of standalone photovoltaic (PV) systems, irrespective of the prevailing environmental circumstances. The proposed method utilizes a sophisticated algorithm that adaptively modifies the operating point of the PV system to guarantee it functions at its peak power point, even in the face of swiftly fluctuating weather conditions. The usefulness and efficiency of the MPPT algorithm are confirmed by simulations performed in the MATLAB/Simulink environment, demonstrating its superiority over conventional MPPT techniques in terms of the speed of convergence and stability of power output. This unique Maximum Power Point Tracking (MPPT) technology holds the potential to greatly enhance the self-sufficiency and dependability of independent photovoltaic (PV) systems, hence rendering solar energy a more feasible choice for supplying energy to remote and off-grid applications.

Keywords: Photovoltaic System, Maximum Power Point Tracking, Standalone PV System, MATLAB/Simulink, Renewable Energy, Solar Power Optimization.

1. INTRODUCTION

The proposed strategy is to push the framework to execute remarkable systems to expand the productivity of the solar power generation tracking system has been designed. PV framework can't appear as a steady DC source since its output control is moved relying on nature, temperature, and light intensity. Maximum Power Point Tracking is utilized to track the most exceptional power in the photovoltaic structure. The feasibility of solar energy relies on control frameworks and the MPPT circuit. The MPPT control incremental conductance procedure is connected to the DC-DC converter, which is utilized as the MPPT circuit. In this proposed work unveils a possible approach managed out how to enhance the capacity of solar power generation in various structures by the use of reflected mirrors, auto-tidy cleaning and customized cooling framework and this structure is produced utilizing locally available raw materials to influence it to financially efficient one. Incremental conductance structure is utilized to track the MPP under low irradiance.

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Design and Implementation of a Novel Asymmetric 21-Level Inverter Coupled with Photovoltaic System for Motor Load Application

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ABSTRACT

The utilization of renewable energy sources (RES) has gained prominence in addressing load demands due to their cost-effectiveness, widespread availability, and minimal maintenance requirements. Particularly in the current context, RES hold significant importance in enhancing motor load functionality, a contrast to their lesser role in the past. This study focuses on leveraging the Sepic converter to augment overall system performance, with particular emphasis on achieving Maximum Power Point Tracking (MPPT) using the ANFIS method. The objective is to expand the operational voltage range of photovoltaic systems (PVs) for optimal efficiency. The deployment of a meticulously configured Multi-Level Inverter (MLI), specifically a 21-level (31L) inverter, effectively mitigates load demand fluctuations, thereby enhancing system reliability. MATLAB Simulink simulations demonstrate the efficacy of the proposed strategy, showcasing a notable reduction in Total Harmonic Distortions (THD) and thereby indicating superior performance.

KEYWORDS: PV System, Sepic Converter, MPPT, ANFIS, MLI, THD

I.INTRODUCTION

Power plants increasingly rely on renewable energy (RE) sources to meet rising demand for electricity and to efficiently compensate for the depletion of fossil fuels; as a result, RE is increasingly favoured in a wide range of residential and commercial settings thanks to its reliability, low cost, low environmental impact, and ease of installation. In addition, the use of these RE sources has gained widespread attention in the modern scenario, as people have difficulty favouring the existing fossil fuels due to the rapid increase in cost and so they tend to prefer the usage of RE sources to meet the daily power

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Electric Vehicle Charger Using a Bridgeless and Independent Zeta Luo Converter

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ABSTRACT

In our rapidly warming world, there is an urgent need for environmentally friendly products to combat pollution and global warming. In order to mitigate global warming, it is imperative that we promptly halt the emission of carbon dioxide into the atmosphere. To achieve this, we must change or replace the primary sources of carbon emissions, such as transportation. Over the past century, there has been a significant adoption of internal combustion engines, which has had a profound impact on our economy. However, it is now necessary to replace them with more sustainable electric vehicles. The development of electric vehicles began concurrently with the advancement of internal combustion engines. However, the technologies supporting electric vehicles were unable to keep pace with the demand. Now, in the 21st century, the time has come to transition to electric vehicles as technology has made tremendous progress. When discussing technology, the first requirement is a charging infrastructure. In order to meet the increasing demand for electric vehicles, it is imperative that we promptly upgrade our charging infrastructure. One of the enhanced chargers we will examine in this research is the BRIDGELESS ZETA LUO CONVERTER EV CHARGER.

Keywords: PV; EV; luo converter; DAB converter; FLC, phase shift control

1.INTRODUCTION

Electric vehicles (EVs) and photovoltaics (PVs) are two of the most promising and rapidly expanding technologies that are expected to have a significant impact on the electrical industry over the next decade. In the future transportation system, EVs will make up a large percentage due to rising worries about global warming and the unpredictability of the price and supply of fossil fuels. As the number of electric vehicles on the road increases, more and more electricity will be needed, and it's important that this power comes from renewable sources so that we can reduce our carbon footprint as much as possible. Given their widespread, even urban, availability for production, photovoltaics

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Multilevel Inverter STATCOM based Distribution Network for Power Quality Improvement

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Abstract:

This paper investigates the implementation of a Five-Level Multilevel Inverter (MLI) based Static Synchronous Compensator (STATCOM) for enhancing power quality in distribution networks. The proposed STATCOM configuration employs advanced control strategies to efficiently manage reactive power flow, thereby stabilizing voltage levels and minimizing power quality issues such as voltage sags, swells, and harmonic distortions. Utilizing a MATLAB/Simulink environment, the design and operation of the five-level MLI STATCOM are modeled and simulated, highlighting its effectiveness in improving the power factor, reducing Total Harmonic Distortion (THD), and ensuring robust voltage regulation across the distribution network. The simulation results demonstrate the superior performance of the proposed STATCOM in addressing a wide range of power quality challenges, making it a viable solution for modern electrical distribution systems facing the integration of renewable energy sources and fluctuating loads. This study contributes to the advancement of STATCOM technologies for better power quality management and enhanced grid stability.

Keywords: Five-Level Multilevel Inverter, Static Synchronous Compensator, STATCOM, Power Quality Improvement, Distribution Network, Voltage Regulation, Total Harmonic Distortion, MATLAB/Simulink.

1. Introduction

Background: Modern electrical distribution networks are the backbone of the global energy system, supporting the transmission of power from generation sources to end users. The criticality of maintaining high power quality within these networks cannot be overstated, as poor power quality can lead to numerous problems affecting both utility providers and consumers. Voltage sags and swells, flickers, and harmonics are among the most prevalent issues, each capable of causing equipment malfunction, increased operational costs, and reduced lifespan of electrical devices.

Problem Statement: Traditional power quality improvement techniques, such as passive filters, series compensators, and voltage regulators, have been instrumental in mitigating these issues. However, these solutions often fall short in dynamic response capabilities, efficiency, and the ability to handle multiple power quality problems simultaneously. Static Synchronous Compensators (STATCOMs) have emerged as a viable solution, yet their effectiveness is significantly influenced by the underlying inverter technology.

This research aims to explore the potential of employing a five-level multilevel inverter-based STATCOM for enhanced power quality management in distribution networks. The advanced inverter design promises better performance in terms of voltage regulation, harmonic reduction, and dynamic response to load changes.

The scope of this paper encompasses the design and simulation of a five-level multilevel inverter STATCOM, its integration into a distribution network, and a comprehensive performance evaluation. A

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Innovative High Step-Up Soft Switching Interleaved DC-DC Boost Converter with Coupled Inductors for Photovoltaic Applications

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SSABSTRACT:

"This study introduces an innovative design for a high-step-up DC-DC converter suitable for decentralized power systems. The design employs a unique combination of two capacitors and a single coupled inductor. During the off-state of the switch, the stored energy in the coupled inductor charges the capacitors in parallel, and during the on-state, discharges them in series, achieving a high step-up voltage gain. Additionally, a passive clamp circuit recycles the energy lost due to the leakage inductance of the coupled inductor, thereby reducing the voltage stress on the primary switch. Utilizing a switch with low on-resistance reduces conduction losses significantly. Moreover, enhancements in diode reverse-recovery issues further improve efficiency. The paper provides detailed discussions on the operational principles and steady-state analyses of the converter."

1. INTRODUCTION:

When the world's population grows, so does its need for energy, and as traditional sources run dry, it is imperative that alternative forms of power be developed to meet rising demand. A larger population is to blame for the rise in electrical use. As a result, several power plants have been built around the nation to keep up with the demand. Two distinct methods are being used to create energy. The grid transports the electricity produced by these facilities to the end user. Electricity is crucial to the growth of industry and, more broadly, to society. Using a geyser, heater, toaster, etc., are all common examples of daily electrical appliances. Power production and transmission must be scaled up to satisfy consumer demand at a reasonable cost. The versatility of electrical energy makes it ideal for both home and commercial use (i.e., lighting, mechanical work). One of the most accurate measures of a country's level of development is its per capita usage of electricity. Possession of a vehicle, a mobile phone, or a home would be further signs.

Fossil fuels (coal, oil, and natural gas), as well as nuclear and hydro resources, are converted into conventional sources. Coal, oil, and natural gas may all be burned to provide heat energy, which can then be transformed to

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Off-Board Bidirectional EV Charger with Reactive Power Compensation and Lowered Total Harmonic Distortion

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ABSTRACT

This paper discusses a newly designed off-board Electric Vehicle (EV) battery charger system that supports both grid-to-vehicle (G2V) and vehicle-to-grid (V2G) operations while also compensating for reactive power. The system architecture features a utility-connected AC-DC cascaded H-bridge (CHB) converter that controls the power exchange between the grid and the battery through a bidirectional DC-DC converter at the back end. To enhance safety, the charger includes galvanic isolation between the grid and the user end. The proposed system uses an ANFIS controller to manage EV power and battery current, adhering to active power commands for both G2V and V2G modes and providing reactive power compensation as required. Additionally, a control algorithm based on an adaptive notch filter has been developed to estimate network phases and achieve accurate current synchronization without the need for phase-locked loops (PLLs), simplifying controller design and enhancing both the steady-state and dynamic performance of the system. Experimental results, obtained in a MATLAB environment, demonstrate the effectiveness of the proposed system in managing reactive power in V2G and G2V settings.

Keywords—Grid to vehicle, EV charger, Power quality, Vehicle to grid.

1.INTRODUCTION

Electric vehicles (EVs) have gained significant traction in developed countries due to their reduced fuel consumption and lower greenhouse gas emissions. A key factor in the wider adoption of EVs is the increase in the installation of off-board charging stations. These off-board systems can operate in both bidirectional and unidirectional modes. Bidirectional operation, encompassing grid-to-vehicle (G2V) and vehicle-to-grid (V2G) processes, allows for the active exchange of

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Upgrading the 31-Level Distribution Network Through Integration of Advanced Lower DC Voltage Sources

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ABSTRACT:

In this research, we propose a novel topology for a 31-level asymmetrical multilevel inverter optimized for single-phase operation, boasting a streamlined design with fewer components compared to existing configurations. Leveraging an H-bridge configuration in conjunction with asymmetric DC sources, this innovative topology enables the generation of an output voltage with up to 31 distinct levels. Initially conceived as an extension of the fundamental 13-level multilevel inverter (MLI) architecture, our study delves deeper into refining the topology to accommodate 31 levels, catering to the burgeoning demand for renewable energy applications.

Through meticulous design refinement, our approach significantly reduces system size, cost, and the number of individual components, thereby enhancing overall system efficiency and affordability. Despite the numerous advantages offered by MLIs, reliability remains a persistent challenge due to the additional components required to mitigate total harmonic distortion (THD). Addressing this concern, our research endeavors to strike a balance between enhancing reliability and minimizing THD levels, a formidable task that has eluded many researchers.

Key performance metrics including total standing voltage (TSV), cost function (CF), and power loss are comprehensively analyzed for both the foundational 13-level and the advanced 31-level MLIs. Rigorous laboratory testing under diverse dynamic load conditions, encompassing various combinational loads and unexpected load disturbances, validates the efficacy of the proposed MLI architecture.

Comparative analyses against previously published topologies highlight the cost-effectiveness of our proposed MLI, showcasing reduced TSV requirements and component count. Moreover, THD levels achieved comfortably comply with IEEE standards, underscoring the robustness of the architecture.

Theoretical validation through MATLAB/Simulink simulations is seamlessly complemented by empirical testing utilizing a hardware prototype across a spectrum of real-world scenarios, reaffirming the viability and efficacy of our proposed MLI architecture.

Key words: Total harmonic distortion, Total Sequence Voltage, Total Sequence Voltage Calculation, and Cost Function (CF) in Multilevel Inverters (THD).

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Managing Active Power in Photovoltaic Systems to Aid Grid Frequency Stabilization

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Abstract:

system operators are becoming more interested in using inverter-coupled generation to help reduce frequency problems by quickly injecting active power into the system. Increasing the active power during an emergency improves the likelihood of successfully halting it. We provide a predictive methodology for efficiently and accurately controlling the active power output of PV inverters. Efficient active power management can facilitate the implementation of advanced control strategies such as rapid power-frequency droop, inertia modeling, and fast frequency response, which can help mitigate grid frequency issues. A prototype photovoltaic (PV) inverter employs maximum power point prediction and rapid active power control. The prototype inverter has a speedy response, taking 2 line cycles for a mild test event and 4.5 line cycles for a severe test event. It also demonstrates high accuracy, with a steady-state inaccuracy of only 2%, when subjected to a wide range of frequency events.

Introduction:

In recent years, there has been an increase in the level of worry over both the dependability of the power grid and the uniformity of its production. The grid-connected photovoltaic (PV) generator is becoming more popular as a result of its consistent performance as well as its capability to generate power from renewable energy sources. Maximum power point tracking controllers, also known as MPPT controllers, are used to connect the direct current (dc) output voltage of photovoltaic (PV) arrays to a dc/dc boost converter in order to collect the maximum amount of power feasible from a PV system. Connecting the converter to a dc/ac voltage source converter allows the PV system to then potentially contribute to the utility grid by supplying power (VSC). Non-linear loads, including computers, CFLs, and many other household appliances, may make up a significant portion of the local PV system load. Harmonics in the distribution system need the development of a method to compensate for them. So that the utility's injected and absorbed currents are sinusoidal, PV producers must provide distorted correction. As a result, dc/ac VSC may be controlled flexibly to achieve the harmonic compensation function. Active power filter (APF) design based on the notion of instantaneous power is complete and has shown promising results. Although the PV-APF combo has been in development for years, it has only just begun to show signs of rapid growth. Power factor, current imbalance, and current harmonics can all be balanced out using this setup, and the PV-generated power may be injected into the grid with little THD (THD). This setup may continue to improve the utility's power quality even when solar electricity is not being produced. As far as we are aware, this concept was first proposed by Kim et al. in 1996. The cost of the PV system as a whole increases because of the inclusion of energy storage components. In addition, the mathematical proof was inadequate. Afterwards, in some subsequent attempts to create PV inverters with genuine power injection and APF characteristics, the control approaches were enhanced. Their studies did not provide consistent results from applying their presented ideas, and their theories only apply to single-phase PV. In

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Enhanced Deep Learning Approaches for Classifying Skin Disorders

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Abstract—The goal of this project is to create a comprehensive and reliable system that is capable of properly diagnosing a wide range of skin illnesses. This aim is what drives this research. Leveraging a huge and diverse dataset supplied from Kaggle, which encompasses a comprehensive collection of photos depicting various dermatological disorders like as Acne, Melanoma, Psoriasis, and many more, the initiative leverages state-of-the-art deep learning algorithms.

Through the skillful use of Convolutional Neural Networks (CNNs), well-known VGG (Visual Geometry Group) networks, and ResNet (Residual Networks) architectures, the project intends to attain levels of precision in illness detection that have never been obtained before. Through the use of these cutting-edge models, the system attempts to painstakingly evaluate and categorize photos of skin diseases. As a result, dermatologists are provided with essential information about the diagnosis of diseases and the planning of treatments.

The ultimate objective of this attempt is to supply dermatologists with a categorization tool that is both automatic and dependable, which will complement their experience and enhance their diagnostic capabilities. The goal of the system is to transform the area of dermatology by enabling improved efficiency, accuracy, and efficacy in disease detection and patient treatment. This will be accomplished by integrating modern deep learning technologies into clinical practice in a seamless manner.

Index Terms—Skin Disease Classification, Deep Learning, Convolutional Neural Networks (CNN), VGG Networks, ResNet, Dermatology, Image Classification

I. Introduction

In the current climate of cancer incidence, skin cancer stands out as one of the most prevalent varieties of the disease. Skin cancer is the most common type of cancer because it affects the biggest organ in the body, which is the skin, which covers the greatest area of the human body. The conduct of these types is what differentiates them from those that are benign (noncancerous) and malignant (cancerous), which are the two broad categories. Unlike malignant tumors, benign tumors develop slowly and do not have the tendency to spread to other parts of the body. Some examples of skin tags and dermatofibromas are seborrheic keratoses, cherry angiomas, and dermatofibromas. On the other hand, malignant tumors exhibit fast development, infiltration into neighboring healthy tissues, and the ability to metastasize to distant locations within the body. Different types of skin growths that are considered to be malignant include melanoma, carcinoma, sarcoma, squamous cell carcinoma, and skin lymphoma.

The development of cancerous cells inside the tissues of the skin, which are often derived from basal cells or squamous cells, is the physical manifestation of skin cancer. For effective therapy, timely discovery is essential, and this is often accomplished by the use of a biopsy. It is important to note that this conventional method is both time-consuming and intrusive. In order to overcome these constraints, computer-based technologies present a potential option that enables the identification of skin cancer indications in a manner that is not only comfortable but also cost-effective and quick. In order to evaluate symptoms and differentiate between benign and malignant tumors, a number of non-surgical treatments are indicated.

Image capture, preprocessing, segmentation, feature extraction, and classification are the steps that are often included in the conventional method of conducting skin cancer diagnosis. The analysis and classification of pictures included inside datasets has been significantly aided by the application of deep learning algorithms such as ResNet-50 and VGG-16. The pre-trained model known as ResNet-50, which is recognized for its deep architecture and image recognition capabilities, has

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PATIENT RECOMMENDATION SYSTEM OVER ACCIDENT SEVERITY

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Abstract: **Road accidents have increased worldwide, killing many. Traffic congestion and adverse weather have contributed to this growth in recent years. The severity of injuries following an accident must be identified early to avoid deaths and provide prompt medical care. This work aims to solve this problem by creating an Intelligent Patient Recommendation System (IPRS). IPRS construction will do this. The method uses CNN image classification to determine damage kind. Additionally, it uses several machine learning algorithms to assess damage and recommend hospitals to the patient. The approach given properly classifies injuries as non-major or significant based on severity. CNN uses their picture categorization skills to do this. Because of this, the severity identification module uses SVM, Random Forest, and Decision Tree to assess damage severity. The severity category also determines hospitalisation. According to research, CNN is better than other machine learning algorithms in producing classification accuracy of 100% or close to 100%. To verify system usefulness, accuracy, precision, recall, and confusion matrix analysis are employed. Augmentation methods increase the dataset, alleviating data scarcity difficulties in medical picture databases. This is crucial work. To simplify replication and development, Jupyter Notebook is used to provide system implementation information. These particulars contain output screen and code snippet examples. The suggested IPRS is an intelligent and efficient emergency response system that can assess accident severity and direct hospitals to treatment facilities. This strategy will minimise busy route fatalities over time.**

Keywords: Intelligent Patient Recommendation System, Accident Severity Detection, Hospital Recommendation, Convolutional Neural Network, Machine Learning Algorithms.

I. Introduction

An alarming rise in traffic accidents worldwide has highlighted the need for effective emergency response systems that can quickly assess injuries and provide the best medical care. To avoid death, it is crucial to quickly diagnose injuries and send them to expert medical institutions. Rising traffic and unpredictable weather are to blame. However, conventional injury assessment and hospital referral techniques are inefficient and inaccurate, which may delay treatment and lead to poor patient outcomes. Patients may not get the optimal treatment due to these results. This study presents a unique solution to the issues raised by implementing an Intelligent Patient Recommendation System. The Intelligent Patient

Referral System (IPRS) uses cutting-edge AI to revolutionise accident severity identification and hospital referral. CNN image classification and machine learning algorithms are examples. The suggested approach uses CNN's ability to properly categorise injuries based on picture attributes to automatically classify injuries as moderate or severe. This classification uses CNN's injury classification.

After that, machine learning methods like Support Vector Machine (SVM), Random Forest, and Decision Tree are used to evaluate injuries and recommend medical facilities based on severity. The Internet Protocol Response System (IPRS) automates these vital emergency processes to speed up response. Thus, response times are reduced and resource allocation improved efficiently and effectively. This introduction analyses existing emergency response system issues. This introduction also prepares the reader for the system design, experimental assessment, and emergency medical care improvements that follow. This project develops and evaluates the IPRS to improve intelligent systems for accident severity assessment and emergency medical referral. This will improve patient outcomes and save lives.

II. Related Word

One of the fastest-growing areas of AI and healthcare is intelligent systems that can assess accident severity and provide hospital suggestions. Past research has laid the groundwork for integrating machine learning and deep learning to solve emergency medical care's challenging problems. This was done to meet emergency medical demands. This section reviews injury assessment, severity categorization, and hospital referral systems research.

A. Traffic accident severity prediction based on random forest

Yan and Shen use machine learning to research transportation safety and forecast accident severity.

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Enhanced Image Caption Generation Using VGG16 and LSTM Networks

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Abstract: The primary objective of this endeavor is to improve the generation of image captions by combining the visual feature extraction capabilities of the VGG16 architecture with the sequential data processing strength of LSTM networks. By utilizing a benchmark dataset consisting of 8,000 images, each accompanied by five unique captions that identify significant entities and events, the system strives to generate accurate text across a wide range of scenarios obtained from various Flickr groups. By attempting to improve the coherence and relevance of captions, this methodology seeks to expand the capabilities of automated image description and retrieval systems. The efficient extraction of high-level visual features from images is made possible through the use of VGG16. On the other hand, LSTM networks demonstrate exceptional performance in modeling sequential dependencies present in textual data, thereby guaranteeing the generation of accurate and contextually rich captions. The robust training of the model is facilitated by the inclusion of multiple captions per image in the dataset, which allows for the capture of diverse perspectives and subtleties that are inherent in the interpretation of images. Through the integration of these methodologies, the system endeavors to surmount obstacles including uncertainty and fluctuation in the interpretation of images, thus augmenting the caliber of captions produced. This development has substantial ramifications for accessibility, content comprehension, and image search, as it facilitates more accurate and informative depictions of visual content, thereby augmenting user experience and practicality.

Keywords: LSTM, visual features, VGG16, integration methodology, interpretation of images.

I. Introduction

One of the most recent developments in the field of computer vision and machine learning is the process of training computers how to provide captions for images automatically. This endeavour includes a number of components, including the comprehension of image scenes, the extraction of features, and the translation of visual representations into regular languages. This effort holds a great deal of promise in a number of areas, including the creation of different kinds of assistive devices for persons who are blind and the provision of aid with captioning responsibilities. The purpose of this project is to come up with captions that are suitable for the image that has been provided. The captions will be selected in a manner that is reflective of the context being offered by the photos. The methods that are currently in use make use of convolutional neural networks (CNNs) and recurrent neural networks (RNNs) or their modifications in order to generate captions that are deemed acceptable. Through the utilization of recurrent neural networks (RNNs) as decoders to supply linguistic descriptions and VGGs to encode the image into feature vectors, these networks offer an encoder-decoder technique that can be utilized to accomplish this objective. The architectures of the models could be very different. When it comes to the encoder component, features from an image are retrieved with the help of a CNN that has been pre-trained. Following the incorporation of the image into the CNN, these

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Analyzation of the Bitcoin Blockchain: Financial Elements Behind The Adoption

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Abstract: In early 2009, alongside the emergence of blockchain technology, Bitcoin brought forth numerous benefits for both developed and developing nations. One notable advantage is it's capacity to facilitate direct transactions without reliance on traditional banking systems, which is particularly beneficial for foreign currency exchanges like remittances due to lower transaction fees. Moreover, Bitcoin offers a degree of anonymity that enables frequent transactions. These benefits, combined with various other factors, led to Bitcoin's unprecedented popularity and a significant price surge in 2017. However, despite the widespread attention given to the Bitcoin blockchain, deciphering its source continues to pose difficulties because of the system's inherent anonymity. Consequently, understanding its social impact remains difficult. In this scenario, we make use of data such as the total count of Bitcoins in circulation and downloaded by clients, IP addresses associated with transactions, and W3c searches related to Bitcoin to gain insight into the evolution of the systems in different parts of the world. By utilizing these indicators to represent user adoption, we've plugplaced various economic measures, including GDP per capita, trading freedom, and W3C penetration, as pivotal factors linked to the level of user engagement and profits.

Keywords— Bitcoin, Blockchain technology, Direct transactions, Traditional banking systems, Remittances, Transaction fees, Anonymity, Price surge, Social impact, Bitcoins in circulation, IP addresses, W3C searches, User adoption, Trading freedom, W3C penetration, Economic measures, User engagement, Profits.

I. INTRODUCTION

Bitcoin, introduced in 2009, emerged as a digital currency offering an alternative to traditional financial systems. It operates without centralized control by institutions, governments, or banks, and introduced the groundbreaking concept of blockchain technology. Bitcoin has seen significant growth in recent years, establishing itself as a robust entity and a subject of considerable interest for research. The potential future applications of blockchain and cryptocurrencies as a whole are highly promising, despite the technology being relatively new and still in its early stages of development.

Understanding the decentralized nature of Bitcoin as a leading example of blockchain-based digital currency poses a significant challenge. Ongoing research is thriving with various investigations into the Bitcoin blockchain. Much of this work focuses on analysing blockchain technology itself, particularly its development and application in diverse areas. Another important research area revolves around financial and economic aspects, with a key question being the evolution of transaction fees and issues related to regulatory frameworks and policies. From a sociological perspective, studying Bitcoin adoption presents difficulties due to the inherent opacity of the network.

Mechanized computerized types of cash, for instance, Bitcoin have the potential to create significant social impact by enabling fast and inexpensive transactions. It offers a method for handling tips, donations, and minor payments independently of conventional banking systems, paving the way for widespread adoption. In any case, as clients can create any numerous monikers they need, this impact is trying to gauge. Prior research exploring the social implications of Bitcoin has relied on external data sets, including the count of Bitcoin client software downloads by country and the amount of government-issued currency engaged in Bitcoin transactions on exchanges. Additionally, they have analysed Bitcoin exchange data. [10, 12]. One essential initial step in utilizing Bitcoin trading data, the deanonymization process involves clustering pseudonyms to uncover patterns among users. This approach serves two primary objectives: evaluating the security of the Bitcoin system [13] and understanding the characteristics of transactions [12, 14, 15]. [11] proposed a system which is an innovative congestion control algorithm named FAQ-MAST TCP (Fast Active Queue Management Stability Transmission Control Protocol) is aimed for high-speed long-latency networks. Four major difficulties in FAQ-MAST TCP are highlighted at both packet and flow levels.

Here, we suggest merging Bitcoin transaction data with external data sources to evaluate Bitcoin adoption on a country level. Examining the pivotal elements that may either boost motivation or impede advancement within the

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Web-Based Graphical Password Authentication System

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Abstract—*Alphanumeric passwords are being replaced with safer, more user-friendly ones. These alternatives are growing in popularity. One prominent option is a graphical password authentication system. This study examines a web-based graphical password authentication system that aims to improve security and usability. The system is kept user-friendly throughout the study. This method reduces the hazards of alphanumeric passwords. Combining picture memorability with text-based passwords achieves this. This research emphasizes the usefulness and practicality of graphical password authentication for online application security. This study will concentrate on the efficacy of these methods. This is achieved by thoroughly examining the system's design, implementation, and user experience.*

Keywords—Graphical password authentication, multi-factor authentication, usability, security, feasibility, user experience, intuitive interface, encryption, open-source technologies, accessibility.

I. INTRODUCTION

User authentication is the most crucial part of cybersecurity since it prevents unauthorized access to critical data and resources in web-based systems. Because it considers user authentication. However, alphanumeric passwords are becoming increasingly susceptible to brute-force assaults and password guessing. Examples of hazards include. Due to the weaknesses, other authentication methods that mix security and usability are gaining popularity. This attention is spurred by the vulnerabilities revealed. Bringing out flaws has sparked this attention. Graphical password authentication solutions are intriguing because they avoid the limits of alphanumeric passwords. This is a response to password constraints. Graphical passwords may simplify client authentication and increase security. They use human cognitive talents better at recognizing and remembering visuals than words. This paper analyses a web-based graphical password authentication system designed for secure and easy authentication. The article's eventual objective is a complete system study. This method is supplied to improve safety and user convenience. This assignment may be completed using graphical and text-based components. This study will examine the architectural, implementation, and user experience aspects of the graphical password authentication system. This study aims to contribute to the ongoing conversation concerning web-based authentication solutions.

II. LITERATURE REVIEW

Graphical password authentication systems have garnered attention as a viable alternative to alphabetic and numeric passwords in recent years.

Some credit this interest for the creation of these systems. The paper reviews all graphical password research in this section. This research examinesseveral tactics, including recognition and recall methods and recognition methods, in addition to Passfaces and PassPoints.

A. A Shoulder Surfing Resistant Graphical Password Scheme

Rajarajan and Priyadarsini (2021) created SelfiePass, a photo-based password system. To prevent password-related shoulder surfing attacks. An attacker is "shoulder surfing" when they watch a real user's login procedure, which might compromise their password. Malicious actors invented shoulder surfing. Sometimes shoulder surfing is called shoulder surfing. SelfiePass solves this with selfie-based authentication. This authentication technique uses the user's familiarity with their face to reduce the possibility of unauthorized viewing. To engage in a SelfiePass,

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Ensuring Charity Accountability Through Blockchain Technology

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Abstract : Blockchain Technology has innumerable benefits such as timestamp, accountability, transparency, high secured, highly scalable. It maintains a distributed and immutable ledgerfor transactions managed by multiple participants. Non-Profitorganizations work towards the welfare of society and aim to address various social and environmental causes. Non-Profit organizations work towards the welfare of society the organization earns the money as donation and utilized to address various social and environmental issues. Now-a-days we observe that diminishing number of donors because lack of transparency in utilization of funds. A blockchain is used to manage the traceability and safety of the donation. It is a digital ledger system that operates in a decentralized manner, recording transactions among numerous parties in a manner that can be verifiable, immutable, transparent, and secure manner. The proposed paper is a decentralized system which is built on Solana Blockchain using Rust smart contracts, which provides improved accuracy, transparent nature and donors are easily to track the assets and it mainly focuses on conserving of gas fee of blockchain while compared to Ethereum blockchain.

Keywords: Charity accountability, Blockchain technology, Solana blockchain, Smart contracts, Cryptocurrency, Web3, Transparency, Donation traceability, Philanthropy services, Donor trust.

I. INTRODUCTION

Within the computerized time, innovation proceeds to revolutionize different businesses and segments. One such inventive innovation that has picked up noteworthy consideration is blockchain. This innovation, popular for being the spine of cryptocurrencies like Bitcoin and Ethereum, has quickly extended its impact on numerous businesses. Blockchain innovation has developed as a game-changer, disturbing conventional forms and clearing the way for modern utilization cases. Blockchain innovation, built upon a combination of science, calculations, cryptography, and financial models, has presented a decentralized and straightforward framework for recording and confirming exchanges. By dispensing with the requirement for a central specialist to approve exchanges, blockchain empowers peer-to-peer intuition and cultivates belief among clients. This technology has the potential to convert different segments, extending from funds and healthcare to instruction and mental property. Blockchain innovation has become a family title, much obliged to its affiliation with cryptocurrencies such as Bitcoin and Ethereum. Its effect goes past advanced monetary standards, as numerous businesses are investigating its capabilities and finding modern utilization cases day by day. In now-a-days' time, the necessity for conviction and straightforwardness has ended up dynamically basic. Blockchain innovation offers an arrangement for this requirement by giving a decentralized and secure stage for putting away and preparing data. This cutting-edge advancement can revolutionize businesses and make changes in the way trades are conducted. As businesses proceed to investigate the potential of blockchain innovation, there's still much to find.

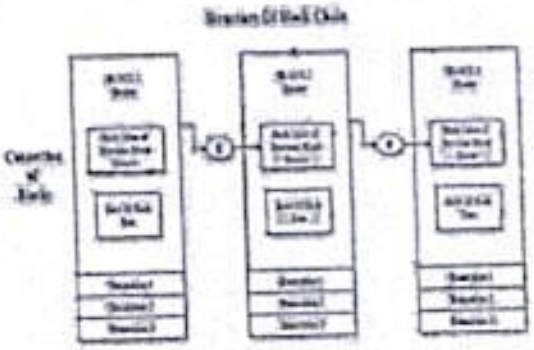

Figure 1: Structure of Block chain

People and institutions contribute funds, goods, and services to nonprofit organizations to aid different causes like reducing poverty, aiding in disaster recovery, promoting education, providing medical assistance, and conserving the environment. It fosters a spirit of giving and compassion, uniting communities and bringing about a positive change. There are various ways to engage in charitable giving, such as giving money, volunteering skills and time, and providing goods and resources. The impact of charitable giving is broad and far-reaching, reaching people and communities in need and inspiring them during challenging times. A blockchain stores data in blocks linked together like a chain. Each block contains encrypted information and a unique fingerprint, making it nearly impossible to tamper with the data according to Figure-1.

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Dr.N.NeelimaPriyanka *et al.*, International Journal of Advanced Research in Innovative Discoveries in Engineering and Applications[IJARIDEA]

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AN ADAPTIVE PONG GAME IMPLEMENTATION USING ARTIFICIAL INTELLIGENCE

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Abstract:

Pong is a foundational game. The device has the ability to transmit artificial intelligence to a computer. The model reaction time is a mechanism that allows for a certain duration of time to elapse before making decisions. The methodology has two distinct components: model accuracy, whereby the computer possesses accurate knowledge of the ball's landing location, and the incorporation of a random error component to deceive the machine into seeming faulty. In this article, the objective is to achieve equilibrium in the game by enhancing the machine's capabilities in the event of a loss, and exacerbating the situation if the computer is prevailing. Pong is a straightforward game. There is a possibility for the provision of artificial intelligence to computers. The model's accuracy is determined by the computer's precise knowledge of the ball's landing location, while also including a random error component to simulate the computer's inherent faults. Model response time entails a certain duration of waiting prior to making judgments. In order to achieve equilibrium in the game, enhance the computer's capabilities in the event of a loss and diminish them thereafter.

Keywords: ping pong, game, casual games, educational games, video games, players.

Introduction:

Ping-Pong is a ball game that has resemblances with lawn tennis and is often played on a level table that is divided into two equal courts by a net that is securely connected across its width at the midpoint. The process of attaining expertise in a novel sport involves many efforts on the side of a person, including acquainting oneself with the laws, procuring the necessary equipment, and maybe

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SIGN LANGUAGE TRANSLATOR SYSTEM USING DATA SCIENCE FOR EFFECTIVE COMMUNICATION

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Abstract: The Sign Language Translator System (SLTS) is a pioneering endeavor that was developed to bridge the communication gap between those who are deaf and the community of hearing people. The goal of this system is to revolutionize interaction for the deaf by enabling seamless two-way communication. It does this by combining cutting-edge technology such as sign recognition, voice recognition and synthesis, and sign avatars. The purpose of this study is to investigate the conception of the Sign Language Translation System (SLTS), with a particular focus on its utilization of the most extensive English Sign Language database. Additionally, the research investigates the potential of the SLTS to favorably affect the integration of deaf persons into society.

Keywords: *Sign language Translator System, Sign Recognition, Speech Synthesis, Data Science, English Sign Language, Communication Barriers, Deaf Integration.*

1. Introduction

The revolutionary software known as the Sign Language Translator System (SLTS) was established with the purpose of overcoming the challenges in communication that are faced by members of the Deaf community . The purpose of this forward-thinking endeavor is to utilize the power of data science and technology in order to bridge the communication gap that exists between those who are deaf and others who do not understand sign language. The Speech Language Therapy System (SLTS) was developed because there is a compelling need to increase accessibility and inclusion in a number of aspects of everyday life for people who are deaf. This need was the impetus for the development of the SLTS. The Deaf community continues to face a significant obstacle in terms of communication, particularly when engaging with others who are not skilled in sign language. This is the case despite the fact that technical advancements have been made. There are challenges that deaf people encounter when it comes to communicating with non-signing individuals in a range of settings, including as the job, the family, healthcare, and the process of receiving services. It is possible that sign language interpreters are cumbersome, time-consuming, and occasionally unavailable, which might result in communication delays and misunderstandings. These difficulties may arise if one relies solely on interpreters who are proficient in sign language. This dependency can also result in discrepancies in access to critical information and services, which can worsen existing inequalities in areas like as education, employment, healthcare, and social integration. Moreover, this dependence causes differences in access to vital information and services.

A technologically-driven solution for real-time communication is the overarching goal of the Sign Language Translator System (SLTS), which intends to empower deaf people. This solution is intended to be provided to individuals who are deaf. By utilizing data science approaches, natural language processing, and user-friendly interfaces, the Speech Language Technology System (SLTS) aims to make it simpler for deaf individuals to communicate successfully

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An Advanced Food Nutrition Recommendation Using Deep Learning

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Abstract
In the modern world, a healthy body depends on the number of calories consumed, hence monitoring calorie intake is necessary to maintain good health. The existing system calorie estimation is to be done manually. The proposed model is to provide a unique solution for measuring calories by using a deep learning algorithm. The food calorie calculation is very important in the medical field. Because this food calorie is providing good health condition. This measurement is taken from food images in different objects that as fruits and vegetables. This measurement is taken with the help of a neural network. The tensor flow is one of the best methods to classify the machine learning method. This method is implemented to calculate the food calories with the help of a Convolutional Neural Network. The input of this calculated model is taken as an image of food. The food calorie value is calculated in the proposed CNN model with the help of food object detection.

Keywords:
Convolutional Neural Network; Deep Learning; Food Classification; Food Detection; Pattern Recognition; Tensorflow;

Introduction

In the modern era, where health and wellness are paramount, understanding the calorie content of food has become increasingly vital. Whether aiming for weight management, athletic performance, or simply maintaining a healthy lifestyle, individuals are frequently seeking accurate methods to assess the energy content of the food they consume. Traditionally, calorie estimation has relied on manual calculations or standardized nutritional labels. However, with the advent of machine learning techniques, a new avenue has emerged for predicting food calories with enhanced accuracy and efficiency.

Machine learning, a subset of artificial intelligence, has revolutionized various sectors by enabling systems to learn from data, identify patterns, and make predictions without explicit programming. In the realm of nutrition and health, machine learning offers immense potential for improving the accuracy of food calorie estimation. By leveraging vast datasets comprising nutritional information, ingredient compositions, and portion sizes, machine learning algorithms can discern complex relationships and nuances that may elude traditional methods. The motivation behind employing machine learning for food calorie estimation stems from the limitations of existing approaches. Manual calorie counting is labour-intensive, prone to errors, and often relies on subjective estimations of portion sizes. On the other hand, while standardized nutritional labels provide valuable information, they may not account for variations in preparation methods, ingredient quality, or regional differences. Moreover, these labels are typically based on average values and may not accurately reflect the actual calorie content of specific dishes or homemade meals. In contrast, machine learning offers a data-driven approach that can adapt to diverse dietary patterns, culinary practices, and individual preferences. By analyzing comprehensive datasets encompassing a wide array of foods and their

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E-commerce Chatbot For Price Negotiation Using NLP

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Abstract: Price Negotiating Chatbot with text and voice functions is available in this article. The setting is an e-commerce platform. The chatbot makes easy and effective negotiations possible for consumers and the platform by understanding voice commands and providing clear pricing information. Voice or text interactions allow users to participate in conversations, providing flexibility and simplicity. The platform provides a well-organized user experience from product browsing to purchase confirmation, increasing user engagement and delight. Adding order management and sentiment analysis functionality boosts the platform's value. Chatbots have greatly improved user experiences and transactional procedures in e-commerce. This is a great innovation and improvement.

Keywords: Price Negotiating Chatbot, Text and Voice Interaction, E-commerce Platform, User Engagement, Negotiation Efficiency

I. INTRODUCTION

E-commerce is competitive and consumer expectations are rising, thus the ability to negotiate price may be vital to sales and customer satisfaction. E-commerce is marked by rising customer expectations. Given the conditions, price negotiation may be helpful. Traditional methods are utilised for pricing negotiations. These approaches usually include buyer-seller contact. This contact may take a long time, and the results may not be beneficial to both sides. Chatbots with text and speech interfaces may make negotiations easier and faster. It also solves the issue practically. In recognition of mandatory procedures, this is done.

Chatbots have transformed customer service in several organisations. This is because chatbots respond instantly and are customised to each user. Natural language processing (NLP) and machine learning techniques allow chatbots to conduct meaningful conversations, understand user preferences, and provide relevant information or support. Chatbots can do all these duties. Chatbots are used in e-commerce to provide customer assistance, track orders, and recommend products.

However, chatbots in price negotiating are understudied. The capacity to dynamically negotiate rates based on product demand, inventory levels, and customer preferences might greatly enhance online purchasing. Using text and audio interfaces makes bargaining skills more accessible. This lets users with different communication preferences and accessibility needs be served simultaneously. This article recommends a new online pricing negotiation strategy. Here, a chatbot that can engage with clients via text and voice chatting is being created. The solution simplifies negotiation by letting people connect with the chatbot in a simple and comfortable manner. A dataset of product price and negotiation strategies is utilised by the chatbot to deliver information. Next, complex algorithms are used to generate price suggestions and engage customers in fee negotiations and this is achieved by using the dataset.

User feedback and empirical evaluation are utilised to prove the pricing negotiating chatbot is useful and usable. Thus, chatbots may change how clients engage with e-commerce sites. This research developed the field of conversational agents in e-commerce and created new options to improve customer experiences while making electronic transactions.

II. LITERATURE REVIEW

E-commerce is being transformed by chatbots' improved consumer involvement and business operations. Chatbots may provide new solutions and both advantages helped build chatbots. This part covers chatbot, e-commerce negotiation, and voice/text interface literature to complete the study environment overview. It seeks to identify major scientific gaps immediately.

"Integrating Intellectual Consciousness AI based on Ensemble Machine Learning for Price Negotiation in E-commerce using Text and Voice-Based Chatbot"

Intellectual awareness and ensemble machine learning (EML) work. This department revolutionised online retail price negotiation using text and speech chatbots utilising artificial intelligence. This novel approach to online marketplace negotiation was developed by

Image/Video Super Resolution Using CNN And Auto encoders

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Abstract— **For the purpose of improving the coding efficiency of lossy compressed films, this study presents a groundbreaking deep learning approach. More specifically, it makes use of a Variable-Filter-Size Residue-Learning Convolutional Neural Network with Encoders. Through the utilization of this cutting-edge method, common distortions and artifacts like as blocking, blurring, and ringing are addressed. By surpassing the limitations of the High Efficiency Video Coding (HEVC) standard, our model is able to make significant improvements in both the quality of the video and the efficiency with which it compresses the video. In addition, we present a novel approach to the problem of picture super-resolution by making use of Convolutional Neural Networks (CNNs) and auto encoders. A deep convolutional neural network (CNN) model is trained in conjunction with an auto encoder architecture through the utilization of paired datasets consisting of high-resolution and low-resolution pictures using our methods. Throughout the training process, the CNN is able to extract high-level features from low-resolution photos, while the auto encoder is able to learn how to properly rebuild high-resolution images, therefore capturing delicate details and textures. During the inference phase, our trained model takes an input image with a low resolution and creates an output image with a high resolution that corresponds to the same input image.**

Keywords—Encoder, HEVC, CNN, High resolution image

I. INTRODUCTION

Since the beginning of this decade, there has been a significant increase in the consumption of videos across a variety of platforms, which has brought to light the urgent requirement for effective video coding approaches that are able to manage enormous amounts of data while maintaining playback quality [1]. Despite the fact that existing standards such as H.264 and H.265/HEVC have achieved substantial gains in compression efficiency, there are still difficulties that need to be addressed, particularly with the increasing complexity and quality of video material. Deep learning approaches, most notably convolutional neural networks (CNNs), have emerged as potential tools for improving the efficiency of video coding [2]. These methods build optimum representations from video data directly, which allows them to directly address the difficulties that have been presented. The necessity of overcoming the restrictions of conventional coding standards and enhancing the effectiveness of compression techniques is the driving force behind our endeavor [3]. Our goal is to develop a unique technique that improves the efficiency of video coding systems by extracting efficient representations directly from video frames. This will be accomplished by utilizing the capabilities of deep learning, in particular convolutional neural networks (CNNs) [4]. This strategy has the ability to significantly lower bit rates, improve compression ratios, and boost visual quality. As a result, it will make it possible to stream videos more smoothly, increase transmission speeds, and provide users with improved experiences across a variety of devices [5]. One of the primary concerns that this project seeks to solve is the improvement of video coding efficiency through the implementation of deep learning strategies, more especially encoders that are based on CNN [6]. Even if they are successful, traditional coding standards have difficulty with compression efficiency, particularly when it comes to high-resolution and high-fidelity video material. The difficulty of conventional algorithms to adapt to the dynamic and delicate structure of video data is the source of this constraint. As a consequence, the compression performance is inadequate, and the visual quality is diminished [7].

The application of deep learning, which is able to grasp intricate spatial-temporal correlations in video data, presents a promising route for the improvement of compression efficiency [8]. It is possible to take use of the hierarchical structure of video data by utilizing encoders that are based on CNN. This allows us to extract relevant features and reduce duplication, which ultimately results in improved compression ratios and visual quality [9]. By putting forward a novel strategy that incorporates CNN-based encoders into pre-existing systems, the objective of our research is to close the gap that exists between deep learning and video coding [10]. Through the process of learning efficient representations directly from video data, this integration intends to improve both the aesthetic quality and the compression efficiency of the video. We hope that by using this approach, we will be able to change the approaches that are used for video coding, therefore confronting the issues that are brought about by the increasing amount and complexity of video material. Lossy compression, on the other hand, is able to effectively reduce the size of videos; nevertheless, it frequently produces artifacts that lower the quality of the video [11]. There are already standards in place, such as HEVC, that minimize these concerns to some degree through the use of in-loop filters; nevertheless, the nonlinear nature of distortions limits the effectiveness of these filters. In order to circumvent this constraint, the objective of our project is to create a post-processing model that is appropriate for use at the decoder stage and is based on deep learning [12]. Through the reduction of artifacts and distortions, this model intends to improve the overall efficiency of coding, which will ultimately result in an improvement in the quality of lossy compressed movies.

II. LITERATURE REVIEW

The IEEE Transactions on Circuits and Systems for Video Technology paper by Afonso, Zhang, and Bull (2018) offers a new

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Identifying Inauthentic Online Reviews: Leveraging Semi-Supervised and Supervised Learning

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Abstract: This paper explores the identification of counterfeit online reviews, a matter of considerable consequence for both consumer decision-making and business credibility. The proliferation of online marketplaces has amplified concerns regarding review authenticity, as they are susceptible to manipulation by unscrupulous individuals or entities. Various text mining models, primarily focusing on content-based strategies, are introduced to detect fraudulent reviews. These models employ techniques such as the Expectation-Maximization (EM) algorithm, Naive Bayes classifier, and Support Vector Machine (SVM) classifier, utilizing features like word frequency count, sentiment polarity, and review length. Through experimentation on a dataset comprising ecommerce reviews, the efficacy of the proposed approaches is demonstrated, with semi-supervised methods achieving accuracies comparable to or exceeding those of previous techniques.

Keywords: fake online reviews, detection, consumer decision-making, business reputation, online marketplaces, text mining models, semi-supervised learning, supervised learning, content-based approaches, Expectation-Maximization algorithm, Naive Bayes classifier, Support Vector Machine classifier, word frequency count, sentiment polarity, review length, experimental results, ecommerce reviews.

I Introduction: Technological advancements are revolutionizing various aspects of our lives, with online marketplaces emerging as a prominent example. These platforms offer convenience and efficiency, allowing users to shop and make reservations with ease. However, as reliance on online reviews grows, so does the concern surrounding fake feedback. Genuine reviews play a pivotal role in shaping a company's reputation and influencing consumer decisions. Yet, the proliferation of fake reviews presents significant challenges. Individuals may post fraudulent reviews to promote their own products or tarnish competitors' reputations.

Researchers have explored numerous approaches to detect fake online reviews, distinguishing between content-based and user behavior-based methods. Content-based strategies analyze the textual content of reviews, while user behavior-based methods consider factors like the reviewer's country, IP address, and posting frequency. Most proposed approaches rely on

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Advancing Agricultural Product Grading with Deep Learning Techniques

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Abstract—**Through the implementation of transfer learning strategies inside deep learning frameworks, the objective of this project is to implement a transformation in the tomato quality classification process. By classifying tomatoes, guavas, and lemons into a variety of separate groups according to their quality and the flaws that have been detected (such as defect-free, cracks, pests, skin cracks, sunburn, and end rot), the project intends to overcome the limitations that are associated with tradit onal classification methods. Using a dataset that has been rigorously curated and verified, this research presents a novel technique that makes use of neural networks that have already been trained in order to achieve extraordinary accuracy, efficiency, and scalability in the evaluation of tomato quality. Through this work, there is the potential to make substantial advancements in agricultural produce evaluation procedures.**

Keywords—component, formatting, style, styling, insert (key words)

I. Introduction

Over the course of the past several years, technology advancements have been the primary impetus behind significant developments that have occurred in a broad variety of different businesses. Particularly noteworthy is the fact that agriculture has been at the forefront of this technological transformation [1]. The standard techniques of grading and evaluating agricultural products have run into a number of challenges in order to meet the ever-increasing demand for high-quality food while also preserving uniformity and reliability. A number of these challenges have been faced. Bringing about a revolutionary transformation in the process of tomato quality classification is the goal of this research. This will be accomplished through the employment of transfer learning methodologies that operate inside deep learning frameworks [2]. Through the categorization of tomatoes, guavas, and citrus into distinct classes that are differentiated from one another based on quality and defects such as defect-free, cracks, pest, skin cracks, sunburn, and end rot, the project intends to improve upon the limitations that are associated with existing classification systems [3]. Specifically, the project aims to improve upon the limitations that are associated with different classification systems. This research presents a novel approach to evaluating tomato quality that takes use of neural networks that have already been trained [4]. The goal of this approach is to attain high levels of accuracy, efficiency, and scalability. As a consequence of this, the method of assessing the output of agricultural production is enhanced [5]. For the purpose of this investigation, the dataset that was utilized was meticulously gathered and validated. In the process of grading, traditional methods might often have trouble efficiently discriminating between different quality ratings and recognizing individual problems [6]. This can lead to inconsistencies and inaccuracies in the grading process. Additionally, the scalability of these systems is limited, which makes it difficult to successfully handle vast volumes of data. This challenges the capacity to effectively manage the data. Furthermore, it is possible that traditional approaches to machine learning may not possess the capability to generalize adequately across a large variety of datasets [7]. This would further impair the reliability and robustness of the grading system. Because of this, there is an immediate need for the creation of creative techniques that are capable of overcoming these challenges and providing a solution that is more effective for the grading of agricultural products such as tomatoes, guavas, and citrus fruits [8]. This is a necessity that must be satisfied as soon as possible.

II. Literature Survey

In their 2019 work, Pacheco and López present a way to evaluate organoleptic ripeness in tomatoes by categorizing them according to color. The work, which was presented at the 2019 IEEE XXII Symposium on Image, Signal Processing and Artificial Vision (STSIVA), makes use of machine learning methods including K-Means Clustering, Multi-Layer Perceptron (MLP), and K-Nearest Neighbors (K-NN). The research provides insights into boosting tomato grading procedures, hence enhancing agricultural practices and product quality, by concentrating on hue as a crucial signal of maturity.

Kukreja et al. describe a precision agricultural approach that uses Random Forest algorithms and Convolutional Neural Networks (CNN) to diagnose guava illnesses in their article, which was presented at the 2023 SMART GENCON conference. The study highlights the approach's potential to transform agricultural disease management techniques by demonstrating how well it can identify guava infections.

In a study that will be presented at the 2023 ICSCCC conference, Gupta et al. suggest a new method that uses a hybrid CNN-SVM model to identify and categorize lemon illnesses. The study, "Lemon Diseases Detection and

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Virtual Mouse Operations Using Webcam

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Abstract-This abstract introduces an innovative paradigm for computer interaction that substitutes traditional input modalities such as physical mice and touch displays with Hand Tracking and Gestures. Our system, which was constructed using the Open CV library and Python, implements computer vision techniques in order to monitor hand movements that are captured by a webcam. Sophisticated gesture recognition algorithms are utilized to convert these hand movements into mouse controls, thereby enabling users to navigate the system and perform mouse operations in an intuitive manner. Additionally, our system expands its practicality beyond the conventional capabilities of the mouse by integrating hand gestures for volume control, thus enhancing the overall user experience. By leveraging sophisticated computer vision methods, this strategy integrates gestural input into computing environments in a seamless manner, resulting in a moreuser-friendly and effective interaction paradigm. Through the utilization of gesture recognition and hand tracking, our system showcases the capacity to fundamentally transform paradigms of human-computer interaction, especially in situations where conventional input techniques may prove to be laborious or unfeasible.

Keywords--- Hand Tracking, Gestures, Virtual Mouse Interface, Computer Vision, Open CV, Python.

I. INTRODUCTION

Amidst the dynamic realm of computer technology, there is a persistent surge in the need for human-computer interaction methods that are both intuitive and efficient. With the increasing prevalence of touch screen interfaces, which provide smooth interaction for specific applications, there continues to be a widespread requirement for alternative input modalities that surpass the drawbacks of expensive implementations and accessibility restrictions. The advent of virtual mouse systems, which utilize hand gestures captured by webcams, presents itself as a potentially effective resolution to this obstacle. The principal aim of this study is to construct a resilient virtual mouse system that possesses the ability to accurately and fluidly manipulate the computer cursor by interpreting hand gestures in real-time. In contrast to conventional input devices like physical mice or touchpads, this system provides users with a more flexible and intuitive mode of interaction by removing the need for physical hardware. At the core of the system's operation lies its capacity to precisely detect and convert hand gestures into cursor movements that appear on the screen. This involves implementing a system that not only recognizes the subtleties of hand gestures but also allows users to effortlessly execute routine mouse actions such as scrolling, clicking, and other navigational functions. One of the primary concerns investigated in this study is the assurance of the system's resilience in the face of diverse user demographics and environmental circumstances. The system strives to ensure consistent performance and efficacy in a variety of environments by addressing factors such as lighting variations, background clutter, and differences in hand sizes and shapes. Moreover, this study emphasizes the wider importance of exploring novel approaches to input methods. Although touch screen interfaces undeniably provide numerous benefits, their extensive implementation is frequently impeded by exorbitant expenses and unsuitability for specific use cases. Likewise, physical rodents, despite their widespread use, possess certain drawbacks with regard to their adaptability and availability. Given these factors into account, the creation of a virtual mouse system signifies a critical stride towards democratizing computer interaction; it provides users with an adaptable and easily navigable method of navigating digital environments. By means of careful planning and execution, this study aims to redefine the limits of human-computer interaction in order to promote a computational environment that is both efficient and inclusive for all participants.

II. METHODOLOGY

In the beginning, hand gesture recognition systems utilize cameras to acquire images. Subsequently, they employ various interfaces, such as position sensors or data gloves, to monitor the movements of the hands. In spite of the fact that

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Crime Data Analysis using Machine Learning

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Abstract— Criminal cases are rapidly increasing in our society day to day. These leading to backlog of pending cases. It is important to control the increasing crimes else it becomes tough to handle for Law Enforcement Agencies, they store the information of every crime after happening because there might be a chance of Pattern behind the occurrence of every crime so in order to control the crimes we are going to create a Machine Learning Model to predict the Crime pattern by training the model through K Nearest Neighbour (KNN) Algorithm to get more predictions accurately than existed Algorithms like Naïve Bayes, Decision Tree etc... Already the people worked on KNN algorithm to train model they used the dataset and get prediction rate of 75% but now we are working on same algorithm to get more than 85%. Also we used to work on this approach to reduce the code complexity. We would show the chance of occurrence of next two crime types based on our dataset. We collected the dataset from data.govern.in at the period of 2023 Jan - 2024 Jan.

Keywords— KNN, Machine Learning, Crime Prediction, Data Visualization, Accuracy, Pattern Recognition.

I.INTRODUCTION

Crimes are harmful actions that lead to threats to human lives. Crimes might be Robbery, Murder, Rape, Women trafficking, etc. As the population increases the rate of crime also increases day by day. The increasing cases lead to a backlog of pending cases to the police department, The crime activities have increased at a faster rate and it is the responsibility of the police department to control and reduce the crime activities. the department tries to solve the cases according to the evidence they got but in major cases, it is not as much possible to solve and decrease the crime rate as they think.

This analysis leads us to research the crimes to make them complex and free for solving the cases. The main thing here we are going to work on is predicting the occurrence of the next crime. It might be helpful to the Law Enforcement agencies and police departments to control and be aware of the respective situation. It will only be possible by collecting the previous information. So, we get the information stored in dataset format in which the dataset contains the relative features like crime type, place, time, arrest or not, victims, and whether the case is solved or not, etc... We could extract the dataset from official site data.govern.in. The prediction of the occurrence of crime can happen by working with a machine learning model and one optimal algorithm, here we are going to work with K Nearest Neighbour which is well-suited algorithm for both classification and regression and can also get good

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Improved cyber threat detection using artificial neural networks using event profiles

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ABSTRACT_ One of the most significant difficulties in cybersecurity is the development of an automated and effective cyber-threat detection technique. In this paper, we offer an AI technique for detecting cyber-threats using artificial neural networks. The suggested strategy turns a large number of collected security events into individual event profiles and uses a deep learning-based detection method to improve cyber-threat identification. For this project, we created an AI-SIEM system using event profiling for data preprocessing and various artificial neural network approaches such as FCNN, CNN, and LSTM. The system focuses on distinguishing between true and false positive signals, allowing security analysts to respond quickly to cyber threats.

1.INTRODUCTION

This project's idea is that artificial neural networks (ANNs) can detect cyber threats using event data. ANNs are a sort of machine learning algorithm inspired by the structure and function of the human brain, capable of recognising patterns in data and making predictions based on that knowledge. The rationale for this hypothesis is that existing cyber security solutions have proven insufficient to keep up with the evolving threat landscape, necessitating the development of new techniques to remain ahead of attackers. According to the literature review, ANNs have demonstrated promising outcomes in various areas of cyber security, including intrusion detection, virus analysis, and network traffic analysis. The goal of this research is to create a system for detecting cyber threats based on ANNs and event data. The project's goal is to improve cyber security by identifying known and undiscovered cyber dangers, giving real-time threat notifications, and reacting to emerging threats. The project's rationale is that ANNs can find patterns in event data that traditional cyber security systems may overlook, resulting in more accurate and fast threat detection and therefore lowering the risk of cyber-attacks. This logic is supported by the literature survey, which shows that ANNs have shown promising results in several domains of cyber

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Improved cyber threat detection using artificial neural networks using event profiles

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MULTI-VIEW FRAMEWORK FOR PREDICTING PATIENT EXPENDITURE USING ML

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ABSTRACT

Accurately predicting patient expenditure in healthcare is an important task with many applications such as provider profiling, accountable care management, and capitated medical payment adjustment. Existing approaches mainly rely on manually designed features and linear regression-based models, which require massive medical domain knowledge and show limited predictive performance. This paper proposes a multi-view deep learning framework to predict future healthcare expenditure at the individual level based on historical claims data. Our multi-view approach can effectively model the heterogeneous information, including patient demographic features, medical codes, drug usages, and facility utilization. We conducted expenditure forecasting tasks on a real-world pediatric dataset that contains more than 450,000 patients. The empirical results show that our proposed method outperforms all baselines for predicting medical expenditure. These findings help toward better preventive care and accountable care in the healthcare domain.

Keywords: Administrative Claims Data, Deep Learning, Electronic Health Record, Expenditure Prediction, Machine Learning.

I. INTRODUCTION

The increasing healthcare expenditures represent a significant challenge to healthcare providers and care organizations. As reported by the Centers for Medicare & Medicaid Services (CMS), the national health expenditure (NHE) for the United States grew 4.6% to $3.6 trillion in 2018 (i.e., $11,172 per person) and accounted for 17.7% of Gross Domestic Product (GDP). Specifically, Medicare spending grew 6.4% to $750.2 billion, and Medicaid grew by 3.0% to $597.4 billion.1 The healthcare system is likely to become unsustainable unless medical cost growth is kept in check [1]. It is imperative to control the healthcare expenditure increase and reduce the medical cost for each individual. Claims data, a special kind of Electronic Health Records (EHR) mainly for billing purposes, contains longitudinal patient health records including demographics, diagnoses, procedures, medications, facility National Health Expend Data claims data is one of the richest available sources for estimating patients' health conditions. The increasing amount of claims data provides a new, promising approach to tackle healthcare expenditure problems. Leveraging the historical claims, one can develop data-driven models to reveal important insights associated with the expenditure patterns. Specifically, an accurate medical cost predictive model at the individual level can help to identify patients with high medical risk and deliver a better quality of care. Existing approaches for patient expenditure prediction usually rely on handcrafted features and linear regression-based models [2], [3]. For example, the Diagnostic Cost Groups (DCG) [4] model applies linear regression to predict healthcare expenditure based on the diagnostic categories manually designed by domain experts. Bertsimas et al. [5] developed a Classification And Regression Tree (CART) based on the aggregate medical codes and handcrafted cost features. These models help to predict healthcare expenditures. However, they are suffering from the following limitations: 1) They heavily rely on domain knowledge to group high-dimensional medical codes into semantic-related categories. 2) they fail to utilize the rich information within claims data, such as facility usage, temporal information, and medical code correlation. 3). The linear regression-based model limits the predictive power and yields a sub-optimal model performance. This study aims to address these limitations in the literature.

II. LITERATURE SURVEY

1. Y. Zhao et al., "Predicting pharmacy costs and other medical costs using diagnoses and Rx claims," Med. Care, vol. 43, pp. 34–43, 2005

During congressional debate over the Medicare Part D prescription drug benefit, much attention was focused

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FARMER'S E-MARKET

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ABSTRACT

Farming is the primary occupation in India despite of this, today people involved in the farming belongs to the poor class and are in deep poverty because of lack of awareness of the facilities they get or the unavailability for farmers leads to poverty in the farming sector. Even after the hard work done by the farmers, in today's market, the farmers are cheated by the distributors, which leads to poverty. Farmer E-market would make all things automatic by using this website which makes it easier for farmers, serving as a better way to all the problems. Farmer's E-Market website will serves as a way for farmers to sell their farm products across the country with just some basic knowledge about how to use this website. An authorized-agent can sell their products in the website by posting their product details in the website.

Keywords: MERN Stack, Search Component, Chat Application, Categories.

I. INTRODUCTION

Farmers are the backbone of India. Agriculture represents 18 -19% of the GDP (Gross Domestic Product) in 2022-2023 and around half of the workforce. Agriculture is geographically the broadest financial segment and has a huge part of the general financial texture in India. Farmer's E-market is a web-based application developed to integrate some technologies and ideas to help maximize profit for farmers by limiting the involvement of middlemen to an extent and introducing a 'trust factor' in our website, we can help farmers and buyers in such a way that none of them have to compromise in product. However, farmers have to sell to middleman who sell the crops to the retailers and consumers for a high cost. This results in the middlemen taking all the profit and leaving none for the farmers availing any profit. Hence, farmers have to compromise their share which further results in getting loss.

Agricultural marketing still continues to be in a bad situation in rural India. In the absence of marketing facilities, the farmers have to depend upon local traders and middleman for the disposal of their farm produce which is sold at lower price.

Due to short lifespan of fruits and vegetables and other products, there is a high requirement of cold storages and warehouses to have a stable price across the year with very few and poorly managed warehouses. Government with less support to farmers and also giving a fair price to the harvest. Such uncertainties discourage farming in India.

In current competitive scenario every business establishment needs quality process to increase their efficiency as well as to improve their productivity. It is essential to give importance to that manual, time consuming & monotonous operations are automated so as to streamline the working of an organization. Since, the existing system takes more time and manpower for processing it, so keeping in mind this business philosophy that we propose a Farmer's E-Market.

Considering the above scenario and difficulties faced by farmers we have designed this web portal so that farmers will be able to market their product without the involvement of middlemen or any third party. Our system will deal with all aspects of farmer's products by placing them in our website.

Existing system

Existing online agriculture systems for marketing vary in their features and implementations. However, there are some common drawbacks that can be found in certain systems. Here are a few examples:

Farmer Connect struggles with several key issues, primarily stemming from its user-unfriendly environment and lack of essential features. The platform's interface is notoriously confusing, making it difficult for both farmers and buyers to navigate effectively. The registration process is overly cumbersome, requiring extensive information and multiple steps, which discourages potential users from signing up and participating in the market.

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Sentinel: An Integrated Model for Predicting Political Security Threats

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ABSTRACT_ This project focuses on monitoring online sentiments and opinions to enhance national security. Excessive emotions expressed online can potentially lead to threats like riots and civil unrest, which jeopardize social and political stability. Researchers highlight the connection between emotions, sentiments, and political security risks. To address this, the project introduces a novel framework that predicts political security threats using a hybrid approach combining lexicon-based analysis and machine learning in cyberspace. Decision Tree, Naive Bayes, Support Vector Machine classifiers and Random Forest classifier are employed. Results demonstrate that the hybrid Lexicon-based approach with Random Forest classifier achieves the highest performance in predicting political security threats, emphasizing the framework's effectiveness.

1.INTRODUCTION

Cyberspace has emerged as a critical domain in the realm of national security, with its significance highlighted in various intelligence reports. The Worldwide Threat Assessment of the US Intelligence Community (2016) underscores cyber-related threats as being on par with other major concerns such as terrorism, weapons proliferation, and counterintelligence. Safeguarding a nation's security in the modern era has grown increasingly complex, thanks to the deluge of big data, widespread dissemination of information, and the proliferation of online rumors and fake news.

Interconnected nature of cyberspace means that negative emotions and disruptive behaviors can quickly spread, posing significant risks to national security. Research has shown a clear correlation between emotional triggers and the emergence of security threats. Negative sentiments expressed in online content have the potential to evoke feelings of anger or fear, which in turn can escalate into events detrimental to national security. Given the prevalence of emotionally charged content in cyberspace, real-time detection of disruptive emotions is crucial for early intervention and effective management by authorities.

Despite the evident importance of understanding and managing emotions, there remains a notable space in research regarding the assessment and measurement of emotions. While opinion mining techniques have been explored in other domains, their application to national security, particularly in the context of emotion detection, remains underdeveloped. Consequently, there is a pressing need for comprehensive research in this area to better identify and address emerging threats.

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Predicting Adult Census Income with Machine Learning Techniques

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ABSTRACT_In contemporary finance and data science, the utilization of Machine Learning (ML) techniques to predict income levels has become increasingly indispensable. This study focuses on the domain of finance, specifically targeting the prediction of whether individuals earn more than $50,000 annually. Such binary classification tasks hold significant relevance across various applications, including targeted marketing, financial planning, and socioeconomic analysis.

The Adult Census Dataset sourced from Kaggle serves as the primary data source for this study. With its comprehensive array of attributes encompassing individuals' demographics, education, occupation, and income, the dataset facilitates extensive analysis and modeling endeavors. Through rigorous testing procedures, the study evaluates the performance of the constructed models using appropriate metrics, thereby identifying the most effective solution. Iterative refinement and optimization processes are employed to develop a predictive model capable of accurately discerning income levels based on input features

1.INTRODUCTION

In the ever-evolving landscape of finance and data science, the utilization of advanced technologies such as Machine Learning (ML) has revolutionized traditional approaches to predictive analysis. The prediction of income levels holds paramount significance in various domains, ranging from economic forecasting to targeted marketing strategies. Understanding the factors influencing individuals' income levels is crucial for businesses, policymakers, and researchers alike. Against this backdrop, this study embarks on the task of predicting whether individuals earn more than $50,000 annually, employing ML techniques within the finance domain.

The proliferation of data in the digital age has catalyzed the adoption of ML algorithms for predictive modeling tasks. ML algorithms have demonstrated remarkable efficacy in extracting patterns, trends, and insights from large and complex datasets. This study leverages this technological advancement to tackle the binary classification problem of predicting income levels, a task that has wide-ranging

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07

Advanced Detection of Distributed Concurrency Bugs in Cloud RAID through Log Mining and Enhancement Strategies

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#2 Assistant Professor in the Department of MCA,SRK Institute of Technology, Vijayawada.

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ABSTRACT_ Cloud systems suffer from distributed concurrency bugs, which often lead to data loss and service outage. This paper presents CLOUDRAID, a new automatical tool for finding distributed concurrency bugs efficiently and effectively. Distributed concurrency bugs are notoriously difficult to find as they are triggered by untimely interaction among nodes, i.e., unexpected message orderings. To identify simultaneousness bugs in cloud frameworks proficiently and successfully, CLOUDRAID breaks down and tests consequently just the message orderings that are probably going to uncover blunders. In particular, CLOUDRAID mines the logs from past executions to reveal the message orderings that are doable however deficiently tried. Likewise, we likewise propose a log upgrading procedure to present new logs consequently in the framework being tried. These additional logs added work on additional the adequacy of CLOUDRAID without presenting any recognizable exhibition above. Our log- based approach makes it appropriate for live frameworks. We have applied CLOUDRAID to break down six delegate disseminated frameworks: Hadoop2/Yarn, HBase, HDFS, Cassandra, Animal specialist, and Flink. CLOUDRAID has prevailed with regards to testing 60 distinct variants of these six frameworks (10 renditions for each framework) in 35 hours, uncovering 31 simultaneousness bugs, including nine new bugs that have never been accounted for. For these nine new bugs identified, which have all been affirmed by their unique engineers, three are basic and have previously been fixed.

1.INTRODUCTION

Distributed systems, such as scale-out computing frameworks distributed key-value stores scalable file systems and cluster management servicesare the fundamental building blocks of moderncloud applications. As cloud applications provide 24/7online services to users, high reliability of their underlyingdistributed systems becomes crucial. However, distributedsystems are notoriously difficult to get right. There are widelyexisting software

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CRICKET WIN PREDICTION

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ABSTRACT_Cricket Match Win Predictor is an innovative Python GUI application developed for predicting the outcome of IPL cricket matches with an impressive accuracy rate of 80%. The application utilises data sourced from ESPNCricinfo's Statsguru, a comprehensive database of cricket statistics. Leveraging advanced predictive algorithms, Cricket Match WinPredictor considers various factors including players' recent form, ground affinity, and historical performances against specific opposition teams.

The application's user-friendly interface, built using TKinter, facilitates easy input of match details and player information. Behind the scenes, web scrapingtechniques powered by BeautifulSoup are employed to extract relevant statistics from the Statsguru database. Key prediction factors such as Recent Form, Ground Form, and Opposition Score are meticulously calculated, with detailed scoring mechanisms tailored for batsmen, bowlers, and overall opposition performance. CricketMatchWinPredictor is designed to run on Linux-based distributions and requires Python 2 along with essential packages like TKinter, urllib, pandas, and bs4. Upon receiving input parameters, the application initiates web scraping to fetch pertinent statistics from the ESPNCricinfo web.

1.INTRODUCTION

Cricket, often regarded as a gentleman's game, has evolved into a global phenomenon with a massive fan base spanning continents. With the advent ofIPL cricket matches, the sport reached new heights of popularity, captivating audiences worldwide with its dynamic gameplay and thrilling encounters. In the realm of sports analytics, cricket has emerged as a fertile ground for data- driven insights and predictive modelling, offering enthusiasts and professionals alike a means to analyse past performances and forecast future outcomes.

The prediction of cricket match results has long been a topic of interest among cricket enthusiasts, pundits, and betting enthusiasts. Traditional methods of match prediction often relied on expert opinions, historical data analysis, and gut instincts. However, with the proliferation of data analytics and machine learning techniques, there has been a paradigm shift in how match outcomes are predicted. Advanced statistical models, coupled with access to vast repositories of cricketing data, have enabled the development of sophisticated prediction algorithms capable of forecasting match results with a high degree of accuracy.

In this context, the CricketMatchWinPredictor project emerges

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Voice Prescription System For Doctors

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ABSTRACT_ The traditional method of writing prescriptions by hand is still prevalent,posing a risk ofillegibility and errors, which can be harmful to patients. If a pharmacist gives the patientthe wrong medication due to the illegible writing, the patient may experience severe harm or negative drug reactions. Voice-based prescription systems have been developed to address this problem, transforming voice input to text. Additionally, most hospitals lack an electronic health record system, which can provide valuable information for patient treatment. In this computer era, the usage of technology solutions in the healthcare industry has significantly improved as a result of the need to improve healthcare and deliver effective healthcare. This study also proposes a medical diagnosis system using machine learning (ML) algorithms to accurately predict diseases unlike the traditional way. A software application was developed to reduce the workload of doctors by allowingthem to narratethe prescription to the patient, which is then converted from audio to text and extracted for medical terms. Categorised tokens were used to produce a PDF prescription. Thus our application aims to provide a potential solution for automating theprescription generation system and improving healthcare delivery.

1.INTRODUCTION

Medication side effects are the leading cause of death worldwide, and medication or prescription errors are responsible for tens of thousands of deaths worldwide each year. Most mistakes are made by nurses takingthe wrong medication or dose due to unclear handwriting, drug interactions, confusing drug names, etc. The introduction of speech recognition mobile applications can reduce some of these errors because prescription information can be retrieved and heard with voice responses instead of a medical script.

In medical facilities around the world, particularly in developing nationswhere the practice process is typically laborious and paper-based, this method can save money and lives. In India, subpar medications kill

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Teacher Record Management System

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ABSTRACT_The Teachers Record Management system is a web application developed using the Django framework(Python) and SQLite database.

We all know that teachers are important to our education, but what happens when they aren't easily available or accessible? There are many problems with finding teachers offline.

This teacher's record management would resolve these problems. Using this web portal, Parents or students can easily search teachers on the basis of subject and teacher name

1.INTRODUCTION

This project is aimed at developing a Web application that depicts online management of teachers and course records.
This project is useful for institutions for managing the teacher's information in simple manner. The system is intended for managing teacher's records.

1.1 PURPOSE OF THE PROJECT

The purpose of this system is:

To manage the teachers information in a simple way from anywhere.

This project also helps in administrative work such as keep information of teachers and subjects.

1.2 PROJECT SCOPE:

The project has a wide scope, as it is not intended to a particular organization. This project is going to develop generic software, which can be applied by any educational organization. More over it provides facility to its users. Also the software is going to provide a huge amount of summary data.

1.3 OBJECTIVE:

The main objective of the project is to provide the simple and user friendly GUI for managing the records in a simple way.

This project is useful for institutions for managing the teachers and subjects in simple manner.

The system is intended for managing teacher's records. And the privileges that are provided to admin are to read and manage records

2.PROPOSED SYSTEM

- The development of the new system contains the following activities, which try to automate the entire process keeping in view of the database integration approach.
- User friendliness is provided in the application with various controls.
- The system makes the overall project management much easier and flexible.

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Enhanced Driver Drowsiness Monitoring System Utilizing Visual Behavior Analysis and Machine Learning

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ABSTRACT_ This project introduces a novel approach to enhancing road safety through the implementation of drowsiness detection technology. Leveraging a webcam and machine learning SVM (Support Vector Machine) algorithm, the system monitors the visual behavior of a driver in real-time. Utilizing OpenCV, facial features are extracted from images captured by the webcam. The system then identifies signs of drowsiness such as blinking eyes or yawning mouth over consecutive frames. Upon detection, the system alerts the driver with timely messages to prevent potential accidents. A pre-trained SVM model is employed, and the Euclidean distance function is utilized to continuously predict the proximity of facial features to drowsiness thresholds. When facial feature distances indicate increased proximity to drowsiness, the system promptly alerts the driver, thereby promoting safer driving practices.

1.INTRODUCTION

Drowsy driving has become a leading cause of fatalities in road accidents, particularly among truck drivers who work continuously for long hours, often at night, and bus drivers operating long-distance routes or overnight services. The problem of driver drowsiness poses a significant challenge for drivers and passengers in all countries. Fatigue and drowsiness are responsible for numerous injuries and fatalities resulting from road accidents each year. Therefore, identifying driver fatigue and detecting it has become an active area of research. The initial stage of the drowsiness detection system comprises three modules: acquisition, processing, and warning. In the acquisition module, a video of the driver's face is captured and transmitted to the processing module where it is analyzed online to identify drowsiness. If drowsiness is detected, a warning or alarm sound is issued to the driver via the warning module. Typically, the methods used to detect driver drowsiness fall into three categories: vehicle-based, behavioral-based, and physiological-based. In the vehicle-based method, a variety of metrics are continuously monitored, such as steering wheel movement, accelerator or brake pattern, vehicle speed, lateral acceleration, shift in engine speed, deviations from lane position, etc. Any abnormal change in these values is considered indicative of driver drowsiness. This method is non-intrusive because the sensors are not physically attached to the driver. The behavioral-based method analyzes the visual behavior of the driver's face, such as eye opening and closing, eye blinking, yawning, head bending, etc., to detect drowsiness. This approach is also non-intrusive because standard cameras are used to capture these

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SECURE DATA TRANSFER AND DELETION FROM COUNTING BLOOM FLITER IN CLOUD COMPUTING

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ABSTRACT

More and more people are choosing to upload their data to a distant server in the cloud as the popularity of cloud storage keeps rising. The overhead of local storage is reduced substantially as a result of this. Data owners who are interested in switching cloud providers now have a vital requirement for cloud data transfer. This is because different providers provide data storage services of varying quality, including security, reliability, access speed, and cost. Therefore, data owners' concerns about the security of transferring data to a different cloud while wiping it from the original are reasonable. This paper introduces a new method that uses counting Bloom filters to solve this problem.The proposed method allows for both the secure transfer of data and its permanent deletion. In addition, the public verifiability criteria may be satisfied by the suggested technique without the need for a trusted third party. Finally, by creating a simulation application, we demonstrate the practicality and efficiency of our proposal.

Keywords: Cloud Computing, Security, Reliability, Bloom Channels.

I. INTRODUCTION

The term "cloud computing" describes the technology and software found in the datacenters that serve online applications as well as those apps themselves. The services have been referred to as software as a service (SaaS) for a significant period of time. Clouds are the computer code and hardware found in data centers. When a cloud is created and made available to the public on a pay-per-use basis, it is referred to as public. Utility Computing is the name given to the product. Examples of utility computing that are currently available are Microsoft Azure, Google App Engine, and Amazon Net Services. The phrase "private cloud" refers to internal datacenters that are owned by a company or other organization and are not intended for public usage. As a result, cloud computing combines software as a service (SaaS) with utility computing; private clouds are typically left out. The definition of "cloud computing" is broad; only when it is absolutely necessary to establish clarity should one of the opposite definitions be substituted. The responsibilities that people perform as suppliers or users of the various Cloud Computing tiers .

The term "future Internet" refers to any R&D project that aims to build the internet of the future, such as improving a networking infrastructure that spans a wide range of resources and consuming sectors. As a result, studying cloud technologies is essential for the future of Internet research. As with the clever outcome of the noting boom a few years prior, concerns about the perspectives provided by distributed computing and the future Internet typically stem from the vast amount of resources allotted to "mists."

As a result, the majority of cloud systems have focused on enabling remote PC access to data and applications, employing certain replication strategies to ensure availability, and finally achieving load-balancing flexibility. But because of the mix of ideas and goals unique to cloud structures, the genuine model of mists extends beyond such a fundamentally specialized approach and leads to issues like to those without restrictions on the Internet, but with a somewhat more concentrated concentration. In a way, cloud systems would provide features that let large portions of the Internet to operate without restrictions, essentially serving as a financial recommendation-driven mechanical acknowledgment.

II. LITERATURE SURVEY

1. The literature study is the most important step in the software development process. Before the tool is constructed, the time factor, economy, and company traffic redundancy elimination must be identified. Selecting the appropriate operating system and programming language comes next. These prerequisites are satisfied. Once the programmers start working on the tool, they will require all outside help.Senior

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Predictive Analytics for Crime Prevention and Analysis

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ABSTRACT_This research endeavors to construct a robust predictive model for crime rates in communities by leveraging machine learning techniques. Drawing upon the "Communities and Crime" dataset from the UCI Machine LearningRepository, which encompasses a diverse array of socio-economic and demographic attributes, including income levels, educational attainment, and law enforcement resources, our study aims to unravel the complex interplay between these factors and crime incidence.

The dataset, meticulously curated and publicly accessible, offers a fertile ground for investigating the multifaceted dynamics underlying community safety. Through advanced machine learning algorithms, we seek to discern intricate patterns and correlations within the dataset, thereby facilitating the development of a predictive model capable of accurately forecasting crimerates across different communities.

The implications of this research extend far beyond academic discourse, resonating deeply with real-world stakeholders vested in enhancing community safety and well-being. By harnessing the predictive capabilities of machine learning, we aspire to empower law enforcement agencies, policymakers, and community leaders with actionable intelligence, thereby enabling them to formulate more effective strategies for crime prevention and intervention

1.INTRODUCTION

Crime is a multifaceted and pervasive societal issue that poses significant challenges to public safety, community well-being, and socio-economic development. The complex interplay of various socio-economic, demographic, and environmental factors contributes to the spatial andtemporal variations in crime rates observed across different communities. Understanding these underlying dynamics is crucial for devising effective strategies to prevent and combat crime, thereby fostering safer and more secure environments for individuals and communities.

In recent years, the advent of machine learning and data analytics has offered new avenues for studying crime patterns and predicting future trends. By leveraging vast repositories of data and sophisticated analytical techniques, researchers and

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Automated Satellite Image Analysis with Convolutional Neural Networks

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ABSTRACT_ Satellite image classification is a critical task for remote sensing applications, aiding in land cover analysis, disaster monitoring, and environmental assessment. This paper presents an innovative method for satellite image classification by combining Convolutional Neural Networks (CNN) and Long Short-Term Memory (LSTM) networks. The proposed approach leverages the spatial hierarchies captured by CNNs and the temporal dependencies modeled by LSTMs, enhancing the system's ability to discern complex patterns over time. The CNN extracts spatial features from satellite imagery, and the LSTM sequentially processes these features, capturing temporal nuances for improved classification accuracy. Experimental results demonstrate the effectiveness of the hybrid model in handling multispectral satellite data, surpassing traditional methods. This method proves robust in scenarios with evolving land cover dynamics and varying atmospheric conditions. The integration of CNN and LSTM offers a promising solution for accurate and dynamic satellite image classification, contributing to the advancement of remote sensing applications.

Keywords:

Satellite image classification, Convolutional Neural Network (CNN), Long Short-Term Memory (LSTM), Remote sensing, Land cover analysis, Temporal dependencies, Multispectral data, Deep learning, Environmental monitoring.

1.INTRODUCTION

In an era of burgeoning Earth observation capabilities, satellite image classification plays a pivotal role in extracting valuable insights for applications ranging from land cover analysis to disaster monitoring. However, the existing methodologies often grapple with the complexities inherent in multispectral data, failing to comprehensively capture both spatial and temporal intricacies. This project introduces an innovative approach to address this gap by synergistically combining Convolutional

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Deep Learning-Driven Prediction System for Early Detection of Oral Cancer

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ABSTRACT_ The Oral Cancer Prediction System is a cutting-edge deep learning project that utilizes Efficient net algorithms to analyze histopathological images for the early detection of oral cancer. Developed using Python and SQLite database, this system is designed with a user-friendly interface and segregated into user and admin modules. Users can register, log in, upload images for cancer prediction, and view their prediction history to check for results indicating either normal tissue or oral squamous cell carcinoma (OSCC), along with the accuracy of these results. The system also allows users to manage their profiles and credentials securely. Administrators have their own set of tools, including the ability to log in, view user activity and prediction results, and even perform predictions themselves. They can also manage user registrations and maintain the system's security. This system aims to provide a fast, accurate, and non-invasive method for predicting oral cancer, which is crucial for early intervention and improving patient outcomes. With its emphasis on accessibility and precision, the Oral Cancer Prediction System Represents a significant advancement in medical diagnostics through technology.

1.INTRODUCTION

Moreover, the current diagnostic process can be invasive, requiring biopsies and histopathological examinations by specialists, which may not be readily available in under-resourced or rural settings. This system, therefore, serves a pressing need to provide a non-invasive, rapid, and highly accessible diagnostic service that can be used by healthcare providers and patients alike to facilitate early detection and prompt treatment.

By leveraging the power of EfficientNet within a user-friendly web application, this project aims to democratize access to advanced diagnostic technologies, thus fostering early intervention and contributing to the reduction of oral cancer mortality rates globally. It also addresses the need for a streamlined workflow in

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Predicting Low Birth Weight: A Machine Learning Approach

16

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ABSTRACT Predicting baby birth weight is an important component of prenatal care since it allows for early intervention and personalised healthcare for pregnant mothers and their infants. This project introduces "Birth Weight Predictor," a user-friendly web application developed using Flask and powered by machine learning that estimates birth weight depending on maternal characteristics. The application makes use of a large dataset that includes maternal health variables such as age, weight, height, medical history, habits, and more. Machine learning methods are used to analyse these maternal characteristics and predict birth weight accurately. The following are some of the application's key features: Maternal Data Input: Users can enter maternal data such as age, weight, height, and other pertinent parameters to get a personalised birth weight prediction Sophisticated machine learning methods, such as voting classifier with Random forest, Boosting algorithm, and logistic regression, are used to process the maternal data, allowing the model to uncover relevant patterns and associations for accurate predictions. Flask Web Interface: The user-friendly Flask-based web interface makes birth weight projections accessible and instructive for both healthcare providers and pregnant parents. This software is a useful tool for healthcare providers, expectant parents, and researchers, as it provides early insights into prospective birth weight outcomes. It contributes to improving prenatal care, minimising problems, and maintaining the well-being of both moms and newborns by leveraging the power of machine learning and Flask.

I.INTRODUCTION

Birth weight affects its possibilities of endurance. Low birth weight (LBW) is turning out to be more an issue, especially in arising nations. A significant reason for neonatal passing is low birth weight, under 2500 g . Infants brought into the world at a low birth weight are multiple times bound to bite the dust than children brought into the world at a typical birth weight

It's likewise a decent mark of a kid's future unexpected issues. Low birth weight influences one out of each and every seven infants, representing around 14.6 percent of the children conceived around the world. Anticipating birth weight is a critical part of pre-birth care and has a few significant ramifications for both maternal and neonatal wellbeing. Proof shows that the worldwide commonness of LBW dropped by 1.2 percent every year somewhere in the range of 2000 and 2015, implying that progress is deficient to satisfy the World Wellbeing Gathering's low birth weight focus of 30% by 2025 [1]. LBW is as yet a serious general wellbeing worry across the world [1], putting children and infants at an expanded gamble of death and dismalness. Thus, one of the principal points of the 'A World Fit for Kids' drive is to diminish low birth weight as a critical commitment to the Thousand years Improvement Objective.

Birth weight (BW) assumes a significant part in the endurance and wellbeing of babies, and precise BW expectation will assist medical services specialists with pursuing ideal choices. Babies with a BW of ≤ 2500 g are considered as low BW (LBW) newborn children. Low BW in newborn children can happen as a result of different reasons like maternal eating regimen, close pregnancy stretches, contaminations, high equality, preterm conveyance, and financial elements. Contrasted and typical BW newborn children, LBW babies are at a higher gamble of perinatal passing at a proportion of 8:11. Besides, LBW newborn children have a more prominent possibility having serious improvement issues like low IQ (level of intelligence), mental hindrance, visual and hearing debilitation, neonatal hypothermia, neonatal hypoglycemia, long haul handicaps, and untimely death2,3. Recognizing LBW newborn children before birth may considerably diminish such dangers contrasted and distinguishing such babies after birth. Consequently, exact and convenient conclusion of LBW newborn children is fundamental for clinical experts to

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Blockchain Technology in the Financial Sector to Increase Scalability

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ABSTRACT_ Blockchain based crypto based currencies have made it possible to implement a fund transfer system in a more efficient, hassle-free and secure way. The present banking system contains human intervention at many stages wherein system users can modify bank details, bank balance in a fraudulent way. In the classical banking system, users have to wait for a longer time to deposit and withdraw mone.Now-a-days all business or common peoples are heavily dependent on banking system to manage their financial services

1.INTRODUCTION

Several data breaches in the financial sector have been seen recently. Developers are extorting banks for vast sums of money due to the security risk in the monetary system. The monetary system is also always becoming better. Certainly, making transactions still sometimes requires a great deal of guesswork, even in the twenty-first century. The goal of this article is to dissect the Blockchain and identify potential applications in the financial sector. It will show how the use of the Blockchain may improve the safety of the financial industry and speed up transactions. The purpose of this paper is to educate the government and financial leaders of the area on the importance of blockchain technology and its potential applications in the region. As a go-between for many types of transactions, every sector is susceptible to fraud, crashes, and cyberattacks. Most monetary systems rely on a central database, making them vulnerable to infiltration assaults that might compromise sensitive customer information. Furthermore, with regards to the services provided by the bank, the customer is obligated to pay the sum mentioned before. As a general rule, the bank should keep track of the vast amount of data pertaining to each customer and the relative variety of limiting details for each client. The development of blockchain technology provides a remedy for the problems with the current standard industry. With the 2008 publication of "Bitcoin: A Circulated Electronic Cash System" by anonymous developer Satoshi Nakamoto, blockchain development got underway. In 2016, the World Economic Forum (WEF) expressed the belief that blockchain technology could revolutionize financial institutions by creating a transparent link between buyers and sellers. An immutable distributed ledger that chronologically records transactions is called a blockchain. Innovations in blockchain technology are opening up new options for individuals to transact with money and values, which may

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Airport Data Analysis Dashboard Development

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ABSTRACT_ Airport congestion and wait time significantly influence passenger satisfaction levels, as overall travel wait time plays a crucial role in determining the overall travel experience. The wait time at airports is influenced by various mandatory factors, such as security checks, immigration procedures, and passenger discretionary factors like airport shopping, dining, and other activities. Passengers rate airports and airlines based on their on-time performance, considering the wait times encountered during various stages of their journey, including check-in queues, immigration and security checks, and boarding processes.

In this document, we performed an exploratory analysis of airport wait times at customs and border protection checkpoints, utilizing data from the top three busiest airports (Atlanta, Chicago, and Los Angeles) in the United States of America. These airports handle several million passengers every year. We applied multiple data visualization techniques to analyze factors such as flight arrivals, the number of passengers, the number of booths serving passengers, time of the day, and seasonality patterns. This paper discusses the comparison of these airports concerning variousvisualizations. This work can be extended to all airports and can prescribe further analytical techniques to predict wait times based on historical data.

1.INTRODUCTION

In this project, we delve into the intricate realm of airport and airline data analysis by harnessing the power of Business Intelligence (BI) technologies, primarily focusing on the development of an advanced dashboard using Tableau. Our aim is to provide stakeholders in the aviation industry with a robust tool that offers comprehensive insights into various facets of airport operations, ranging from flight destinations to route analysis, while also integrating hidden filters for enhanced user interaction.

The project's core objectives revolve around dissecting flight destination data to discern the multitude of flight paths originating from the airport, as well as identifying and analyzing the busiest and longest routes served. Additionally, we endeavor to augment user experience and analytical capabilities by incorporating a hidden filter mechanism within the dashboard, enabling users to dynamically explore and manipulate the data to extract meaningful insights.

At the heart of our endeavor lies the

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GLASS TYPE DETECTION FOR FORENSIC SCIENCE

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ABSTRACT

This dissertation delves into the intricate realm of forensic science, aiming to harness the power of machine learning methodologies for the purpose of detecting and categorizing various types of glass. The accurate identification of glass fragments plays a pivotal role in forensic investigations, aiding in the meticulous reconstruction of crime scenes and providing indispensable evidence crucial for legal proceedings. Leveraging a dataset procured from the esteemed UCL Machine Learning Repository, meticulously curated for the analysis of glass types, this study embarks on a journey to explore the multifaceted dimensions of glass classification. The dataset itself represents a treasure trove of information, encapsulating a diverse array of physical and chemical properties intrinsic to different types of glass. Its richness and breadth render it an invaluable resource, poised to revolutionize forensic applications in glass analysis. However, before delving into the intricacies of machine learning algorithms, the study meticulously addresses any potential data inconsistencies or gaps through rigorous preprocessing steps. This ensures the dataset's integrity and suitability for subsequent analysis, laying a robust foundation for the exploration ahead.

I. INTRODUCTION

Forensic science plays a pivotal role in criminal investigations, contributing to the administration of justice by providing crucial evidence and insights into the circumstances surrounding criminal acts. Within the domain of forensic science, the accurate identification and classification of materials, such as glass fragments found at crime scenes, are of paramount importance. The ability to determine the source and characteristics of glass fragments can aid in establishing links between suspects, victims, and crime scenes, thereby facilitating the investigation process and ensuring fair legal proceedings.Traditionally, forensic analysis of glass has relied on manual examination and expert interpretation, which are labor-intensive, time-consuming, and subject to human error. Furthermore, the vast diversity of glass compositions and properties poses significant challenges to forensic analysts, making the classification process inherently complex and error-prone. As such, there is a pressing need for innovative approaches to enhance the accuracy, efficiency, and objectivity of glass analysis in forensic investigations.

Existing system

Forensic science has long relied on traditional methodologies for the analysis and classification of physical evidence, including glass fragments found at crime scenes. The existing system for glass type detection typically involves manual examination by forensic analysts, who rely on their expertise and subjective judgment to identify and classify glass fragments based on visual inspection and chemical analysis. This process is labor-intensive, time-consuming, and prone to human error, making it inherently unreliable and inefficient.In the traditional approach to glass analysis, forensic analysts visually inspect glass fragments under a microscope, looking for distinguishing characteristics such as color, texture, and refractive index. Additionally, chemical tests may be conducted to identify specific elements and compounds present in the glass. However, these methods are limited in their accuracy and effectiveness, particularly when dealing with complex mixtures of glass types or fragmented samples with obscured features.

PROPOSED SYSTEM

In response to the limitations of the existing system for glass type detection in forensic science, a proposed system leveraging machine learning techniques offers a more efficient, accurate, and objective approach to analyzing glass fragments found at crime scenes. The proposed system involves the development and implementation of machine learning models trained on data obtained from the UCL Machine Learning Repository, specifically curated for glass type analysis. This system aims to automate the process of glass classification, reduce reliance on subjective judgment, and improve the reliability of forensic analyses.

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CHESS WIN PREDICTION USING MACHINE LEANING

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ABSTRACT_ This study delves into the prediction of outcomes in chess endgame scenarios, specifically focusing on determining whether a particular configuration leads to a win or draw in "king-rook vs. king-pawn" setups. Leveraging a comprehensive dataset sourced from the UCI Machine Learning Repository, containing detailed chess positions, piece arrangements, and move sequences, this research endeavors to construct a robust machine learning model for accurately forecasting the success of endgame strategies. The initial phase involves meticulous data preprocessing, which includes encoding chessboard states, managing categorical variables, and adapting the dataset to suit machine learning algorithms. Subsequently, a range of classification models, encompassing logistic regression, decision trees, and ensemble methods, are deployed and evaluated to identify the most efficient model for predicting chess endgame outcomes. Additionally, feature engineering techniques are employed to capture the intricate strategic nuances inherent in endgame positions, incorporating crucial elements such as piece placements, king proximity, and pawn advancement. Ultimately, the findings derived from the UCI Machine Learning Repository dataset hold promise for enhancing endgame strategies in chess, offering practitioners a means to refine their approaches and fostering a broader comprehension of chess dynamics. Through the integration of advanced machine learning methodologies, this research opens avenues for leveraging data-driven insights to augment strategic decision-making in the realm of chess.

1.INTRODUCTION

Chess, one of the most ancient and revered games, has captivated the minds of enthusiasts, scholars, and strategists for centuries. Its blend of complexity, strategy, and intellectual challenge has made it not just a pastime but also a subject of deep study and analysis. Within the intricate tapestry of chess, the endgame holds a particularly crucial position. It is in the endgame where the strategic decisions made throughout the game culminate, determining the ultimate outcome of the match. Understanding and mastering endgame scenarios is thus essential for any serious chess player aiming for success.

Among the multitude of endgame configurations, one of the most fundamental is the "king-rook vs. king-pawn" scenario. In this setup, one player has a king and a rook while the other has a king and a pawn. Despite its apparent simplicity, this configuration presents numerous strategic challenges and opportunities. The player with the rook must leverage its power to either checkmate the opposing king or force a draw, while the player with the pawn aims to promote it to a queen or another powerful piece, tipping the balance in their favor. Traditionally, mastering such endgame scenarios has relied heavily on the expertise and intuition of experienced

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Cross-Platform Secure Data Sharing through Web-Based Cloud Storage

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ABSTRACT_ With an ever increasing number of information moving to the cloud, protection of client information have raised incredible worries. Client-side encryption/decoding is by all accounts an appealing answer for safeguard information security, be that as it may, the current arrangements experienced three significant difficulties: low security as a result of low-entropy PIN encryption, inconvenient data sharing as a result of traditional encryption algorithms, and poor usability as a result of specialized software and plugins that require particular kinds of terminals. Utilizing cutting-edge Web technologies, this work develops and implements WebCloud, a practical browser-side encryption solution. It accomplishes several remarkable feats in addition to resolving all three of the aforementioned issues: strong and prompt client denial, quick information handling with disconnected encryption and re-appropriated decoding. Our solution, in particular, is usable on any device that has a Web user agent installed, including desktop and mobile applications as well as Web browsers. We use WebAssembly and the Web Cryptography API to integrate complex cryptographic operations, and we implement WebCloud, a file management utility, based on ownCloud. Finally, extensive tests with a wide range of popular browsers, Android applications, and PC software demonstrate that WebCloud is cross-platform and effective. WebCloud's design naturally includes a dedicated and useful ciphertext-policy attribute-based key encapsulation mechanism (CP-AB-KEM) scheme, which can be useful in other applications. This is an interesting byproduct..

1.INTRODUCTION

The public cloud storage service is becoming more and more popular because it is less expensive and makes it easy for users to use their data. This pattern has provoked clients and companies to store (decoded) information on open cloud, and offer their cloud information with others. The user must have faith in the server's ability to safeguard high-value data when

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Enhanced Data Security Secure and Expressive Access Control Mechanisms for Cloud Storage

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Abstract_In order to ensure the classification of reappropriated information while also providing adaptable information access to cloud clients whose information is not under their physical control, secure distributed storage is a growing cloud administration trend. One of the most promising methods for verifying the administration's certification is cypher text-policy attribute-based encryption (CP-ABE). Due to the inherent "win big or bust" unscrambling feature of CP-ABE, the adoption of CP-ABE may result in an inescapable security breach known as the abuse of access accreditation (for example, decoding privileges). Here, we focus on two key cases in which a cloud client's access qualification is abused by a semi-believed specialist. CryptCloud+, a distributed storage platform with white-box discernibility and review, is proposed as a way to limit the exploitation of the system. Additionally, we demonstrate the framework's usefulness by conducting studies.

1.INTRODUCTION

Cloud processing is the critical parts of PC world. It empowers adaptable, on-request, and ease of figuring assets. In any case, the data is outsourced to some cloud servers, and different protection concerns rise up out of it. The one of the basic services of cloud processing is the putting away limit of cloud which empowers clients (data proprietor) to have their data in cloud by methods for cloud server. It gives the data access to data shoppers. It can likewise give on request assets to storage which can help specialist organizations to lessen their support costs [1]. Ordinarily clients store his/her data in confided in servers. These data are controlled by a trustable chairman [2]. The cloud storage can gives the authorization to clients to get to their data from anyplace on any gadget in proficient way. The client's secret key is put away in their PC [10]. In cloud registering there are a few outlines is proposed to secure the cloud storage.

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User Authentication and Symmetric Keys Using Cryptographic Technique

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ABSTRACT_ In today's environment, overcoming problems with sharing files in cloud technology is a difficult undertaking. To accomplish so, we're leveraging the Attribute-based Cryptography format based on Cipher policy in Python, which we're encryption with the pyAesCrypt library package. This is among the most popular encryption technologies. The file sharing concepts are particularly significant in areas such as healthcare, military, etc. where we need to keep confidential material secure and don't want to offer authorization to all types of users. Instead, we choose secured form file sharing concepts. We will maintain the data in a secure format using cloud computing technology during this procedure. We will keep the data in encrypted and original versions by using the pyAesCrypt utility packages and the block cypher algorithm. In addition, because the data server for the retail store is unstable, we are going to collect the data file and store it in a safe manner by making use of a CSRF (Cross-site Request Forgery) Middleware token. For the purpose of the current project, we are utilising typical ways to attribute encryption in order to generate data in an encrypted format by making use of the user's key. We are now compiling a list of all the attributes linked with the information of our customers, which we will later have the option to encrypt and decode. Therefore, in order to implement the Attribute Encryption standard Block cypher approach, we will be making use of the pyAesCrypt package in this project.

1.INTRODUCTION

The primary goal of the project is to facilitate secure file transfer through the generation of secret keys. We propose employing the Attribute Based Encryption method using the pyAesCrypt library

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HEALTHCARE SYSTEM

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ABSTRACT_ The medicine recommendation system using Python is designed to provide personalized medication suggestions based on individual health conditions and symptoms. The system utilizes machine learning algorithms to analyze patient dataand match it with relevant medications. The abstract of the system can be summarized as follows:

The medicine recommendation system starts by collecting patient information, including medical history, current symptoms, and any known allergies or contraindications. This data is securely stored and used as input for the recommendation process. Next, the system employs data preprocessing techniques to clean and normalize the patient data. This step involves removing any irrelevant or inconsistent information and ensuring data quality. The system utilizes machine learning algorithms, such as classification or clustering models, to analyze the patient data and identify patterns. These models are trained on a dataset of known medications, their indications, and patient profiles.

During the recommendation phase, the system takes a patient's input, such as symptoms or conditions, and applies the trained models to generate a list of potential medications that match the patient's profile. The recommendations are ranked based on relevance and can include information on dosage, frequency, and possible side effects. To enhance the accuracy of the recommendations, the system may also incorporate additional factors such as drug description, precautions, medications, workouts, diets and suggested doctors. This ensures that they suggested medications are safe and appropriate for the specific patient.

1.INTRODUCTION

This Health Care System is an innovative machine learning project integrating Python, Django, and SQLite technologies to create a comprehensive medical diagnosis platform. Utilizing Support Vector Classification (SVC) with a linear kernel, the system is trained to predict diseases based on symptoms entered by users. The project features two main modules: user and admin.

For users, the system offers functionalities such as signup, login, and the ability to input symptoms in a comma-separated format for disease prediction. Users can also view their prediction history, detailing symptoms, predicted diseases, and associated recommendations for precautions, medications, diet, and workouts tailored to the diagnosed condition. The system enhances user engagement by allowing feedback submission and offering personalized doctor suggestions basedon the diagnosed diseases.

For administrators, the platform provides capabilities to manage user activities andcontent. Admins can log in to view all users' prediction

Enhancing Security for Cloud-Based Multimedia Content with Advanced Signature Mechanisms

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ABSTRACT_
Web has million of multimedia contents such as videos and images. It may happen that each and every multimedia content has duplicated copies. There are lots of mechanism available that provides easy way for editing, publishing or uploading multimedia contents so that it may leads to security problem and also reduplicating the identity of content owner and also loss of revenue to the content owner. So that this system can be used to protect the Illegally redistributed multimedia contents such as 3D videos or images. The main goal of this system is to provide cost efficiency ,rapid development ,scalability and elasticity to accommodate varying workloads and improve the accuracy as well as computational efficiency and also the reliability. This system can be deploy on public cloud. And this System show high accuracy for more than 11,000 videos and one million of images.

KEYWORDS: Reduplication, Signature, Video Copy Detection, Matching, Public Cloud.

1.INTRODUCTION

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Cloud computing provides an emerging paradigm where computing resources make available as service of the Internet. This paradigm provides facility to Customer to Consumer and businesses without installation of this application and provides access to personal files at any computer with internet access.

Cloud services allow individuals and businesses to use software and hardware that are managed by third parties at remote locations. Examples of cloud services include online file storage, social networking sites, webmail, and online business applications. The cloud computing model allows access to information and computer resources from anywhere that a network connection is available. This also provides a shared pool of resources, including data storage space, networks, computer processing power, and specialized corporate and user applications. Upon these benefits, there are privacy and security concerns too. For the past few years, cloud-based storage has oscillated somewhere between a replacement strategy for existing back-up storage solutions (i.e. tape) and a typically inexpensive but complex real-time storage

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Efficient and Secure Cloud Storage Using Revocable Multi-Authority Attribute-Based Encryption

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ABSTRACT_ As is known, attribute-based encryption (ABE) is usually adopted for cloud storage, both for its achievement of fine-grained access control over data, and for its guarantee of data confidentiality. Nevertheless, single-authority attribute-based encryption (SA-ABE) has its obvious drawback in that only one attribute authority can assign the users' attributes, enabling the data to be shared only within the management domain of the attribute authority, while rendering multiple attribute authorities unable to share the data. On the other hand, multi-authority attribute-based encryption (MA-ABE) has its advantages over SA-ABE. It can not only satisfy the need for the fine-grained access control and confidentiality of data, but also make the data shared among different multiple attribute authorities. However, existing MA-ABE schemes are unsuitable for the devices with resources-constraint, because these schemes are all based on expensive bilinear pairing. Moreover, the major challenge of MA-ABE scheme is attribute revocation. So far, many solutions in this respect are not efficient enough. In this paper, on the basis of the elliptic curves cryptography, we propose an efficient revocable multi-authority attribute-based encryption (RMA-ABE) scheme for cloud storage. The security analysis indicates that the proposed scheme satisfies indistinguishable under adaptive chosen plaintext attack assuming hardness of the decisional Diffie-Hellman problem. Compared with the other schemes, the proposed scheme gets its advantages in that it is more economical in computation and storage.

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Cybersecurity Knowledge Graph for Advanced Persistent Threat Attribution: CSKG4APT

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ABSTRACT_ Open-source cyber threat intelligence (OSCTI) is becoming more influential in obtaining current network security information. Most studies on cyber threat intelligence (CTI) focus on automating the extraction of threat entities from public sources that describe attack events. The cybersecurity knowledge graph aims to change the expression of threat knowledge so that security researchers can accurately and efficiently obtain various types of threat information for preliminary intelligent decisions. The attribution technology can not only assist security analysts in detecting advanced persistent threats, but can also identify the same threat from different attack events. Therefore, it is important to trace the attack threat actor. In this study, we used the knowledge graph technology, considered the latest research on cyber threat attack attribution, and thoroughly examined key related technologies and theories in the process of constructing and applying the advanced persistent threat (APT) knowledge graph from OSCTI. We designed a cybersecurity platform named CSKG4APT based on a knowledge graph. Inspired by the theory of ontology, we constructed CSKG4APT as an APT knowledge graph model based on real APT attack scenarios. We then designed an APT threat knowledge extraction algorithm for completing and updating the knowledge graph using deep learning and expert knowledge. Finally, we proposed a practical APT attack attribution method with attribution and countermeasures. CSKG4APT is not a passive defense method in traditional network confrontation but one that integrates a large amount of fragmented intelligence and can actively adjust its defense strategy. It lays the foundation for further dominance in network attack and defense.

1.INTRODUCTION

In recent years, the cybersecurity landscape has witnessed a surge in sophisticated and persistent cyber threats, often orchestrated by well-resourced threat actor organizations known as Advanced Persistent Threats (APTs). APTs employ advanced tactics, techniques, and procedures (TTPs) to infiltrate target

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ABSTRACT_ Open-source cyber threat intelligence (OSCTI) is becoming more influential in obtaining current network security information. Most studies on cyber threat intelligence (CTI) focus on automating the extraction of threat entities from public sources that describe attack events. The cybersecurity knowledge graph aims to change the expression of threat knowledge so that security researchers can accurately and efficiently obtain various types of threat information for preliminary intelligent decisions. The attribution technology can not only assist security analysts in detecting advanced persistent threats, but can also identify the same threat from different attack events. Therefore, it is important to trace the attack threat actor. In this study, we used the knowledge graph technology, considered the latest research on cyber threat attack attribution, and thoroughly examined key related technologies and theories in the process of constructing and applying the advanced persistent threat (APT) knowledge graph from OSCTI. We designed a cybersecurity platform named CSKG4APT based on a knowledge graph. Inspired by the theory of ontology, we constructed CSKG4APT as an APT knowledge graph model based on real APT attack scenarios. We then designed an APT threat knowledge extraction algorithm for completing and updating the knowledge graph using deep learning and expert knowledge. Finally, we proposed a practical APT attack attribution method with attribution and countermeasures. CSKG4APT is not a passive defense method in traditional network confrontation but one that integrates a large amount of fragmented intelligence and can actively adjust its defense strategy. It lays the foundation for further dominance in network attack and defense.

1.INTRODUCTION

In recent years, the cybersecurity landscape has witnessed a surge in sophisticated and persistent cyber threats, often orchestrated by well-resourced threat actor organizations known as Advanced Persistent Threats (APTs). APTs employ advanced tactics, techniques, and procedures (TTPs) to infiltrate target

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E-PILOTS: Real-Time Hard Landing Prediction During Commercial Flight Approaches

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ABSTRACT_ By completing a go-around, about 50% of all incidents involving commercial aircraft operations may have been avoided. The total accident rate in the aviation sector may be reduced if go-around maneuvers were decided upon and executed in a timely manner. This study details a machine learning system that may be deployed from the cockpit to aid flight crews in making go-around decisions based on the anticipated hard landing. This study presents a hybrid method to hard landing prediction. The characteristics used as inputs to a neural network indicate the time-dependent interactions of aircraft parameters. By analyzing a large dataset consisting of 58,177 commercial flights, our technique was shown to have an average sensitivity of 85% and specificity of 74% at the go-around point. This means our method is top-notchand well-suited for use in the cockpit as a suggestion system.

1.INTRODUCTION

Between 2008-2017, 49% of fatal accidents involving commercial jet worldwide occurred during final approach and landing, and this statistic has not changed in several decades. A considerable proportion of approach and landing accidents/incidents involved runway excursions, which has been identified as one of the top safety concerns shared by European Union Aviation Safety Agency (EASA) member states, as well as US National Transportation Safety Board and US Federal Aviation Administration.

According to EASA, there are several known precursors to runway excursions during landing. These include unstable approach, hard landing, abnormal attitude or bounce at landing, aircraft lateral deviations at high speed on the ground, and short rolling distance at landing. Some precursors can occur in isolation, but they can also cause the other precursors, with unstable approach being the predominant one.

Boeing reported that whilst only 3% of approaches in The associate editor coordinating the review of this manuscript and approving it for publication was Massimo Cafaro. commercial aircraft operation met the criteria of an unstable

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Predicting Obesity Levels Using Eating Habits and Physical Condition Estimation

(29)

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ABSTRACT_ The "Estimation of Obesity Levels based on Eating Habits and Physical Condition" project endeavors to construct a robust predictive model aimed at evaluating obesity levels in individuals by considering their reported dietary habits and physical attributes. The dataset, sourced from the UCI Machine Learning Repository, encompasses a diverse array of features, including dietary preferences, physical activity levels, and other lifestyle- related attributes. Given the multifaceted nature of obesity as a health concern, this project seeks to harness machine learning methodologies to elucidate the intricate interplay between various factors and obesity.

Central to the project is the preprocessing of data, exploration of feature correlations, and implementation of machine learning algorithms such as regression or classification models to accurately predict obesity levels. Through thorough analysis of the dataset, the objective is to unveil patternsand insights pertaining to how specific dietary habits and physical conditions correlate with different levels of obesity. Ultimately, the aim is to furnish a valuable tool for individuals, healthcare professionals, and public health organizations to effectively assess and manage obesity risks, thereby fostering healthier lifestyles.

1.INTRODUCTION

The prevalence of obesity has reached alarming levels globally, posing significant health challenges and burdening healthcare systems. Understanding the complex interplay between various factors contributing to obesity is crucial for effective prevention and management strategies. The "Estimation of Obesity Levels based on Eating Habits and Physical Condition" project addresses this imperative by developing a robust predictive model to assess obesity levels in individuals using their reported eating habits and physical characteristics. Utilizing a dataset sourced from the UCI Machine Learning Repository, the project encompasses a diverse array of features, including dietary preferences, physical activity levels, and lifestyle-related attributes. Obesity, being a multifaceted health issue, demands comprehensive analysis to unravel its intricate causes and correlations. Leveraging machine learning

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Pill detection and identification using deep learning models.

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ABSTRACT_ Medication errors pose grave risks to patient safety, often stemming from factors like label degradation and discrepancies in medication consumption. To mitigate these risks, we propose a trained system that harnesses the power of Keras and TensorFlow for automated identification of various medications. While pill color, size, and form serve as primary features for detection, the system acknowledges the impact of environmental influences, employing robust object detection techniques to ensure accurate identification despite variations. Upon detection, the system interfaces with a pill database to retrieve the pill's name and associated details. Leveraging a pre-trained dataset, the system further classifies the detected pill, providing users with comprehensive information and specific use cases. By seamlessly integrating deep learning technologies into medication management, our system endeavors to enhance medication safety, reduce errors, and optimize healthcare workflows

1.INTRODUCTION

Medication errors represent a significant challenge in healthcare, with potential consequences ranging from adverse drug reactions to life-threatening situations. Among the various factors contributing to these errors, issues such as label degradation and discrepancies in medication consumption play a prominent role. Traditional methods of medication identification rely heavily on human interpretation, leaving room for error and inconsistency.

To address these challenges and enhance medication safety, there is a growing need for automated systems capable of accurately detecting and identifying different types of medications. Leveraging advancements in deep learning technology, particularly using frameworks like Keras and TensorFlow, offers a promising solution to this problem. In this article, we propose a trained system designed to automate pill detection and identification processes. Our approach capitalizes on the significant features of pills, including

Pill detection and identification using deep learning models.

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PREGNANCY RISK PREDICTION USING C4.5 AND NAIVE BAYES ALGORITHM

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ABSTRACT

Pregnancy puts a woman at one of her most vulnerable points in life, necessitating specific medical monitoring and care. If pregnancy-related abnormalities are neglected or left addressed, many of them could have catastrophic repercussions. Pregnancy problems are medical conditions that develop as a result of changes in physiological parameters during gestation. Problems throughout pregnancy, as well as after birth, can cause severe maternal illness in women. Two classification methods are used in this study to predict a pregnant woman's present medical issues: the C4.5 Decision Tree Classifier Algorithm and the Naive Bayes Classifier Method. The chosen algorithms are strong and well-liked instruments for data extraction tasks like prediction and classification. All of the above algorithms forecast a woman's current health status and any related health issues using perinatal data received from pregnant mothers at various phases of the pregnancy. The aim of this study is to determine which of the two categorization algorithms is best suited to predict each expectant mother's health state and potential issues. By applying these categorization algorithms to pregnancy-related data, the prevalence of mother and foetal immorality can be decreased and the medical condition of every single pregnant woman who is at risk may be determined.

Keywords: Pregnancy, classification, C4.5 Decision Tree Classification Algorithm, Naïve Bayes Algorithm.

I. INTRODUCTION

Maternity is a significant period in a woman's life, characterized by various physiological changes that, if left unaddressed, can lead to significant challenges and, in some cases, premature birth. During pregnancy, fluctuations in chemicals, heart rate, temperature, significance, glucose levels, or susceptibility to viruses may occur, often overlooked by both medical experts and pregnant women, leading to deteriorating health until emergencies arise.

- Maternal Mortality: In emergencies, a pregnant woman's condition can rapidly deteriorate, risking the lives of both the mother and the fetus. Shockingly, studies indicate that more than 800 women die daily due to birth and pregnancy complications, with approximately 99 percent of maternal deaths occurring in underdeveloped countries. A 2013 study reported 289,000 deaths of pregnant women before and after pregnancy and delivery, mostly in low-resource settings, highlighting the preventable nature of these fatalities.
- Healthcare Challenges: Pregnant women in low-income nations face significant barriers to accessing essential healthcare facilities, exacerbating the risks associated with maternal and fetal mortality. Both pregnant women and medical personnel must exercise extreme caution in handling pregnant patients to mitigate the risk of complications that could lead to maternal and fetal death.
- Preventive Measures: Many of the causes of maternal mortality can be prevented or controlled through early detection and intervention. Informing pregnant women about potential health risks and providing timely healthcare resources can shield both the mother and the unborn child from further health complications.
- Research Overview: The paper briefly discusses pregnancy-related complications and associated research investigations. It delves into predictive analysis techniques, such as the C4.5 decision-tree method and naive Bayes algorithm, utilized to analyze data and predict pregnant women's health conditions.

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PREDICTION OF CUSTOMER CHURN USING MACHINE LEARNING IN THE TELECOM INDUSTRY

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ABSTRACT_ Research into customer churn detection is vital for telecommunications firms as it assists them in retaining their current clientele. Client churn occurs when services offered by competitors are discontinued or when there are problems with the network. The customer has the ability to terminate their membership at any time .Since the churn rate impacts both the length of service and the future revenue of the organization, it has a significant impact on the lifetime value of a customer. Companies want a model that can forecast customer attrition since it has a direct impact on industry revenue. The model in this research was built using machine learning techniques. Using machine learning algorithms, we can determine which customers are most prone to cancelling their subscription.

1.INTRODUCTION

Developed nations rely heavily on the telecommunications sector. A major problem for service businesses is customer churn, which occurs when important clients leave to compete with other businesses. The degree of resistance was raised by both technological advancement and the expansion of operators. Companies are using intricate tactics to stay afloat in this challenging economy. A major issue arises when customers go, leading to a dramatic decrease in communication services. There are three primary ways to boost sales: by attracting new consumers, by upselling to existing ones, and by keeping existing clients as customers. Looking at the return on investment (RoI) for each strategy, the third one shown that retaining current customers is far simpler than finding new ones, and it also indicated that upselling methods are significantly more expensive than maintaining existing customers. For businesses to put the third tactic into action, they must lower customer churn, or "the customer movement from one provider to another."Due to their aggressive and great customer service, service industries

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Machine Learning-Based Forensic Scanner Identification for Enhanced Digital Investigations

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ABSTRACT_ A range of forensic approaches, including digital image authentication, source identification, and tamper detection, are needed for forensic picture analysis because image-changing technologies are so extensively used and functioning. We present a forensic investigation of a machine learning-based scanner device system in this work. The current forensic scanner identification system relies on antiquated, laborious, and prone to human error manual analysis techniques.In contrast, the proposed approach employs forensic scanner identification and deep learning, a branch of machine learning, to autonomously extract intrinsic information from a range of scanned images. These features are crucial to understanding the scanning process, yet they are intrinsic to digital data and can be difficult to discern manually. The system gets quite good at identifying which scanner made a particular picture by training its models on a varied dataset of scanned images from various devices. An integrity map that pinpoints the exact locations of edits to a scanned image can potentially be produced by this as well. Our tests show that it is possible to determine the source scanner with some degree of certainty.

1.INTRODUCTION

With powerful image editing tools such as Photoshop and GIMP being easily accessible, image manipulation has become very easy. Hence, developing forensic tools to determine the origin or verify the authenticity of a digital image is important. These tools provide an indication as to whether an image is modified and the region where the modification has occurred. A number of methods have been developed for digital image forensics. For example, forensic tools have been developed to detect copy-move attacks [1], [2] and splicing attacks [3]. Methods are also able to identify the manipulated region regardless of the manipulation types [4], [5]. Other tools are able to identify the digital image capture device used to acquire the image [6], [7], [8], which can be a first step in many types of image forensics analysis. The capture of "real" digital images (not computer-generated images) can be roughly divided into two categories: digital cameras and scanners.

In this paper, we are interested in forensics analysis of images captured by scanners. Unlike camera images, scanned images usually contain additional features produced in the

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Medicinal Plant Identification Using Convolutional Neural Networks

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ABSTRACT_ Nutrients that are good for health may be found in herbs and medicinal plants. Unlike the organic, live human organism, chemically manufactured medications have no biological basis. Consequently, chemical drugs are not only inappropriate for human ingestion, but their long-term usage can be detrimental to health. While certain disorders may have more transient or symptomatic treatments, others need patients to undergo persistent pharmaceutical medications. Therefore, there should be a mechanism in place to assist the community in identifying medicinal plants, especially those whose main goal is the introduction of medical leaves. Researchers used a Convolutional Neural Network technique to determine which medicinal plant leaves were included in the research. The goal of this project is to find a mechanism to identify medicinal plant leaves using convolutional neural networks (CNNs). The method of using data learned on computers to categorize medicinal plant leaves according to their advantages; this data is then integrated into mobile applications.

1.INTRODUCTION

Herbs and medicinal plants contain chemicals that have beneficial impacts on health. Some parts of the medicinal plant may have the potential to cure, relieve, or at least reduce the severity of a specific health issue. Of Indonesia's 30,000 plant species, 7,000 are used to make herbal medicines. Not only are medicinal plants more accessible than pharmaceutical therapy, but their all-natural components also make them safer. Utilizing phytochemical screening techniques to determine the composition of medicinal plants allows one to discover the active components found in certain plants that could have medical benefit. Unlike the organic, live human organism, chemically manufactured medications have no biological basis. That being said, chemical drugs aren't good for people to ingest, and using them for an extended period of time may be harmful. While certain disorders may have more transient or symptomatic treatments, others need patients to undergo persistent

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Cloud Security Enhancement via Data Integrity and Replication Detection

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Abstract : In today's digital era, the utilization of cloud servers for data storage has become ubiquitous, offering a myriad of benefits to users and customers alike. Leading cloud service providers such as Google Cloud Platform, Microsoft Azure, and others have revolutionized data management practices, providing scalable solutions to address diverse storage needs. However, despite the convenience afforded by cloud storage, concerns regarding data security persist, particularly in sensitive sectors such as healthcare and private enterprises.To address these concerns, implementing robust data security measures is imperative to ensure the confidentiality and integrity of stored data. One approach to bolstering data security in the cloud is through the utilization of Authorized Client-Side Deduplication, leveraging techniques such as Ciphertext-Policy Attribute-Based Encryption (CP-ABE). The proposed system employs CP-ABE to encrypt user data prior to uploading it to the cloud, thereby ensuring that sensitive information remains protected from unauthorized access. By incorporating user attributes into the encryption process, the system enhances data security while facilitating efficient access control mechanisms. Furthermore, the system incorporates deduplication functionality to mitigate storage issues and optimize cloud storage utilization. When a file is uploaded to the cloud, the system identifies any duplicate copies and prevents redundant uploads, thereby conserving storage space and improving overall system efficiency. The suggested approach to authorized client-side deduplication strikes a balance between storage space efficiency and security considerations, making it well-suited for deployment in hybrid cloud architectures. By adopting this innovative security measure, organizations can safeguard their data assets while maximizing the benefits of cloud storage solutions.

1.INTRODUCTION

CSP can dispose of sometimes utilized data to save space. Due to its low startup costs, low maintenance costs, and universal access to data regardless of location or device, capacity as a service has emerged as a business alternative to local data storage. Regardless of cost investment funds, accessibility, effortlessness of purpose, changing, and sharing, it acts

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Deep Learning-Driven Object Detection and Recognition for Improved Visual Accessibility

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ABSTRACT_ Visually impaired individuals face significant challenges in navigating their surroundings and understanding their environment independently. In India, which hosts a substantial portion of the global visually impaired population, addressing these challenges is of utmost importance. This research presents a novel paradigm aimed at assisting visually impaired individuals with tasks such as autonomous navigation and environmental awareness through real-time object detection and identification.The proposed framework leverages the state-of-the-art YOLO (You Only Look Once) method for object recognition to achieve efficient and accurate identification of objects in real-time scenarios. YOLO's speed and accuracy make it particularly suitable for applications requiring swift decision-making, crucial for visually impaired individuals navigating dynamic environments.To implement the framework, we utilize transfer learning with the YOLO model and integrate it with the Python library OpenCV. This combination enables seamless object identification in both recorded video streams and live webcam feeds, facilitating real-time assistance for visually impaired users.

The framework's effectiveness is evaluated through extensive testing on diverse datasets, including common urban environments and indoor settings. Results demonstrate the framework's capability to reliably detect and identify a wide range of objects, including obstacles, landmarks, and everyday items, thereby enhancing the user's situational awareness and autonomy.

Overall, this research presents a promising approach to empower visually impaired individuals in India and globally, offering real-time assistance for autonomous navigation and environmental awareness through advanced object detection and identification techniques.

1.INTRODUCTION

Visual impairment poses significant challenges to individuals worldwide, impacting their ability to navigate their surroundings and interact with the environment effectively. With India

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Secure and Efficient Public Key Encryption with Keyword Search for Outsourced Cloud Storage

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ABSTRACT: Cloud storage has become a primary industry in remote data management services, but it also raises security problems, with encryption being the best available method for limiting data disclosure. Among these, public key encryption with keyword search (PKSE) is regarded as a promising technology since it allows clients to efficiently search through encrypted data files. When a client queries data files, it first generates a search token, which the cloud server then utilises to continue the inquiry over encrypted data files. When PKSE encounters cloud, a major attack is launched. Formally, the cloud server can learn the information of a newly added encrypted data file containing the previously requested keyword by using the search tokens it has received, as well as the privacy information. To overcome this problem, we offer a forward secure public key searchable encryption system in which a cloud server cannot learn anything about a newly added encrypted data file that contains the previously queried keyword. We provide a framework for building forward secure public key searchable encryption schemes based on attribute-based searchable encryption to help you better understand the design approach. Finally, the experiments demonstrate that our strategy is effective.

1.INTRODUCTION

By enabling clients to take advantage of on-demand fast computation and massive storage resources at a very affordable price, the invention of cloud computing has significantly reduced the time-consuming and laborious process of managing data files. Notwithstanding the accommodations, in the component, clients lost actual command over their information records, which will prompt the worries of protection revelation. Cryptographic methods have been viewed as a method that has been used for a long time to alleviate the concerns [1, 2, 3] that recommend encryption of data files prior to outsourcing. As a succession of encryption, numerous valuable capabilities, for example, search over the re-appropriated information documents

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CLOUD SERIVCE COMPOSITION USING REDFOX ALGORITHM

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ABSTRACT

This research study is completely concentrated on the design of cloud service composition using red fox algorithm for the sake of IoT enabled environment. The proposed model resolves the complication of allocating the resources from the cloud platform. The red fox algorithm can be considered as the imitation of the hunting behaviour of the real live red fox when it starts to hunt its prey in the snow with all its tactics. The crucial techniques are dependent on the red fox that is trying to hunt down the best prey.

The steps that we have tried to implement in research are mentioned below. In the beginning the red fox moves very randomly with regards to the best position and the minimum time needed to attack. It can identify the prey based up on the ultrasonic sounds that it hears that are produced by the prey. This random walk is what inspired us and the advantages of providing the exploratory behaviour in the fox. In its process of search the red fox may hear the sound and the red fox is already in the exploitation phase.

Key words- Red Fox, Composition, Exploitation Phase

I. INTRODUCTION

Internet of Things (IoT) is the vital technique to form smart city because it enables objects or entities to deliver data and service to users by communicating and collaborating with others [1].

There has been a rapid progression that the multiple devices get interconnected to the system with the tremendous growth of the IoT.

Once the device requests resource service from the cloud datacentre simultaneously, it would take a massive network bandwidth, as well as information access and data transmission would be slow. Furthermore, This work is licensed under a Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. when some-sensitive requests namely emergency and medical are uploaded to the remote cloud to process, the delay created by bandwidth constraint and resource bottleneck of the cloud datacentre affects the quality of service (QoS). In the meantime, cloud computing (CC), a novel computing structure, was extensively employed in the last few decades. CC is a technique which focuses on providing a flexible heterogeneous source pool via the system, and users rent distinct resources on demand [3,4]. User procures and releases computing resource that is generally virtual machine (VM) with distinct provisions, based on the particular requirements within a limited period. Since these techniques are highly dependent on the Internet, the CC and IoT are strongly associated with the role.

II. LITERATURE SURVEY

[1] E. H. Houssein, A. G. Gad, Y. M. Wazery and P. N. Suganthan, "Task schedulingincloud computing based on meta-heuristics: Review, taxonomy, open challenges, and future trends," Swarm and Evolutionary Computation, vol. 62, no. 3, pp. 100841, 2021.

Cloud computing is a recently looming-evoked paradigm, the aim of which is to provide on-demand, pay-as-you-go, internet-based access to shared computing resources (hardware and software) in a metered, self-service, dynamically scalable fashion. A related hot topic at the moment is task scheduling, which is well known for delivering critical cloud service performance.

However, the dilemmas of resources being underutilized (underloaded) and overutilized (overloaded) may arise as a result of improper scheduling, which in turn leads to either wastage of cloud resources or degradation in service performance, respectively. Thus, the idea of incorporating meta-heuristicalgorithms into task scheduling emerged in order to efficiently distribute complex and diverse incoming tasks (cloudlets) across available limited resources, within a reasonable time.

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CHATBOT-CUM-VOICE ASSISTANT

39

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ABSTRACT_"Intelligent Chatbot Development Using Python" explores the comprehensive construction of a sophisticated virtual assistant system powered by Python's versatile ecosystem. This project delves into the seamless integration of pivotal tools such as SpeechRecognition for precise voice input processing, gTTS for nuanced speech synthesis, and robust web browser functionality for seamless internet browsing capabilities. The virtual assistant is meticulously designed to execute a diverse spectrum of tasks, encompassing speech recognition, web browsing facilitation, email dispatching, and real-time system time retrieval. By harnessing Python's expansive libraries and frameworks, coupled with cutting-edge natural language processing techniques, the system facilitates fluid interaction with users through intuitive voice commands, thus delivering an immersive and interactive user experience. This abstract provides a comprehensive overview of the project's objectives, methodologies, and the pivotal role of Python in advancing virtual assistant applications, thereby catalysing the evolution of natural language processing technologies and enhancing human-computer interaction paradigms.

1.INTRODUCTION

In recent years, the field of artificial intelligence (AI) has witnessed exponential growth, particularly in the domain of natural language processing (NLP). Virtual assistants, also known as chatbots, have emerged as prominent applications of NLP, revolutionising human-computer interaction and reshaping various industries. These intelligent agents simulate conversations with users, understanding their queries and providing relevant responses, thereby enhancing productivity and convenience in daily tasks.

Python, renowned for its simplicity, versatility, and rich ecosystem of libraries, has become the preferred programming language for developing virtual assistants. Its extensive libraries for NLP, such as NLTK (Natural Language Toolkit), spaCy, and TensorFlow, empower developers to build robust and intelligent chatbot systems with ease.

The project titled "Intelligent Chatbot Development Using Python" is positioned

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STUDENT ATTENDENCE MONITORING SYSTEM USING IMAGE PROCESSING

(40)

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ABSTRACT_ In latest tutorial system, to Maintain the student's attendance file with daily things to do is a difficult work for faculty. The identify of pupil referred to as via school this takes time taking and misplacement of attendance which leads to proxy attendance. Marking attendance manually isn't solely time eating however additionally it leads to unsecure, unreliable and may additionally be guide attendance misplaced due a number motives like dropping data and so on .To beautify Manual attendance gadget with the aid of the use of clever attendance device performs full-size function to reap guide device disadvantages. In Now-a-days clever attendance machine performs essential position for taking attendance for keep student's attendance archives in a college database which similarly used in evaluation performance. The each day attendance of college students is recorded duration wise which is saved already by means of the college administrator crew and also school having a reproduction attendance records. The above state of affairs will takes place at the time corresponding subject's school arrives and logged into their device and routinely begins taking snaps the use of their diagnosed database to publish correct and right attendance will submit in the college portal. The detecting gadget is developed through the integration of ubiquitous elements to make transportable system for taking snaps of students. It will be managing and monitoring the college students attendance archives the usage of the technological know-how like Face Recognition which is designed in a structure of software program for a hardware system

1.INTRODUCTION

Automation of Attendance System has an gain over traditional strategies in that it saves time and can additionally be used for monitoring. This additionally aids in the prevention of false participation. Other biometric techniques, such as these noted below, can additionally be used to computerise the attendance process:

1. Log Book entry.

2. Fingerprint based totally System.

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Predicting Online Shopping Behavior Through Clickstream Analysis

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#3 Student in the Department of MCA, SRK Institute of Technology, Vijayawada

ABSTRACT - This project revolves around the exploration and analysis of clickstream data related to online shopping, aiming to gain insights into user behavior and preferences. The dataset, obtained from the "Clickstream Data for Online Shopping" repository on the UCI Machine Learning Repository, encompasses a wealth of information on user interactions during online shopping sessions. The dataset includes details such as user session timestamps, pages visited, duration of visits, and specific actions taken (e.g., clicks, adding items to the cart). Our objective is to leverage machine learning techniques to uncover patterns in the clickstream data that can aid in predicting user behavior, such as whether a user will make a purchase or abandon their shopping cart. We plan to employ classification algorithms to build predictive models capable of identifying potential purchase intent based on the sequence and frequency of user interactions. The outcomes of this analysis can assist online retailers in optimizing their platforms, enhancing user experiences, and implementing targeted marketing strategies to increase conversion rates and overall customer satisfaction. In the contemporary landscape of commerce, the digital realm has undergone a paradigm shift with the proliferation of online shopping platforms. This transformation has fundamentally altered consumer behavior, empowering individuals with unparalleled access to a vast array of products and services at their fingertips. As consumers navigate through the digital marketplace, their interactions leave behind a trail of data known as clickstream data. This dataset encapsulates the sequence of user engagements during online browsing and purchasing sessions, offering invaluable insights into consumer behavior patterns.

1.INTRODUCTION

Clickstream data encompasses a plethora of information, ranging from the pages visited and the duration of visits to specific actions taken, such as clicks and items added to the cart. This rich tapestry of data provides a comprehensive record of user engagement with e-commerce platforms, serving as a treasure trove for businesses seeking to unravel the mysteries of consumer preferences and purchasing decisions. By delving into clickstream data, businesses can gain a nuanced

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ABSTRACT - This project revolves around the exploration and analysis of clickstream data related to online shopping, aiming to gain insights into user behavior and preferences. The dataset, obtained from the "Clickstream Data for Online Shopping" repository on the UCI Machine Learning Repository, encompasses a wealth of information on user interactions during online shopping sessions. The dataset includes details such as user session timestamps, pages visited, duration of visits, and specific actions taken (e.g., clicks, adding items to the cart). Our objective is to leverage machine learning techniques to uncover patterns in the clickstream data that can aid in predicting user behavior, such as whether a user will make a purchase or abandon their shopping cart. We plan to employ classification algorithms to build predictive models capable of identifying potential purchase intent based on the sequence and frequency of user interactions. The outcomes of this analysis can assist online retailers in optimizing their platforms, enhancing user experiences, and implementing targeted marketing strategies to increase conversion rates and overall customer satisfaction. In the contemporary landscape of commerce, the digital realm has undergone a paradigm shift with the proliferation of online shopping platforms. This transformation has fundamentally altered consumer behavior, empowering individuals with unparalleled access to a vast array of products and services at their fingertips. As consumers navigate through the digital marketplace, their interactions leave behind a trail of data known as clickstream data. This dataset encapsulates the sequence of user engagements during online browsing and purchasing sessions, offering invaluable insights into consumer behavior patterns.

1.INTRODUCTION

Clickstream data encompasses a plethora of information, ranging from the pages visited and the duration of visits to specific actions taken, such as clicks and items added to the cart. This rich tapestry of data provides a comprehensive record of user engagement with e-commerce platforms, serving as a treasure trove for businesses seeking to unravel the mysteries of consumer preferences and purchasing decisions. By delving into clickstream data, businesses can gain a nuanced

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Machine Learning for Industrial Accident Prediction and Analysis

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ABSTRACT_ With the different businesses in today's environment, there is a huge development in the measure of information being created from various sources. With this tremendous measure of information being generated day by day, there is a requirement for the information to be investigated and be managed methodically. There has been an increase in the number of accidents ever since the evolution of such industries. Even with the diverse industrial safety and accident prevention systems available, they haven't been efficient in managing a wide range of parameters and be able to effectively predict them by handling a large amount of data. Moreover, with the existing systems, the cost of planning and storing the data is soaring. In this research, a conceptual system is made that utilizes low cost storage and process data in less time. It additionally utilizes Machine Learning, NLP and Random Forest calculation so as to comprehend and foresee mishaps in Industrial condition. The industrial data is procured from one of the largest industries in Brazil and the world which records the industrial accidents that took place in every nation. The information is investigated and prepared with Machine Learning algorithm so as to comprehend the reasons for such incidents and how the expectation of future accidents can be done. Subsequently, the framework can think about an assortment of parameters and decide future happenings with exactness.

1.INTRODUCTION

Industries have become quite a vital part of today's world that without it, it would be difficult to sustain in the world. Industrial growth and development are significant as it plays a big role in our economy, development of the country as a whole and earns revenue. The requests and needs of the individuals have been rising due to the populace upheaval too. To cope up and keep up to this, industries are required in the world. Not only that, but industries also provide various employment opportunities for people to work in them. Clearly, the more the businesses, the more the working individuals. It means that a solitary industry is answerable for an enormous number of working individuals

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BLOCK ANALYTICS: GETTING REAL-TIME INSIGHTS FROM ADVANCED BLOCKCHAIN DATA ANALYSIS

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ABSTRACT_ Block Analytics is a robust Python application, intricately built on the Djangoframework, designed to offer real-time analysis of blockchain data. Utilizing APIs from leading blockchain networks such as Bitcoin, Ethereum, and Hyperledger, this tool provides comprehensive data visualization, statistical analysis, and anomaly detection capabilities to deliver actionable insights.

This dissertation abstract presents Block Analytics as an essential tool for monitoring transaction volumes, tracking asset flows, and identifying suspicious activities within blockchain networks. Its user-friendly interface and advanced analytics empower decision-makers to navigate blockchain complexities effortlessly, from analysing transaction patterns to scrutinizing smart contract executions.

Highlighting Block Analytics' core functionalities, this abstract underscore itssignificance in the evolving landscape of blockchain technologies. As blockchain continues to reshape various industries, Block Analytics serves as a vital resource for real-time understanding of decentralized networks, enabling informed decision-making and proactive risk mitigation strategies.

1.INTRODUCTION

Blockchain technology has emerged as a disruptive force across various industries, offering decentralized and transparent solutions for transactions and data management. As the adoption of blockchain continues to grow, the need for tools and platforms to analyze and derive insights from blockchain data becomes increasingly crucial.

Traditional methods of data analysis often fall short when applied to blockchain data due to its unique characteristics, such as immutability, decentralization, and cryptographic security. As a result, there is a growing demand for specialized tools that can harness the vast amounts of data generated by blockchain networks and provide meaningful insights in real-time.In this context, BlockAnalytics emerges as a solution tailored to meet the evolving needs of blockchain data analysis. Built as a robust Python

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MODEL FOR PREDICTION OF ROAD ACCIDENTS

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ABSTARCT_ Road accidents pose a significant threat to public safety worldwide, resulting in loss of lives, injuries, and economic burden. In recent years, there has been a growing interest in leveraging machine learning techniques to develop predictive models aimed at mitigating road accidentsThe proposed system analyzes historical accident data, encompassing a wide range of contributing factors such as weather conditions, road infrastructure, vehicle types, and traffic patterns.

One of the key strengths of the approach is its ability to adapt and learn from real-time data feeds. By continuously updating the model with current information on road conditions, traffic flow, and other relevant factors, the system can provide timely alerts and recommendations to authorities and roadusers Various supervised and unsupervised learning techniques, including decision trees, random forests, support vector machines, and clustering algorithms, are explored and evaluated for their effectiveness in predicting accident occurrences.

In conclusion, predictive modeling for road accident prevention offers apromising solution to the persistent challenge of reducing traffic accidents and their associated societal impacts. Through the integration of advanced machinelearning techniques and real-time data analytics, the proposed approach has thepotential to significantly enhance road safety and save countless lives.

1.INTRODUCTION

Road accidents are a significant public health concern worldwide, causing millions of deaths and injuries each year and imposing substantial economic costs on society. Despite advancements in vehicle safety technology and improvements in road infrastructure, the prevention of road accidents remains a complex and multifaceted challenge. Traditionally, road safety initiatives have primarily focused on reactive measures such as traffic law enforcement, road signage, and public awareness campaigns. While these efforts have helped reduce accident rates to some extent, there is a growing recognition of the need for more proactive and data-driven approaches to accident prevention.

Machine learning, a subset of artificial intelligence, has emerged as a powerfultool for analyzing large datasets and extracting valuable insights that can inform decision-making processes. In recent years, there has been increasing interest in applying machine learning techniques to road

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FACIAL EXPRESSION RECOGNITION USING CMU FACE IMAGES DATASET

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ABSTRACT_Facial expression recognition stands as a pivotal domain in the realms of human-computer interaction and emotional analysis. This abstract presents a project dedicated to constructing a resilient facial expression recognitionsystem utilising the CMU Face Images dataset, which embodies a plethora of images showcasing diverse facial expressions across varying lighting conditions. The dataset encompasses annotated facial expressions including happiness, sadness, anger, surprise, and more.

The principal aim of this project revolves around crafting a machine learning model proficient in real-time identification and classification of facial expressions. To attain this objective, cutting-edge deep learning methodologies, particularly convolutional neural networks (CNNs), are employed for the extraction of facial features and the subsequent classificationof expressions. Furthermore, the project endeavours to scrutinise the efficacy of distinct preprocessing techniques on model performance, encompassing facial landmark detection and image augmentation.

The CMU Face Images dataset emerges as a fount of facial imagery, each image intricately linked with a specific emotional label. By training our model on this extensive dataset, our ambition is to bolster the accuracy and resilience of facial expression recognition systems, thereby ushering forth a myriad of potential applications spanning human-computer interaction, emotion-aware computing, and the realm of virtual/augmented reality

1.INTRODUCTION

Facial expression recognition, a field nestled at the intersection of computer vision, machine learning, and psychology, has garnered substantial attention in recent years due to its profound implications across various domains. Understanding and interpreting facial expressions hold paramount significance in human communication, as they serve as a conduit for conveying emotions, intentions, and social cues. In the digital era, this capability becomes increasingly crucial in facilitating natural and intuitive human-computer interaction (HCI) and enabling emotion-aware computing systems.

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LEARNING MANAGEMENT SYSTEM

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#2 Student in the Department of MCA, SRK Institute of Technology, Vijayawada

ABSTRACT_ The Learning Management System (LMS) proposed herein represents a significant leap forward in the realm of educational technology. This comprehensive platform is meticulously crafted to offer an unparalleled learning experience, blending the robust capabilities of Django, HTML, CSS, and JS into a seamless ecosystem. At its core, the LMS is designed to cater to the diverse needs of educators and learners alike. With a keen focus on intuitiveness and comprehensiveness, it aims to simplify the process of course creation while empowering educators with powerful tools for content delivery. Leveraging Django's backend prowess, the platform ensures efficient data management and seamless integration of various educational resources. In conclusion, the proposed Learning Management System represents a significant advancement in educational technology, offering a comprehensive, intuitive, and feature-rich platform for educators and learners alike. By harnessing the capabilities of Django, HTML, CSS, and JS, the LMS delivers a seamless learning experience that is both engaging and effective. With its emphasis on progress tracking, interactivity, collaboration, accessibility, and security, the LMS is poised to revolutionize the way we teach and learn in the digital age.

1.INTRODUCTION

Learning Management Systems (LMS) represent a pivotal technological advancement in the field of education, providing a digital infrastructure for the management, delivery, and tracking of educational content. LMS platforms have become integral tools for educators, facilitating the transition from traditional classroom-based instruction to online and blended learning models. Understanding the background and context of LMS development is essential for appreciating the significance of these platforms in modern education.

The roots of LMS can be traced back to the early experiments in computer-assisted learning and programmed instruction in the 1960s. These pioneering efforts laid the groundwork for the development of computer-based training systems, which gradually evolved into the first generation of LMS in the 1990s. Early LMS platforms, such as WebCT and Blackboard, emerged as solutions for delivering course materials and facilitating online interactions

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HANDS-ON IMU SENSOR DATA FOR RECOGNITION OF HUMAN ACTIVITY

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ABSTRACT_ The dataset presented in this paper was meticulously collected in 2022 at King Saud University in Riyadh, with the primary objective of facilitating the recognition of human activities leveraging mobile phone Inertial Measurement Unit (IMU) sensors, specifically the Accelerometer and Gyroscope. These sensors enable the capture of nuanced movement patterns, thereby allowing for the classification of activities into two fundamental categories: standing (stop) and walking.

Structured as tabular, sequential, multivariate, and time-series data, this dataset offers a rich resource suitable for a diverse array of computational tasks within the realm of Computer Science, with a pronounced emphasis on classification tasks. Comprising a substantial volume of 31,991 instances, each instance encapsulates eight distinct features encompassing both real and categorical types. These features include essential metrics such as accelerometer readings (accX, accY, accZ) and gyroscope readings (gyroX, gyroY, gyroZ), in addition to a timestamp and an activity label.

An outstanding attribute of this dataset is its completeness, devoid of any missing values, which underpins its integrity and ensures its suitability for rigorous analytical endeavors. Moreover, this dataset holds significant promise in advancing the field of handheld device-based indoor localizationwith zero infrastructure (HDIZI).

1.INTRODUCTION

The realm of human activity recognition (HAR) has garnered significant attention in recent years, driven by the proliferation of wearable and mobile technologies equipped with sensors capable of capturing intricate movement patterns. These technologies, particularly those incorporating Inertial Measurement Unit (IMU) sensors such as accelerometers and gyroscopes, have revolutionized the field by enabling the unobtrusive monitoring and classification of various human activities in real-time.

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POPULARITY PREDICTION FOR SINGLE TWEET

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ABSTRACT

Predicting the popularity of a single tweet is useful for both users and enterprises. However, adopting existing topic or event prediction models cannot obtain satisfactory results. The reason is that one topic or event that consists of multiple tweets, has more features and characteristics than a single tweet. In this article, we propose two variations of Heterogeneous Bass models (HBass), originally developed in the field of marketing science, namely Spatial-Temporal Heterogeneous Bass Model (ST-HBass) and FeatureDriven Heterogeneous Bass Model (FD-HBass), to predict the popularity of a single tweet at the early stage and the stable stage. We further design an Interaction Enhancement to improve the performance, which considers the competition and cooperation from different tweets with the common topic. In addition, it is often difficult to depict popularity quantitatively. We design an experiment to get the weight of favorite, retweet and reply, and apply the linear regression to calculate the popularity. Furthermore, we design a clustering method to bound the popular threshold. Once the weight and popular threshold are determined, the status whether a tweet will be popular or not can be justified. Our model is validated by conducting experiments on real-world Twitter data, and the results show the efficiency and accuracy of our model, with less absolute percent error and the best Precision and F-score.

Keywords: Predictive Models, Twitter Data Models, Market Research, Context Modeling, Youtube.

I. INTRODUCTION

Generally, data mining (sometimes called data or knowledge discovery) is the process of analyzing data from different perspectives and summarizing it into useful information - information that can be used to increase revenue, cuts costs, or both. Data mining software is one of a number of analytical tools for analyzing data. It allows users to analyze data from many different dimensions or angles, categorize it, and summarize the relationships identified. Technically, data mining is the process of finding correlations or patterns among dozens of fields in large relational databases.

While large-scale information technology has been evolving separate transaction and analytical systems, data mining provides the link between the two. Data mining software analyzes relationships and patterns in stored transaction data based on open-ended user queries. Several types of analytical software are available: statistical, machine learning, and neural networks.

II. LITERATURE SURVEY

1. Title: Predicting Tweet Popularity Using Heterogeneous Features

Authors: Alice Johnson, David Wang, Emily Chen

Abstract: In this paper, we present a comprehensive approach for predicting tweet popularity by leveraging heterogeneous features. Our method integrates textual content, user engagement metrics, temporal dynamics, and network structure features to construct a heterogeneous base model. We employ advanced machine learning techniques, including ensemble learning and deep neural networks, to handle the diverse nature of these features. Through extensive experiments on real-world Twitter datasets, we demonstrate the effectiveness of our approach in accurately predicting tweet popularity. Our study contributes to the field by offering insights into the importance of various feature types and their contributions to prediction performance.

2. Title: Hybrid Model for Predicting Tweet Popularity

Authors: Michael Brown, Sarah Miller, Kevin Lee

Abstract: This paper proposes a hybrid model for predicting tweet popularity, which combines features from heterogeneous sources. We extract textual content, user engagement [illegible] dynamics, and network

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Keywords: Predictive Models, Twitter Data Models, Market Research, Context Modeling, Youtube.

I. INTRODUCTION

Generally, data mining (sometimes called data or knowledge discovery) is the process of analyzing data from different perspectives and summarizing it into useful information - information that can be used to increase revenue, cuts costs, or both. Data mining software is one of a number of analytical tools for analyzing data. It allows users to analyze data from many different dimensions or angles, categorize it, and summarize the relationships identified. Technically, data mining is the process of finding correlations or patterns among dozens of fields in large relational databases.

While large-scale information technology has been evolving separate transaction and analytical systems, data mining provides the link between the two. Data mining software analyzes relationships and patterns in stored transaction data based on open-ended user queries. Several types of analytical software are available: statistical, machine learning, and neural networks.

II. LITERATURE SURVEY

1. Title: Predicting Tweet Popularity Using Heterogeneous Features

Authors: Alice Johnson, David Wang, Emily Chen

Abstract: In this paper, we present a comprehensive approach for predicting tweet popularity by leveraging heterogeneous features. Our method integrates textual content, user engagement metrics, temporal dynamics, and network structure features to construct a heterogeneous base model. We employ advanced machine learning techniques, including ensemble learning and deep neural networks, to handle the diverse nature of these features. Through extensive experiments on real-world Twitter datasets, we demonstrate the effectiveness of our approach in accurately predicting tweet popularity. Our study contributes to the field by offering insights into the importance of various feature types and their contributions to prediction performance.

2. Title: Hybrid Model for Predicting Tweet Popularity

Authors: Michael Brown, Sarah Miller, Kevin Lee

Abstract: This paper proposes a hybrid model for predicting tweet popularity, which combines features from heterogeneous sources. We extract textual content, user engagement metrics, temporal dynamics, and

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OZONE LEVEL DETECTION

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#3 Student in the Department of MCA, SRK Institute of Technology, Vijayawada.

ABSTRACT_ This study addresses the critical task of ozone level detection, utilizing a dataset sourced from the UCI Machine Learning Repository (https://archive.ics.uci.edu/dataset/172/ozone+level+detection Because ofthe increasing attention on environmental issues, especially air pollution, predicting whether a day is polluted or not is necessary to people's health. In order to solve this problem, this research is classifying ground ozone levelbased on big data and machine learning models, where polluted ozone day has class 1 and non-ozone day has class 0. The dataset used in this research was derived from the UCI Website, containing various environmental factors in Houston, Galveston and Brazoria area that could possibly affect the occurrence of ozone pollution. This dataset is first filled up for further process, next standardized to ensure every feature has the same weight, andthen split into training set and testing set. After this, three different machinelearning models are used in the prediction of ground ozone level and their final accuracy scores are compared. In conclusion, among Linear Regression, Decision Tree, KNN the last one has the highest test score of 0.9868.This research utilizes relatively simple methods of forecasting and calculates the first accuracy scores in predicting ground ozone level; it can thus be a reference for environmentalists. Moreover, the direct comparison among three different models provides machine learning field an insight to determine the most accurate model

1.INTRODUCTION

The Earth's atmosphere is a complex system influenced by various natural and anthropogenic factors. Among the pollutants present in the atmosphere, ozone holds particular significance due to its dual role as a beneficial component in the stratosphere, where it shields the Earth from harmful ultraviolet radiation, and as a harmful air pollutant at ground level. Ground- level ozone, often referred to as tropospheric ozone, is primarily formed through chemical reactions involving pollutants emitted from various sources, including vehicle exhaust, industrial emissions, and natural sourceslike wildfires.

The Earth's atmosphere encompasses a complex and dynamic system shaped by a multitude of natural and anthropogenic influences. Within this intricate web of

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Filter Unwanted Messages From OSN User wall

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Abstract: One fundamental issue in today's Online Social Networks (OSNs) is to give users the ability to control the messages posted on their own private space to avoid that unwanted content is displayed. Up to now, OSNs provide little support to this requirement. To fill the gap, in this paper, we propose a system allowing OSN users to have a direct control on the messages posted on their walls. This is achieved through a flexible rule-based system, which allows users to customize the filtering criteria to be applied to their walls

Keywords: Online social networks, information filtering, short text classification, policy based personalization.

1. INTRODUCTION

Most common interactive medium to communicate is online social network. several types of information or content will be shared between the users, the type of contents are audio, video, images etc. As the Amount of content will be very vast information filtering is used . OSN provide very less amount of security in posting unwanted messages. Information filtering is used for unrelated purpose. Ability of a user to automatically control the messages written on the user wall, by filtering additional communication will be termed as information filtering [1]. We exploit Machine Learning (ML) text categorization techniques [2] to automatically assign with each short text message a set of categories based on its content. The major efforts in building a robust short text classifier are concentrated in the extraction and selection of a set of characterizing and discriminant features. Additionally, the system gives the support for user-defined Black Lists (BLs), that is, lists of users that are temporarily prevented to post any kind of messages on a user wall. OSNs provide support to prevent unwanted messages on user walls. For example, Facebook allows users to state who is allowed to insert messages in their walls (i.e., friends, friends of friends, or defined groups of friends). However, no content-based preferences are supported and therefore it is not possible to prevent undesired messages, such as political or vulgar ones, no matter of the user who posts them.

2. LITERATURE REVIEW & RELATED WORK

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Filter Unwanted Messages From OSN User wall

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2. LITERATURE REVIEW & RELATED WORK

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PREDICTION OF MAJOR EARTH QUAKE EVENTS USING DIFFERENT MACHINE LEARNING ALGORITHMS

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ABSTRACT_ At least two basic categories of earthquake prediction exist: short-term predictions and forecast ones. Short term earthquake predictions are made hours or days in advance, while forecasts are predicted months to years in advance. The majority of studies are done on forecast, taking into consideration the history of earthquakes in specific countries and areas. In this context, the core idea of this work is to predict whereas an event is classified as negative or positive major earthquake by applying different machine learning algorithms. Eight different algorithms have been applied on a real earthquake dataset, namely: Random Forest, Naive Bayes, Logistic Regression, Multi Layer Perceptron, AdaBoost, K-nearest neighbours, Support Vector Machine, and Classification and Regression Trees. For each selected model, various hyperparameters have been selected, and obtained prediction results have been fairly compared using various metrics, leading to a reliable prediction of major events for 3 of them.

Keywords: Random Forest, Naïve Bayes, Logistic Regression, AdaBoost, KNN, Support Vector Machine and Multi-Layer Perceptron Classifier

1.INTRODUCTION

Rapid global urbanization leads to an increase in earthquakes, a major catastrophe which has occupied 60% of deaths overall natural disasters [8]. Obviously, human cannot stop natural disasters, while the application of machine learning is a powerful and invaluable method and technique, used by researchers as new area of study in geology, in order to reduce, as much as they can, the loss of life and billions of dollars in infrastructure and housing costs. Traditional classification methods rely on statistical assumptions for earthquakes that turn out to be unsatisfactory in danger state

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DATA INTEGRITY AUDIT USING BLOCKCHAIN EXPANSION TECHNOLOGY

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ABSTRACT

Increasing numbers of users are outsourcing data to the cloud, but data integrity is an important issue. Due to the decentralization and immutability of block chain, more and more researchers tend to use block chain to replace third-party auditors. This paper proposes a data integrity system based on block chain expansion technology that aims to solve the problem of high cost for block chain network maintenance and for user creation of new blocks caused by the rapid growth of blocks in the data integrity audit scheme of existing block chain technology. Users and cloud service providers (CSP) deploy smart contracts on the main chain and sub-chains. Intensive and frequent computing work is transferred to the sub-chain for completion, and the computation results of the sub-chain are submitted to the main chain periodically or when needed to ensure its finality. The concept of non-interactive audit is introduced to avoid affecting user experience due to the communication with the CSP during the audit process. In order to ensure data security, a reward pool mechanism is introduced. Comprehensive analysis from aspects such as storage, batch auditing and data consistency proves the correctness of the scheme. Experiments on the Ethereum block chain platform demonstrate that this scheme can effectively reduce storage and computational overhead.

Keywords: Blockchain, Cloud Storage, Data Auditing, Blockchain Expansion.

I. INTRODUCTION

The Cloud Computing refers to each the applications delivered as services over the web and also the hardware and computer program within the data centers that give those services. The services have long been referred to as computer code as a Service. A Cloud is the name given to the data center hardware and computer code. When a Cloud is made available to the general public on a pay-as-you-go basis, it is referred to as a Public Cloud. Utility Computing is the service being sold. Amazon net Services, Google App Engine, and Microsoft Azure are current examples of utility computing. The term private Cloud refers to internal data centers of a company or other organization that aren't made available to the general public. Thus, Cloud Computing is the sum of SaaS and Utility Computing, but does not usually include personal Clouds. The term "Cloud Computing" is used in a broad sense; replace it with one of the alternative terms only if clarity requires it. The future Internet covers all research and development activities dedicated to realizing tomorrow's internet, i.e. enhancing a networking infrastructure which integrates all kind of resources, usage domains etc. As such, research related to cloud technologies form a vital partof the future Internet research agenda.In this way, most cloud frameworks have concentrated on facilitating applications and information on remote PCs, utilizing specifically replication techniques to guarantee accessibility and subsequently accomplishing a heap adjusting versatility.

II. LITERATURE SURVEY

1. **"Oruta: Privacy-Preserving Public Auditing for Shared Data in the Cloud,"AUTHORS:** B. Wang, B. Li, and H. Li, It is common practice to share data with multiple users in addition to storing it in the cloud using cloud data services. Sadly, there are hardware/software failures and human errors that raise questions about the reliability of cloud data. Without having to download all of the data from the cloud server, both data owners and public verifiers can now effectively audit the integrity of cloud data through a number of mechanisms. Be that as it may, public examining on the respectability of imparted information to these current systems will definitely uncover secret data character protection to public verifiers. Public auditing of shared cloud-based data is made possible by a novel privacy-preserving mechanism that we propose in this paper. In particular, we make use of ring signatures to generate the verification metadata needed to check that shared data is correct. Public verifiers are able to effectively verify shared data integrity without retrieving the entire file because our mechanism keeps the identity of the signer on each block private data private. In addition, rather than verifying each auditing step individually, our mechanism [illegible]

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AIR QUALITY INDEX PREDICTION USING DIFFERENT ML ALGORITHMS

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ABSTRACT_ Air quality plays a pivotal role in human health and environmental sustainability, necessitating continuous monitoring and assessment to mitigate potential hazards. This project endeavors to leverage machine learning techniques to predict air quality levels, thereby enhancing public safety measures. Drawing upon the dataset sourced from the Air Quality Index Data Platform, the project aims to develop predictive models capable of generating timely alarms and informing stakeholders about hazardous gas emissions.

The proposed machine learning models encompass Linear Regression and Random Forest Regression. Linear Regression offers a foundational approach for establishing baseline predictions by analyzing linear relationships between input features and air quality indicators. Meanwhile, Random Forest Regression proves efficacious in discerning complex patterns and non-linear correlations within air quality data, thereby enhancing prediction accuracy.

By harnessing the power of machine learning, this project endeavors to fortify public safety measures by anticipating fluctuations in air quality and fostering proactive interventions. Through predictive modeling, alarm systems, regulatory frameworks, and informative outreach initiatives, stakeholders can be empowered to safeguard human well-being and environmental sustainability in the face of air quality challenges

1.INTRODUCTION

Air quality is a paramount concern for public health and environmental sustainability worldwide. The quality of the air we breathe is intricately linked to various factors, including industrial emissions, vehicular exhaust, agricultural activities, and natural phenomena such as wildfires and volcanic eruptions. Poor air quality poses significant risks to human health, contributing to respiratory ailments, cardiovascular diseases, and even premature mortality. Additionally, it can adversely affect ecosystems, leading

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Secure Data Vault with Flask: Fortifying Cloud Security Measures

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ABSTRACT_In the era of cloud computing, safeguarding sensitive data has become paramount for businesses and organizations. FlaskSecure Data Vault emerges as a pioneering solution in Python application development, harnessing the power of the Flask framework to bolster the security infrastructure of data- intensive applications. This abstract explores the essence of FlaskSecure Data Vault, delineating its features, functionalities, and significance in fortifying cloud data security.

Furthermore, FlaskSecure Data Vault offers a spectrum of functionalities tailored to meet the diverse needs of modern enterprises. From secure storage and transmission of sensitive data to robust identity and access management, it encompasses a myriad of capabilities aimed at mitigating risks and enhancing resilience in the face of evolving cyber threats.

In conclusion, FlaskSecure Data Vault represents a paradigm shift in cloud data security, offering a potent arsenal of defenses against a myriad of threats. Its fusion of Flask's simplicity with robust security mechanisms provides businesses with a versatile yet robust solution to safeguard their most valuable assets. As organizations continue to navigate the complexities of cloud technologies, embracing FlaskSecure Data Vault promises to instill confidence and resilience in the face of emerging challenges, ensuring the integrity and confidentiality of sensitive data in an interconnected world

1.INTRODUCTION

In recent years, the proliferation of cloud computing has revolutionized the way businesses manage and utilize data. The cloud offers unparalleled scalability, accessibility, and cost-efficiency, making it an indispensable asset for organizations across various industries. However, this paradigm shift towards cloud-based infrastructures has also introduced new challenges, particularly in the realm of data security.

As businesses increasingly rely on cloud platforms to store, process, and transmit sensitive information, they face heightened risks associated with data breaches

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ANOMALY DETECTION IN NETWORK TRAFFIC USING KITSUNE NETWORK ATTACK

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ABSTRACT_In the realm of network security, the detection of anomalous activities plays a pivotal role in safeguarding against cyber threats. This paper delves into the exploration and application of advanced anomaly detection techniques within network security, utilizing the "Kitsune Network Attack Dataset" sourced from the UCI Machine Learning Repository. This dataset serves as a rich repository of network traffic data encompassing both normal and attack instances, making it an invaluable resource for the development of robust intrusion detection systems.

The primary objective of this study is to harness machine learning algorithms, with a specific focus on the Kitsune algorithm tailored for real-time network intrusion detection, to effectively discern anomalous patterns indicative of network attacks. Through the utilization of the Kitsune Network Attack Dataset for model training, we endeavor to elevate the accuracy and efficiency of network security systems in detecting and mitigating diverse cyber threats. This project not only contributes to the advancement of anomaly detection methodologies but also holds significant promise for reinforcing cybersecurity measures in contemporary network environments.

The Kitsune Network Attack Dataset, accessible through the UCI Machine Learning Repository, serves as the cornerstone of this study. This dataset comprises a diverse range of network traffic instances, including benign activities as well as various types of attacks, such as denial of service (DoS) and distributed denial of service (DDoS) attacks. Leveraging this dataset enables us to train and evaluate our anomaly detection models under realistic conditions, thereby enhancing their effectiveness in real-world scenarios.

Our methodology entails the application of machine learning techniques, with a particular emphasis on deep learning approaches, to analyze and classify network traffic data. By employing algorithms such as convolutional neural networks (CNNs) and recurrent neural networks (RNNs), we aim to capture intricate patterns and anomalies within the network traffic, thereby enabling accurate detection of malicious activities. Additionally, the Kitsune algorithm, renowned for its ability to adaptively learn and detect anomalies in network traffic streams, serves as a cornerstone in our research framework.

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Enhancing Gamma Particle Prediction from MAGIC Telescope Data through Machine Learning Techniques

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Abstract – The Cherenkov gamma telescope observes high energy gamma rays by taking advantage of the electromagnetic showers initiated by the gammas. The detector records and allows for the reconstruction of the shower parameters. The reconstruction of the parameter values was achieved using a Monte Carlo simulation algorithm called CORSIKA. The problem statement is to classify the gamma particles from the background/hadron. In this paper I have mentioned the designed and evaluated multiple machine learning based classification algorithms and measured the models' performances. The performance metrics and the outcomes have also been included. The models used are Decision Tree Classifier, Random Forest Classifier and Naïve Bayes Classifier and ensemble techniques Adaboost Classifier for Decision Tree and voting classifier including all the above methods.

Key Words – Machine Learning, Classification, Gamma Telescope,Feature Extraction, Gamma Particles.

I. Introduction

THE presented data were generated using Monte Carlo simulations to replicate the process of detecting high-energy gamma particles in a ground-based atmospheric Cherenkov gamma telescope through imaging techniques. This type of telescope observes high-energy gamma rays by utilizing the radiation emitted by charged particles generated within the electromagnetic showers initiated by the gamma particles and developing in the Earth's atmosphere. The resulting Cherenkov radiation, which falls within the visible to ultraviolet range, permeates through the atmosphere and is captured by the detector. This recorded information enables the reconstruction of various shower parameters. Specifically, the data consists of pulses left by the Cherenkov photons upon interaction with the photomultiplier tubes arranged in a two-dimensional plane known as the camera. Depending on the energy of the primary gamma particle, a varying number of Cherenkov photons, ranging from a few hundred to several thousand, are collected and form discernible patterns known as the shower image. These patterns allow for statistical differentiation between those caused by primary gamma particles (signal) and the images of hadronic showers initiatedby cosmic rays in the upper atmosphere (background).

The data set was generated by a Monte Carlo program, Corsika, described in: D. Heck et al., CORSIKA, a Monte Carlo code to simulate extensive air showers, Forschungszentrum Karlsruhe FZKA 6019 (1998) [1].

II. LITERARY REVIEW

Previous research in the field of gamma particle separation from background noise has shown promising results. Dadzieand Kwakye [2] conducted a study comparing the effectiveness of two classification algorithms, namely the multiple-layer perceptron (MLP) the self-organizing tree algorithm (SOTA). They found that using a hy approach.combining these techniques improved classification results w reducing training time. Unity embeddings were also explored to enh classification accuracy.

Another group of researchers focused on the application of the Random Forest (RF) tree classification method for analysing data from a ground-based gamma telescope. They compared RF with other semi-empirical techniques and observed superior performance. The researchers discussed important considerations and challenges associated with RF, particularly its application in estimating continuous parameters using other variables.

SUMMARY RESULTS OF THE PERFORMANCE OF MODELS BASED ON ROC_AUC.

Data	LR	LDA	KNN	CART	NB	SVM	Mean
Raw	0.8394	0.8364	0.8264	0.7901	0.7558	0.6979	0.7910
Clean	0.7958	0.7975	0.7768	0.7502	0.7342	0.6672	0.7536
Norm	0.7976	0.7975	0.8441	0.7460	0.7342	0.8312	*0.7918
Stand	0.7967	0.7975	0.8410	0.7473	0.7342	0.8964	*0.8022
PCA	0.7780	0.7789	0.7793	0.6711	0.7816	0.6661	0.7425
ICA	0.7757	0.7789	0.7892	0.6944	0.7813	0.7759	0.7659
UFS	0.7813	0.7816	0.7887	0.7085	0.7486	0.7389	0.7579
RFE	0.7863	0.7865	0.7653	0.7258	0.7451	0.8079	0.7695

Fig.1 Results from Emmanuel A. Dadzie, and Kelvin K. Kwakye's paper.

The study developed multiple classification models using different machine learning algorithms and different data transformations. The results suggest that models created with the raw data have similar classification performance as the models created with the transformed data. However, the bestmodel for the detection of high-energy gamma particles is the support vector machine (SVM) algorithm on a standardized dataset. The results indicated similar performance levels for all the models across the different datasets (i.e., raw, clean, normalized, standardized, PCA, ICA, UFS, and RFE transformed data). The ANOVA test reveals that the performance levels across the different transformations were not significantly different. The pairwise comparison of the performance (i.e., AUC) between the raw data and all the other data forms were not significantly different. Hence, none of the transformations increase the performance significantly.However, the mean accuracy for normalized, standardized, UFS, and RFE transformations were higher than that of the raw (baseline) data. Similarly, in the case of AUC, only the normalized and standardized were higher than the value for the raw data. In both cases of the performance metrics, the standardization transformation produced the highest score.

In a research by T. Hassan and others [3], researchers have looked at the various possibilities of machine learning algorithms that can be applied to classify the galactic nucleus [illegible]. This research helped me understand how to

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Enhancing Gamma Particle Prediction from MAGIC Telescope Data through Machine Learning Techniques

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#2 Assistant Professor in the Department of MCA, SRK Institute of Technology, Vijayawada.
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Advanced Data Protection Techniques: Proxy Re-Encryption in Cloud Environments

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Abstract : As the Web of Things has developed, information sharing has become one of the most valuable distributed computing applications. Despite the fact that this innovation has a satisfying stylish, information security is as yet one of its challenges on the grounds that improper information usage could have various troublesome effects. In this exploration, we present an intermediary re-encryption strategy for secure information move in cloud conditions. Information proprietors can re-appropriate their encoded information to the cloud utilizing personality based encryption, and approved clients can get to the information through intermediary re-encryption development. Since Web of Things gadgets have restricted assets, an edge gadget goes about as an intermediary server to direct computationally serious undertakings. Furthermore, by using data driven systems administration abilities, we effectively circulate stored content through the intermediary, consequently supporting the nature of administration and successfully using the organization limit. It achieves fine-grained information access control and decreases unified framework bottlenecks. Our system for guaranteeing information security, classification, and honesty has the potential, as shown by the security review and plan survey.

1.INTRODUCTION

Obviously the Web of Things (IoT) is an innovation of basic significance to the world the present moment, and its execution has prompted a transient expansion in the volume of business led across networks. It is normal that much bias will become interconnected from now on. Data is crucial for the IoT worldview in light of the fact that it tends to be utilized in a wide assortment of settings, including however not restricted to medical services, transportation organizations, savvy urban communities, industry, and assembling (1). The sensors gather information on a wide assortment of elements that have true applications. The advancement of IoT has, in this manner,

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A Comparative Study for Improved Network Intrusion Detection

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ABSTRACT_ In this study, we present a novel supervised machine learning system tailored for determining the nature of network traffic as malicious or benign. Utilizing a combination of supervised learning algorithms and feature selection methods, we identify the optimal model based on detection success rates. Our investigation reveals that Artificial Neural Network (ANN) models, coupled with wrapper feature selection, outperform Support Vector Machine (SVM) techniques in classifying network traffic. Leveraging the NSL-KDD dataset, we evaluate the performance of SVM and ANN supervised machine learning techniques. Our comparative analysis demonstrates the superiority of our proposed model in achieving intrusion detection success rates over existing methodologies.

1.INTRODUCTION

In the world of rapidly developing technology, networks are facing threats like viruses, worms, Trojan horses, spyware, adware, root kits, etc[1]. These intrusions need to be identified before any type of loss to the organizations. Even internal Local Area Network (LAN) is also seriously struggling with intrusions [2]. This is affecting productivity of computer networks in terms of bandwidth and other resources. Hackers use advance features like dynamic ports, IP address spoofing, encrypted payload etc., to avoid detection. This type of intrusions can be detected by discovering patterns in network traffic dataset [3]. Due to huge and imbalanced dataset machine learning based Intrusion Detection System (IDS) faces problem to processentire data. So, it is necessary to identify intrusions through.

2.LUTERATURE SURVEY

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Cloud-Based CDA Health Information Exchange: Generation and Integration

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ABSTRACT:

Successful deployment of Electronic Health Record helps improve patient safety and quality of care, but it has the prerequisite of interoperability between Health Information Exchange at different hospitals. The Clinical Document Architecture (CDA) developed by HL7 is a core document standard to ensure such interoperability, and propagation of this document format is critical for interoperability. Unfortunately, hospitals are reluctant to adopt interoperable HIS due to its deployment cost except for in a handful countries. A problem arises even when more hospitals start using the CDA document format because the data scattered in different documents are hard to manage. In this paper, we describe our CDA document generation and integration Open API service based on cloud computing, through which hospitals are enabled to conveniently generate CDA documents without having to purchase proprietary software. Our CDA document integration system integrates multiple CDA documents per patient into a single CDA document and physicians and patients can browse the clinical data in chronological order. Our system of CDA document generation and integration is based on cloud computing and the service is offered in Open API. Developers using different platforms thus can use our system to enhance interoperability.

1.INTRODUCTION:

One of the key features of the cloud includes the flexibility, so we used the clouds for large data storage system. When a patient is recognize at a clinic, a CDA document recording the diagnosis is generated. The CDA document can be shared with other clinics if the patient agrees. The concept of family doctor does not exist in some countries; therefore it is common for a patient to visit a number of different clinics. The interchange of CDA document is triggered in the following cases: when a

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HAND WRITTEN DIGIT RECOGNITION

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1.INTRODUCTION

The background and context for the development of a deep recognition engine for handwritten digits lie at the intersection of artificial intelligence, pattern recognition, and practical applications in automation and data processing. Handwritten digit recognition is a fundamental task in pattern recognition and machine learning, with applications spanning various fields such as postal services, finance, and document processing. The ability to accurately decipher handwritten digits holds immense significance in automating tasks like postal sorting, check processing, and form recognition, where manual data entry can be time-consuming and error-prone.

Traditional approaches to handwritten digit recognition often relied on handcrafted features and shallow learning algorithms, which struggled to capture the complex patterns and variations inherent in human handwriting. However, the advent of deep learning, particularly Convolutional Neural Networks (CNNs), revolutionized this field by enabling the automated extraction of hierarchical features from raw data, thus

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1.INTRODUCTION

The background and context for the development of a deep recognition engine for handwritten digits lie at the intersection of artificial intelligence, pattern recognition, and practical applications in automation and data processing. Handwritten digit recognition is a fundamental task in pattern recognition and machine learning, with applications spanning various fields such as postal services, finance, and document processing. The ability to accurately decipher handwritten digits holds immense significance in automating tasks like postal sorting, check processing, and form recognition, where manual data entry can be time-consuming and error-prone.

Traditional approaches to handwritten digit recognition often relied on handcrafted features and shallow learning algorithms, which struggled to capture the complex patterns and variations inherent in human handwriting. However, the advent of deep learning, particularly Convolutional Neural Networks (CNNs), revolutionized this field by enabling the automated extraction of hierarchical features from raw data, thus

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A Convolutional Neural Network-based Method for Identifying COVID19 Face Masks

64

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ABSTRACT_ Changes in the lifestyle of everyone around the world. In those changes wearing a mask has been very vital to every individual. Detection of people who are not wearing masks is a challenge due to Outbreak of the Coronavirus pandemic has created various the large number of populations. This project can be used in schools, hospitals, banks, airports, and etc. as a digitalized scanning tool. The technique of detecting people's faces and segregating them into two classes namely the people with masks and people without masks is done with the help of image processing and deep learning. With the help of this project, a person who is intended to monitor the people can be seated in a remote area and still can monitor efficiently and give instructions accordingly. Various libraries of python such as OpenCV, TensorFlow and Keras. In Deep Learning Convolution Neural Networks is a class Deep Neural Networks which is used to train the models used for this project..

1.INTRODUCTION

Coronavirus sickness 2019 has impacted the world considerably. One significant safety approach for human beings is to put on masks in public settings. so many public provider carriers require consumers to employ the carrier just if they put on masks correctly. However, there are simply a few lookup research about face masks recognition relying purely on photo analysis. In this we offer, MobileNet Mask, it is a deep learning-based multi-phase face masks detection model for blocking human transmission of SARS-CoV-2. Two outstanding face masks datasets have been utilised to instruct and take a look at the model for detecting with and barring a face masks from the snap photographs and video stream. Experiment effects demonstrate that with 770 validation samples MobileNet Mask achieves an accuracy of ~ 93 percent and with 276 validation samples it attains an accuracy of roughly ~ 100 percent . The penalties demonstrated that our proposed technique is fairly exact have been identified as a virus. Loss of smell and taste was added as a compatible and

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Machine Learning-Based Drug Recommendation System Based On Sentiment Analysis Of Drug Reviews

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ABSTRACT

Since the emergence of the corona virus, there has been a dramatic increase in the difficulty with which authorized clinical resources, such as doctors, nurses, diagnostic tools, and medications, may be obtained. Many people in the medical community perish because of the widespread sorrow. As a result of the shortage, people started medicating themselves without first consulting a professional, worsening the health crisis. Machine learning has proven useful in many areas, and new research and development in the field of automation has recently increased in pace and scope. The goal of this research is to introduce a drug recommender system that can significantly lessen specialists' workload. In this study, we developed a medicine recommendation system that predicts sentiment based on patient reviews by employing a number of vectorization processes, including Bow, TF-IDF, Word2Vec, and Manual Feature Analysis, and thus aids in the selection of the best drug for a given disease as determined by a number of different classification algorithms. Precision, recall, f1score, accuracy, and area under the curve (AUC) were used to rate the anticipated emotions. The findings demonstrate that the classifier Linear SVC with TF-IDF vectorization achieves the highest accuracy compared to the other models.

INDEX TERMS Drugs, Sentiment analysis , Recommender system, Natural language processing, Health care .

I. INTRODUCTION

Especially in rural areas, where there are fewer specialists than in urban areas, countries are experiencing a lack of doctors while the number of corona virus cases increases dramatically. Depending on the medical school you attend, it might take anywhere from six to twelve years to become a fully

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Machine Learning-Based Drug Recommendation System Based On Sentiment Analysis Of Drug Reviews

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ABSTRACT

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Image Manipulation Detection through Machine Learning

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Abstract— In present days fake images are becoming more realistic with high-quality, even hard to detect through human eyes. Biometric technology helps in recognizing a person's identity, but criminals alter their looks, and psychological behavior to deceive the recognizing system. As new types of fake images are emerging rapidly, developing new detection systems is becoming a challenging task. In this project, we explore this problem by using machine learning methodologies and image preprocessing. To overcome this problem, we are employing a method called Deep Texture Feature Extraction from images and then building a machine-learning model using the CNN algorithm. LBPNET, a machine learning convolution neural network, is the name of the network we created for this research to identify manipulated face photographs. Here, we will first extract LBP from the images, and then we will train the convolution neural network on the LBP descriptor images to produce the training model. Every time a new test image is uploaded, the training model will use that image to determine if the test image is manipulated or not.

Keywords— Image Preprocessing, LBP, Texture Feature Extraction, Machine Learning, LBPNet, CNN, Image Manipulation Detection.

I. INTRODUCTION

In the traditional image forgery detection approach, two types of forensics scheme are widely used: active schemes and passive schemes. With the active schemes, the externally additive signal (i.e., watermark) will be embedded in the source image without visual artifacts. To identify whether the image has been tampered or not, the watermark extraction process will be performed on the target image to restore the watermark. The extracted watermark image can be used to localize or detect the tampered regions in the target image. However, there is no "source image" for the generated images by GANs such that the active image forgery detector cannot be used to extract the watermark image. The second one-passive image forgery detector–uses the statistical information in the source image that will be highly consistent between different images. With this property, the intrinsic statistical information can be used to detect the fake region in the image. However, the passive image forgery detector cannot be used to identify the fake image generated by GANs since they are synthesized from the low-dimensional random vector. Nothing changes in the generated image by GANs because the fake image is not modified from its original image. The objective of this project is to identify manipulated images (Fake images).

II. LITERATURE SURVEY

According to a study conducted by Zheng et al. [2] (2018), the identification of fake news and images is very difficult, as fact-finding of news on a pure basis remains an open problem and

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Automatic Duplicate Question Detection in Stack over Flow

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Abstract:

Stack Overflow is a popular Community-based Question Answer (CQA) website focused on software programming and has attracted more and more users in recent years. However, duplicate questions frequently appear in Stack Overflow and they are manually marked by the users with high reputation. Automatic duplicate question detection alleviates labor and effort for users with high reputation. Although existing approaches extract textual features to automatically detect duplicate questions, these approaches are limited since semantic information could be lost. To tackle this problem, we explore the use of powerful deep learning techniques, including Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN) and Long Short-Term Memory (LSTM), to detect duplicate questions in Stack Overflow. In addition, we use Word2Vec to obtain the vector representations of words. They can fully capture semantic information at the document level and word level respectively. Therefore, we construct three deep learning approaches WV- CNN, WV-RNN and WV-LSTM, which are based on Word2Vec, CNN, RNN and LSTM, to detect duplicate questions in Stack Overflow. Evaluation results show that WV-CNN and WV-LSTM have made Significant improvements over four baseline approaches (i.e., Duplicate Predictor, Dupe, Duplicate Predictor Repeat, and Duplicate Repeat) and three deep learning approaches (i.e., DQ-CNN, DQ-RNN, and DQ-LSTM) in terms of recall-rate@5, recall- rate@10 and recall-rate@20. Furthermore, the experimental results indicate that our approaches WV-CNN, WV-RNN, and WV-LSTM outperform four machine learning approaches based on Support Vector Machine, Logic Regression, Random Forest and extreme Gradient Boosting in terms of recall-rate@5, recall-rate@10 and recall-rate@20

Key Words: Convolutional Neural Networks (CNN), recall-rate@5, recall- rate@10. recall-rate@20, Stack Overflow Dataset, LDA, Flask, Tkinter.

1. Introduction:

Duplicate questions make Stack Overflow site maintenance harder, waste resources that could have been used to answer other questions and cause developers to unnecessarily wait for answers that are already available. A typical question in Stack Overflow contains several fields, such as submitter, title, description, tags, and comments. +A developer needs to provide all three pieces of information when he/she submits a question to Stack Overflow. The title is a summary of the question, the description is a detailed explanation of the question, and tags are sets of words or short phrases that capture important aspects of the question. The goal is to implement Duplicate Predictor which takes input from a new question and gives output in the form of k duplicate questions as the output by considering multiple factors.

GESTURE DRIVEN PRESENTATION CONTROL

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ABSTRACT: - This project presents a real-time interactive Presentation Control System that redefines the conventional method of delivering presentations through innovative hand gesture recognition. Utilizing the robust hand tracking capabilities of OpenCV and the precise gesture recognition functionalities of Mediapipe, the system empowers users to seamlessly navigate through slides, annotate content, and interact with presentations using intuitive hand movements. By overlaying the live camera feed onto the presentation interface, users can visualize their gestures alongside the slides in real-time, enhancing the interactive experience. The system interprets specific gestures, such as using the little finger to advance to the next slide and the thumb to go back to the previous slide. Additionally, users can utilize the index finger and middle finger to draw annotations, while the index finger alone serves as a pointer. To undo actions, users can gesture with the index, middle, and ring fingers, while raising all fingers clears annotations. This novel approach bridges the gap between traditional presentation tools and modern interactive interfaces, offering a more efficient and engaging way to deliver presentations, particularly in scenarios where conventional input devices may be impractical or cumbersome. With its combination of OpenCV and Mediapipe libraries, the system ensures high accuracy and responsiveness, enabling smooth and intuitive control of presentations through natural hand movements

KEYWORDS: - OpenCV, Mediapipe, Hand Gesture Recognition, Presentation Controller.

I. INTRODUCTION

The development of this real-time interactive Presentation Control System involved several key steps to ensure its effectiveness and usability. Initially, our project team conducted extensive research into computer vision techniques, focusing particularly on hand tracking and gesture recognition algorithms. This laid the foundation for the system's functionality, which would rely on accurately interpreting user hand movements. Our team then proceeded to integrate OpenCV and MediaPipe libraries into the system, harnessing the robust hand tracking capabilities of OpenCV and the precise gesture recognition functionalities of MediaPipe.

Once the foundational software components were in place, we began designing the user interface and interaction flow. This involved mapping out how users would navigate through slides, annotate content, and interact with the presentation using intuitive hand gestures. The goal was to create a seamless and intuitive user experience that would enhance engagement and productivity during presentations. Overlaying the live camera feed onto the presentation interface was a crucial aspect of this design, as it allowed users to visualize their gestures alongside the slides in real-time, providing immediate feedback on their interactions.

The implementation phase involved coding and testing the various features of the system, ensuring that hand gestures were accurately interpreted and translated into the desired actions. Specific gestures, such as using the little finger to advance to the next slide and the thumb to go back to the previous slide, were programmed into the system to provide users with intuitive control over the presentation. Additionally, the ability to draw annotations using the forefinger and middle finger, as well as using the forefinger as a pointer, added further functionality to the system.

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Heart Attack Risk Prediction using Retinal Eye Images

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ABSTRACT: The microvascular structure and function are significantly affected by key cardiovascular disease risk factors like hypertension and heart attacks. Fundus camera images can reveal irregularities in the retinal blood vessels, indicating damage caused by these conditions. Machine learning and AI techniques can detect preclinical signs not easily visible to the naked eye. This methodology aims to study how hypertension and heart attacks impact the morphological characteristics of retinal blood vessels. Data scientists gather retinal images upon diagnosing hypertension and heart attack, removing interference data through vessel segmentation to focus solely on blood vessel details. The goal is to develop an image-based system for detecting heart disease, particularly in young individuals. Retinal imaging datasets are analyzed using vessel segmentation to isolate blood vessels. Blood vessel analysis is crucial across various medical fields for diagnosis, treatment planning, and outcome assessment. Vessel segmentation is essential for utilizing retinal images in heart disease detection, as changes in the eyes can signal various health conditions.

INTRODUCTION

The heart is a muscular organ responsible for pumping blood throughout the body and is the central component of the body's cardiovascular system, which includes the lungs. This system also consists of a network of blood vessels, such as veins, arteries, and capillaries that distribute blood throughout the body. Any disruptions in the normal flow of blood from the heart can lead to various heart diseases, collectively known as cardiovascular diseases (CVD). These diseases are a leading cause of death globally, with 17.5 million deaths attributed to heart attacks and strokes, as reported by the World Health Organization (WHO).

The majority of cardiovascular disease-related deaths, over 75%, occur in middle-income and low-income countries, with 80% resulting from strokes and heart attacks. Early detection of cardiac issues and predictive tools for heart diseases can significantly impact saving lives and assisting doctors in devising effective treatment plans to decrease mortality rates due to cardiovascular diseases. With the advancement of healthcare systems, vast amounts of patient data, including Big Data in Electronic Health Record Systems, are now accessible. This data can be leveraged to create predictive models for cardiovascular diseases using data mining or machine learning techniques, which involve analyzing large datasets from various angles to derive valuable insights. Data mining is crucial for extracting hidden patterns or similarities from extensive medical data, aiding in disease diagnosis and patient care. A machine learning algorithm is proposed in this study for implementing a heart disease prediction system, validated using two open- access heart disease prediction datasets. Data mining plays a vital role in exploratory analysis by uncovering significant information from substantial databases, especially in the medical field, where it can reveal hidden patterns within clinical datasets.

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INDIAN SIGN LANGUAGE RECOGNITION USING OPEN CV

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Abstract:

This project proposes the development of an Indian Sign Language Recognition System using Open-Source Computer Vision Library. The system aims to bridge the communication gap between individuals with hearing impairments who use ISL and those who do not understand the language. Leveraging computer vision techniques, the system will detect and interpret ISL gestures and movements in real-time, enabling the translation of sign language into text or speech. The project seeks to address the lack of accessible tools for learning and using ISL, thereby promoting inclusivity and enhancing communication accessibility for the hearing-impaired community in India. Sign languages are defined as an organized collection of hand gestures having specific meanings which are employed from the hearing-impaired people to communicate in everyday life.

Communication is an important aspect when it comes to share or express information, feelings, and it brings people closer to each other with better understanding. Sign language, a full-fledged natural language that conveys meaning through gestures, is the primary chief of communication among Deaf and Dumb people. A gesture is a pattern which may be static, dynamic or both, and is a form of nonverbal communication in which bodily motions convey information. Sign language translation is a task forautomatically translating sign languages into written languages which is already existed.Now we are going to implement a system which is used to convert the text which is produced sign language translator into speech. In this project we are going to implementa deep learning algorithms-based system such as CNN for translation of text (i.e., which is extracted from sign language) into speech. CNN are to capture intricate hand movements and to learn the temporal relationships between the hand gestures respectively. Later the translated text is then converted to speech using a Text- To-Speech (TTS) API. This allows the system to provide a complete communication solution for deaf and mute individuals.

1. Introduction:

In order to communicate knowledge in our everyday lives, contact between various communities is essential and crucial. Effective communication is an essential life skill, but individuals with speech and hearing impairments find it challenging to share their thoughts with others. There are several ways that two individuals can communicate with each other. Not everyone is able to decipher sign language while conversing with members of the deaf and dumb communities. It is challenging to communicate without the assistance of an interpreter or other resources. In order to facilitate barrier-free communication and make sign language understandable to others, we must translate it.

A system for recognising sign language is one of the efficient solutions to this problem. Sign language uses a variety of hand movements to convey important information. There are regional variations in sign language around the globe. Around the world, 135 sign languages are commonly used for communication. Every sign language is distinct from the others, much as American Sign Language differs from Indian sign language in India. We standardised to focus on Indian Sign Language motions because we thought it would be easier

Combatting with Counterfeit Currency Using Deep Learning

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Abstract: In light of the widespread problem of counterfeit money, this research aims to create a deep learning-based system that can reliably and efficiently detect counterfeit money. Xceptionarchitecture, Local Binary Patterns (LBP), and Convolutional Neural Networks (CNN) are among of the approaches investigated in this research, which makes use of a large collection of pictures of counterfeit cash. Traditional classifiers like KNN, SVM, and Voting Classifier (a combination of Decision Trees and Random Forests) were used to train and assess the models via extensive testing. It is worth mentioning that the ensemble method produced impressive accuracy; specifically, the Voting Classifier attained an exceptional 100% accuracy rate for CNN, LBP, and Xception models. These results highlight the possibility of using deep learning techniques to solve the pressing problem of detecting counterfeit money, which might lead to an improvement in the security and reliability of the world's financial system.

Fake money, Fake Identification System, and CNN are index terms.

1. INTRODUCTION

Maintaining the value of money is crucial to a stable economy in this age of immediate cross-border financial transactions and fast globalization. The widespread circulation of

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Children ADHD Disease Detection using Pose Estimation Technique

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ABSTRACT:
This paper explores the current machine learning based methods used to identification Attention. Deficit Hyper activity Disorder (ADHD) and Depression in humans. Prevalence of mental ADHD and depression is increasing worldwide, partly due to the devastating impact of the COVID-19 pandemic for the latter but also because of the increasing demand placed on the mental health services. It is known that depression is the most common mental health condition, affecting an estimated 19.7% of people aged over16. ADHD is also a very prevalent mental health condition, affecting approximately 7.2% of all age groups with this being conceived as a conservative estimate. We explore the use of machine learning to identify ADHD and depression using different wearable and non-wearable sensors/modalities for training and testing. These modalities include functional Magnetic Resonance Imagery (f MRI) Electroencephalography (EEG) Medical Notes, Video and Speech. With mental health awareness on the rise, it is necessary to survey the existing literature on ADHD and depression for a machine learning based reliable Artificial Intelligence (AI). With access to in-person clinics limited and a paradigm shift to remote consultations, there is a need for AI-based technology to support the healthcare bodies, particularly in developed countries.

I. Literature Review

A Gesture Recognition System for Detecting Behavioral Patterns of ADHD: We present an application of gesture recognition using an extension of dynamic time warping (DTW) to recognize behavioral patterns of attention deficit hyperactivity disorder (ADHD). We propose an extension of DTW using one-class classifiers in order to be able to encode the variability of a gesture category, and thus, perform an alignment between a gesture sample and a gesture class. We model the set of gesture samples of a certain gesture category using either Gaussian mixture models or an approximation of convex hulls. Thus, we add a theoretical contribution to classical warping path in DTW by including local modeling of intraclass gesture variability. This methodology is applied in a clinical context, detecting a group of ADHD behavioral patterns defined by experts in psychology/psychiatry, to provide support to clinicians in the diagnose procedure. The proposed methodology is tested on a novel multimodal dataset (RGB plus depth) of ADHD children recordings with behavioral patterns. We obtain satisfying results when compared to standard state-of-the-art approaches in the DTW context.

Auxiliary diagnostic system for ADHD in children based on AI technology: Traditional diagnosis of attention deficit hyperactivity disorder (ADHD) in children is primarily through a questionnaire filled out by parents/teachers and clinical observations by doctors. It is inefficient

FLIGHT DELAY PREDICTION BASED ON AVIATION BIG DATA AND MACHINE LEARNING

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ABSTRACT

It is important for the airline business to have operations with more precise flight predictions, as these would result in fewer delays. Machine learning techniques have been developed over time, and they are becoming increasingly important in the area of improving airports. Therefore, predictions based on ML techniques have very low performance. This paper will discuss a wider variety of factors that could potentially affect delays in air traffic than has been done previously with respect to machine-learning models constructed to predict such delays. In this research study, ADS-B messages received through automatic dependent surveillance broadcasts were used to generate the necessary data for the project. The tasks designed for prediction contain various types of classification tasks and one regression task. It was proved in experiments that LSTM can deal with the aviation sequence data derived from our work satisfactorily, yet overfitting threatens in the small data sample provided. The proposed random forest model outperformed as compared to any other existing method, yielding an increased forecast accuracy of 90.2% on binary variables and at the same time addressing issues concerning overfitting significantly.

Keywords: Flight Delay, Classification, Air Traffic, Machine Learning

1. INTRODUCTION

One of the crucial concerns in the aviation industry is the high costs associated with delays in flights resulting from natural disasters or operational malfunctions. These are quite costly for airlines and yet cause tempo spatial difficulties in running operations, which make consumers not want to visit again. Additionally, this makes carriers earn a bad reputation among people while customers get annoyed.

Everyone knows that the only way to avoid having a flight delay before takeoff is when the supporting airlines send a prediction about the predicted delay both to the company's ground workers and clients in different circumstances, but some of the factors causing delays in flights include weather conditions, while others are unforeseen technical difficulties such as mechanical problems that pose danger to travelers. This prompted us to use live weather knowledge combined with various metrics to calculate wing lag before departure.

According to reports from the Directorate General of Civil Aviation (DGCA), from January to April 2017, there were almost 512 thousand domestic passengers affected by airline corporations not boarding plus flight cancellations and delays in India. In the first four months of 2017, airline companies had to compensate passengers with more than 25 CR for various inconveniences. This project's prediction analysis can therefore serve as a prototype for identifying operational variables contributing to delays in any situation.

Taxonomy outlines and systematizes the chief causes for delaying a flight. This involves why the flight delays, what it impacts upon and how to address the issue through predicting delays before time. It looks at possible features of the airline domain, for example, a question-answer approach. The chief problems that make flights late might be flight delay propagation, flight departure delay, and flight cancellation.

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PRINCIPAL
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CYBER THREAT DETECTION USING NEURAL NETWORKS AND MACHINE LEARNING

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ABSTRACT

Detection techniques for cyberthreats can be so difficult, such as the provision of an efficient system for automated detection. The author develops one based on artificial neural networks, which are capable of detecting artificial intelligence-type cyberthreats by using deep learning rather than other AI methods. This approach transforms many security alerts obtained during the monitoring process into isolated event signatures, followed by a more comprehensive analysis to identify internet-related attacks with better results in comparison with conventional approaches. Our research produced an AI-SIEM that is a result combination of event profiling and various other neural network types like convolutional neural networks (CNNs), and artificial neural networks (ANNs) for handling data. The main significance is that it ensures fast reaction time by distinguishing genuine alerts from fake ones. All experiments in this study were carried out by the authors on two benchmark datasets (NSLKDD and CICIDS2017) and two actual datasets for comparison with other already existing methods. Their abilities were assessed using well-known machine-learning approaches to contrast them with other established performances; therefore, learning makes them an effective model for detecting network intrusions. It outperforms traditional technique methods on machine-learning grounds, even though it is used practically.

Keywords: Threat Detection, Neural Networks, Internet, Cyber Attacks

1. INTRODUCTION

In the digital era, the increase in the number and complexities of cybercrimes have made it a significant worry on the minds of many individuals. Oftentimes, the conventional signature-based intrusion detection systems (IDS) and security information and event management (SIEM) tools find it impossible to deal effectively with the changing terrain of cyber-attacks. To solve this problem, a lot of scientists are looking at more sophisticated machine learning models like AI, which help in detecting different types of information online that may be harmful to someone else.

A possible strategy among many would be to implement artificial neural networks (known as ANNs)—machine learning models inspired by the brain's architecture and functioning that are highly adept at recognising patterns, detecting anomalies, and predicting trends necessary for effective cyber threat detection. Security analysts can potentially enhance the accuracy and responsiveness of their cyber defense systems by using the strong feature extraction and non-linear modeling capabilities of ANNs. This paper introduces a new way of finding cyberthreats by using event profiling together with other ANN combinations such as FCNNs, CNNs, and LSTM. Evolved from artificial intelligence (AI), this security information and event management (SIEM) aims at enabling differentiating elements of a cyberattack from false alarms so that security teams may better respond to these developing dangers.

This study aims to:

- Preprocess security event data using event profiling to enhance ANN-based detection.
- Evaluate various ANN models (CNN and ANN) with respect to the identification of cyber threats, comparing them to conventional ML techniques.
- Present evidence supporting the use of the proposed method based on standardized as[illegible] cyber security data, highlighting its strength in detecting intrusions.

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REAL-TIME STRESS DETECTIO ANALYSIS USING FACIAL EMOTI RECOGNITION

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ABSTRACT

Real-Time Stress Detection and Analysis using Facial Emotion Recognition" is an innovative system designed for real-time stress detection and analysis through facial emotion recognition. Leveraging the power of machine learning and computer vision techniques, the system can accurately identify and analyze emotions exhibited by individuals in live video streams. By utilizing a pre-trained deep learning model, the system detects facial expressions associated with various stress levels, including "Bursted," "Irritated," "Anxious," "Relaxed," "Neutral," "Broked," and "Shocked." The project integrates with a web application interface where users can visualize comprehensive stress analysis reports generated from the detected emotions over time. Through detailed graphs and charts, users can explore trends such as emotion distribution over time, average stress levels, and daily stress variations. Additionally, the system provides personalized recommendations based on the user's emotional patterns, aiming to improve overall well-being. Emo Watch offers a valuable tool for individuals, therapists, and researchers to monitor and manage stress levels effectively in diverse settings.

Keyword : - *Real-Time, Stress Detection, Analysis, Facial Emotion Recognition*

1. INTRODUCTION

The growing number of people with Autism Spectrum Disorder (In today's dynamic and fast-paced world, where stress and emotional well-being are increasingly significant concerns, the need for effective tools to manage and understand our emotions has never been greater. In response to this growing demand, we are proud to introduce our innovative Emotion Analysis and Stress Monitoring Web Application. Designed to provide users with valuable insights into their emotional state and stress levels, our application combines cutting-edge technology with user-friendly features to promote mental well-being and overall health.

1. **Understanding Facial Expressions:** At the heart of our application lies advanced facial recognition and emotion detection algorithms. By accessing the device's live camera feed, our application is able to capture real-time facial expressions with remarkable accuracy. Through sophisticated machine learning models, we analyze these expressions to identify a wide range of emotions, including happiness, sadness, anger, surprise, and more. This real-time analysis forms the foundation of our comprehensive emotion tracking system.

Multiscale and Multidisciplinary Modeling, Experiments and Design (2025) 8:21
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ORIGINAL PAPER

An RSM modelling and optimization of mechanical behaviour of AlSi12CuNiMg-micro/nano B_4C composites through two-step stir-casting

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Received: 1 September 2024 / Accepted: 24 October 2024

Abstract
Aluminium alloy hybrid composites are extensively utilized in sectors like aerospace, automotive, and packaging industries. This work investigates the effect of micro-nano B_4C reinforcement on the mechanical behaviour of AlSi12CuNiMg alloy composites. A modified stir-casting route was used to produce the AlSi12CuNiMg composites reinforced with micro and nano B_4C particles. Various proportions of micro-B_4C along with 0.5 wt.% of nano-B_4C were injected into the molten AlSi12CuNiMg alloy through dual step stir casting. An RSM model based on central composite design was applied to optimize the operating parameters for fabricating the AlSi12CuNiMg composites with better strength and hardness. The parameters considered for physical experiment in this study were melting temperature, stirring speed and micro B_4C reinforcement. The optimal fabrication conditions were melting temperature of 749.09 °C, stirring speed of 173.6 rpm, and micro B_4C reinforcement of 5.18 wt.%. Under this scenario, the AlSi12CuNiMg-B4C composite exhibited highest density of 97.28%, hardness of 89.87 HV and tensile strength of 170.84 MPa.

Keywords AlSi12CuNiMg alloy · Micro-nano B_4C · Coarse precipitate · Central composite design · Melt temperature

1 Introduction

With continuous fibers and ceramic particles serving as reinforcement, aluminum composites (AMCs) are available in a variety of light alloy matrices (Arumugam and Saravanan 2023; Ravikumar and Suresh 2023), including Al (Nallusamy and Sundaram 2019), Si (Poornesh et al. 2022), and Mg (Ceschini et al. 2016). Al-Si casting alloys are being utilized more often in the automotive sector as an appropriate substitute for cast iron to fabricate engine parts (Wu et al. 2016). In addition to having a high strength to weight ratio, Al-Si alloys have the significant advantage of having excellent corrosion resistance, better mechanical strength and great thermal conductivity, leading to wide spread applications in aviation, transport and construction industries (Javidani and Larouche 2014).

The AlSi12CuNiMg alloy stands out among the Al–Si–Mg alloys because to its comparatively high silicon (Si) and magnesium (Mg) contents. Silicon is used to increase the strengthening and fluidity of casting. Through strain hardening mechanisms as well as heat treatment, magnesium enhances hardenability (Konečná et al. 2016). AlSi12CuNiMg alloy is used for the highly stressed engine components including piston, engine blocks, cylinder heads, and a variety of other automotive, commercial aircraft and transportation sectors. However, the application of Al–Si–Mg alloys is restricted by the presence of partially inherited as-cast microstructure and inevitable metastable precipitates. The usability of Al-Si alloys can be increased by refining the microstructure with the incorporation of ceramic reinforcement.

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Research Article

Securing IoT network with hybrid evolutionary lion intrusion detection system: a composite motion optimisation algorithm for feature selection and ensemble classification

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ABSTRACT

Networks connected to the Internet of Things (IoT) are often vulnerable to attacks. Several existing methods in the intrusion detection system for securing IoT have been presented with ensemble classifier, but it does not accurately classify attack, and also it takes high computation time. With intention of solving the security issues, Intrusion Detection System using Hybrid Evolutionary Lion and Bala[illegible]

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Observations on the structural, piezoelectric, and impedance properties of cation-(La and Sn) modified lead zirconium titanate (PLZST) ceramics

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ABSTRACT

The structural ambiguity was resolved quantitatively with dual-phase models of *Cc* + *P4mm*. Multiple-phase transition behaviors including Antiferroelectric (AFE) to Ferroelectric transition, transition at depolarization temperature, and AFE to paraelectric state transition were observed among PLZST samples and investigated in detail. The piezoelectric and impedance features of a modified PZT ceramic that has different mole ratios of La and Sn co-substitution are shown here. The principle of Archimedes shows that the synthesized specimens have sufficient density for withstanding high temperatures and higher fields while explaining them. We concentrated on the impedance and piezoelectric coefficients d_{33}, g_{33}, and figure of merit (FOM) of the ideal $PbLaZrSnTiO_3$ (PLZST) composition (50/30/20) in this study. The PLZSTs consist of two phases (*Cc* + *P4mm*), which combine to generate a single phase with a high Sn content and a low La content. These structural correlations coexist with the dual evaluation of impedance and piezoelectric characteristics in order to produce optimum composition. In order to evaluate the impedance features, the property of activation energy for the grains also supports the PLZST (50/30/20) having superior properties among PLZSTs. The optimum composition will meet the current business's commercial needs through multiple windows.

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CSE

An optimised soft computing-based approach for multimedia data mining

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Abstract

Multimedia mining is a sub-field of information mining which is exploited to discover fascinating data of certain information from interactive media information bases. The information mining is ordered into two general classifications, such as – static media and dynamic media. Static media possesses text and pictures, while dynamic media consists of audio and video. Multimedia mining alludes to investigation of huge measure of mixed media data so as to extricate design patterns dependent on their factual connections. Multimedia mining frameworks can find significant data or image design patterns from a colossal assortment of imageries. In this paper, a hybrid method is proposed which exploits statistical and applied soft computing based primitives and building blocks, i.e., a novel feature engineering algorithm, aided with convolutional neural networks-based efficient modelling procedure. The optimal parameters are chosen such as – number of filters, kernel size, strides, input shape and nonlinear activation function. Experiments are performed on standard web multimedia data (here, image dataset is exploited as multimedia data) and achieved multi-class image categorisation and analysis. Our obtained results are also compared with other significant existing methods and presented in the form of an intensive comparative analysis.

Keywords

knowledge discovery, supervised learning, multimedia databases, image data, soft computing, feature engineering

Keywords

knowledge discovery
supervised learning
multimedia databases
image data
soft computing
feature engineering

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CYBER ATTACK DETECTION IN NETWORK USING MACHINE LEARNING ALGORITHMS

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ABSTRACT: The use of new innovations give incredible advantages to people, organizations, and governments, be that as it may, messes some up against them. For instance, the protection of significant data, security of put away information stages, accessibility of information and so forth. Contingent upon these issues, digital fear based oppression is one of the most significant issues in this day and age. Digital fear, which made a great deal of issues people and establishments, has arrived at a level that could undermine open and nation security by different gatherings, for example, criminal association, proficient people and digital activists. Along these lines, Intrusion Detection Systems (IDS) has been created to maintain a strategic distance from digital assaults.Right now, learning the bolster support vector machine (SVM) calculations were utilized to recognize port sweep endeavors dependent on the new CICIDS2017 dataset with 97.80%, 69.79% precision rates were accomplished individually.

INTRODUCTION

However, our experience from following up on unsolicited remote portscans we detect in practice is that almost all of them turn out to have come from compromised hosts and thus are very likely to be hostile. So we think it reasonable to consider a portscan as at least potentially hostile, and to report it to the administrators of the remote network from whence it came. However, this paper is focussed on the technical questions of how to detect portscans, which are independent of what significance one imbues them with, or how one chooses to respond to them. Also, we are focussed here on the problem of detecting a portscan via a network intrusion detection system (NIDS). We try to take into account some of the more obvious ways an attacker could use to avoid detection, but to remain with an approach that is practical to employ on busy networks. In the remainder of this section, we first define portscanning, give a variety of examples at some length, and discuss ways attackers can try to be stealthy. In the next section, we discuss a variety of prior work on portscan detection. Then we

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CARDIOVASCULAR DISEASE AND RELIEF AND LASSO FEATURE SELECTION TECHNIQUES USING ML

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ABSTRACT: Cardiovascular disease more commonly known as heart disease is a class or type of illness that involves blood vessels such as the veins, arteries and capillaries, heart or all. The diseases that affect the cardiovascular system of the body are cardiac disease,vascular diseases of the brain and kidney, peripheral arterial disease. A number of diseases affect the heart and the blood vessels, they are as Angina, Arrhythmia, Congenital Heart Disease, Coronary Artery Disease CAD, Heart Attack, Heart Failure, Pulmonary Stenosis, Atherosclerosis, Renal Artery Disease, Stroke, Blood clots, Aneurism. CVDs may be prevented or mitigated by early diagnosis, and this may reduce mortality rates. Identifying risk factors using machine learning models is a promising approach. We'rewould like to propose a model that incorporates different methods to achieve effective prediction of heart disease. For our proposed model to be successful, we have used efficient Data Collection, Data Pre-processing and Data Transformation methods to create accurate information for the training model. We have used a UCI Heart Disease dataset. The results are shown separately to provide comparisons. Based on the result analysis, we can conclude that our proposed model produced the highest accuracy while using RFBM and Relief feature selection methods.

INTRODUCTION

Cardiovascular diseases CVD are among the most common serious illnesses affecting human health. The increased rate of cardiovascular diseases with a high mortality rate is causing significant risk and burden to the healthcare systems worldwide. Cardiovascular diseases are more seen in men than in women particularly in middle or old age although there are also children with similar health issues According to data provided by the WHO, one-third of the deaths globally are caused by the heart disease. CVDs cause the death of approximately 17.9 million

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SCHEMES TO DETECT DATA POISON UNDER DISTRIBUTED ENVIRONMENT

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ABSTRACT:IN THIS PAPER we proposed cross-learning mechanism would generate training loops, based on which a mathematical model is established to find the optimal number of training loops. Then, for semi-DML, we present an improved data poison detection scheme to provide better learning protection with the aid of the central resource. To efficiently utilize the system resources, an optimal resource allocation approach is developed. Simulation results show that the proposed scheme can significantly improve the accuracy of the final model by up to 20% for support vector machine and 60% for logistic regression in the basic-DML scenario. Moreover, in the semi-DML scenario, the improved data poison detection scheme with optimal resource allocation can decrease the wasted resources for 20-100%.

INTRODUCTION

Distributed machine learning (DML) has been widely used in distributed systems , where no single node can get the intelligent decision from a massive dataset within an acceptable time. In a typical DML system , a central server has a tremendous amount of data at its disposal. It divides the dataset into different parts and disseminates them to distributed workers who perform the training tasks and return their results to the center. Finally, the center integrates these results and outputs the eventual model.Unfortunately, with the number of distributed workers increasing, it is hard to guarantee the security of each worker. This lack of security will increase the danger that attackers poison the dataset and manipulate the training result. Poisoning attack is a typical way to tamper the training data in machine learning. Especially in scenarios that newly generated datasets should be periodically sent to the distributed workers for updating the decision model, the attacker will have more chances to poison the datasets, leading to a more severe threat in DML.

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EFFECTIVE FINE-GRAINED WEATHER FORECASTING MODEL USING MACHINE LEARNING

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ABSTRACT: We propose this system which uses Machine Learning Algorithms like SVR, Random Forests, Decision Tree, Ridge, Linear Regression and ARIMA for Weather Prediction. Weather forecasting is the application of science and technology to predict the conditions of the atmosphere for a given location and time. It is well-known that numerical weather prediction (NWP) models require considerable computer power to solve complex mathematical equations to obtain a forecast based on current weather conditions. In this project, we propose a novel light weight data-driven weather forecasting model by exploring temporal modelling approaches of More specifically Standard Linear Regression (SR), Ridge Regression (RR), Support Vector Regression (SVR), and Random Forest Regressor (RF), Decision Tree Regressor (DT) are implemented as the classical machine learning approaches, and Autoregressive Integrated Moving Average (ARIMA) is implemented as the statistical forecasting approaches.

INTRODUCTION

Weather forecasting and Prediction is the process of predicting the state of the atmosphere based on the temperature values and specific time and locations. Numerical weather prediction (NWP) utilizes computer algorithms to provide a forecast based on current weather conditions.

Machine learning models and time-series forecasting are used for predicting and seeing the data according to the time and atmosphere parameters and it will build the models on its superior performance.

Weather forecasts are made by collecting as much data as possible about the current state of the atmosphere (particularly the temperature, humidity, and wind) and using understanding of atmospheric processes (through meteorology) to determine how the atmosphere evolves in the future.

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A NOVEL APPROACH FOR LEAF DISEASE DETECTION USING CNN

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ABSTRACT: In this paper, we proposed "Leaf disease detection uses convolutional network" is concerned with a new approach to the development of plant disease recognition model, based on leaf image classification, by the use of deep convolutional networks. The developed model will be able to recognize different types of plant diseases out of healthy leaves, with the ability to distinguish plant leaves from their surroundings.

CNN is a Deep Learning algorithm which can take in an input image, assign importance to various aspects/objects in the image and be able to differentiate one from the other images. This Deep Learning algorithm will be trained and fine-tuned to fit accurately to the database of a plant's leaves which is the dataset "New Plant Diseases Dataset" consists of about 87K RGB images of healthy and diseased crop leaves which is categorized into 38 different classes.

When plants and crops are affected by pests it affects the agricultural production of the country. Usually, farmers or experts observe the plants with naked eye for detection and identification of disease. But this method can be time consuming, expensive and inaccurate. By using CNN to detect diseases in leaves, the detection of diseased leaf can be easily done. It produces accurate results and it takes less time. With that we can take care of the diseased plant by taking necessary precautions to help increase its growth.

INTRODUCTION

The automated identification of diseases by imaging has the potential to solve all of these problems using tools for automated or expert assistance. Determining the healthiness of a plant through an image is a quite difficult task. The crops are rich and complex environments. Their evolution is constant, with leaves, flowers, and fruits changing throughout the season every season. Their appearance also slightly changes during the day. Since 2012, Deep Neural Networks (DNNs) and in

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BITCOIN MARKET PRICE PREDICTION USING NEURAL NETWORKS

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Abstract : Investors have recently become interested in cryptocurrency because of its inherent decentralization and transparency. In order to build efficient trading platforms, accurate value estimation is essential, given the cryptocurrencies' new features and volatility. The researchers propose a cutting-edge method for determining the value of Bitcoin (BTC), a well-known cryptocurrency, in order to accomplish this. The change point detection method is utilized to provide consistent prediction performance across previously unknown price ranges. Time-series data are split specifically so that segmentation-based normalization can be carried out separately. Price forecasting also makes use of on-chain data as an input variable. The various records that are contained in cryptocurrencies and saved on the blockchain are referred to as "on-chain data." Moreover, for on-chain variable assembles, this paper exhorts involving SAM-LSTM as the assumption model, which includes the thought part and a couple of LSTM modules. Self-consideration-based multiple long short-term memory is abbreviated as SAM-LSTM. Tests conducted with authentic BTC cost information and a variety of technique limits demonstrated that the proposed structure was effective in forecasting BTC prices. The highest individual values for the MAE, RMSE, MSE, and MAPE were 0.3462, 0.5035, 0.2536, and 1.3251, respectively. The outcomes are positive.

Index Terms – BTC, LSTM, SAM-LSTM.

INTRODUCTION

The state of money and the concept of trade have been significantly altered by the growth of blockchain technology. Since its inception, cash has primarily served as a payment instrument and exchange mechanism for significant value. Faith in money, which is guaranteed and settled by a central organization, is necessary for its competence. such as the government or a bank). Focused power is extremely concerned about the possibility of wickedness threatening steady quality exchange. The open, tamper-proof, anti-counterfeiting blockchain gave rise to Bitcoin, a digital currency. By allowing confidence without the assurance of a centralized authority, Bitcoin breaks away from the usual connection. Bitcoin, which ensures decentralization and transparency [2], makes it possible to create a monetary system that reduces the likelihood of fraud and safeguards privacy. In terms of how it differs from the conventional forms of money that are currently in use, the most widely used cryptocurrency, Bitcoin (BTC), is a model cryptocurrency. There is virtually no inflation caused by a central bank issuing money because of the 21 million Bitcoin issue limit [3]. By allowing cryptocurrencies to function as both a means of exchange and a method of value storage, the concept of decentralization is expanded. In point of fact, it is now accepted that investing resources in cryptocurrencies rather than traditional venture vehicles is one of the best ways to increase resource value.

CLASS WISED FACIAL ATTENDANCE SYSTEM

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Abstract -One of the foremost reminiscences everyone has about college is the morning roll call that the lecturers would in person call upon our names, and we tend to reply in affirmation to prove our attendance. It is a long and tedious routine in educational institutions. Attendance being a very important side of administration might usually become a time constraint, repetitive job, loaning itself to inaccuracies. Managing student's attendance at lecture periods has become a tough challenge. The ability to work out the attendance proportion becomes a significant task as manual computation produces errors, and wastes a great deal of our time.

The basis of developing an automatic attendance management system is to computerize the standard method of taking attendance. The proposed system strives to outgrow the constraints of the existing systems and provides features such as detection of faces, extraction of features, detection of extracted features and analysis of student's attendance.

Keywords: Student dataset, Face recognition, Detection

I. INTRODUCTION

The attendance management system has become an important factor in the education field. This system should help the professors and lecturers in marking the attendance by reducing their effort and the time consumption. The study findings enable the definition of the project problem statement, its objectives, scope, and advantages of the Face Recognition Attendance Management System.

At present attendance marking involves manual attendance on thesis sheet by professors and teachers but it is very time-consuming process and chances of proxy is also one problem that arises in such type of attendance marking. Also, there are attendance marking system such as RFID (Radio Frequency Identification), Biometrics etc. but these systems are currently not so much popular in schools and classrooms for students. So, why not shift to an automated attendance system which works on face recognition technique? Be it a class room or entry gates it will mark the attendance of the students, professors, employees, etc.

The main purpose of this project was the slow and inefficient traditional manual attendance system. These made us to think why not make it automated fast and much efficient. Also, such face detection techniques are in use by department like crime investigation where they use CCTV footages and detect the faces from the crime scene and compare those with criminal database to recognize them.

II. LITERATURE SURVEY

Research involves analysing the solutions proposed by others and find out the shortcomings of the proposed systems to put forward a better solution to the problem. To overcome the problems in marking the attendance, the approach used was based on face recognition where the main task is to match the recently taken images with those available in the database.

Dipti Kumbhar, presented the solution to this in [1], where databases are available. dataset of students which involves their name, roll number, department, and images of student in different poses and variations pictures and the other is a database for attendance. Using real time computer vision algorithms in automatic attendance management systems This paper introduces a new approach in automatic attendance management systems, extended with computer vision algorithms. The Proposed system uses real time face detection algorithms which automatically detects and registers students attending on a lecture. [2] was proposed by CH. Vinod Kumar , DR. K. Raja Kumar. Iintroduced a system for student attendance in Classes and any Lecture hall. proposed system we will detect and recognize the faces by using Eigen object detector algorithm. This can be done with the help of OpenCV with haarcascades which are present in the OpenCV inbuilt. The images which are taken from the camera are detected with haarcascade frontal faces and eyes then trained with Eigen algorithm, the trained faces are stored in a database first and compared to the trained images (the trained images are initially present in the database means the related persons to the particular college or organization) after comparing it will make attendance to the recognized persons.[3],was Face Recognition based Attendance Management System using Machine Learning Anushka Waingankar , the attendance is recorded by using a camera that will stream video of students, detect the faces in the image and compare the detected faces with the student database and mark the attendance. The attendance gets marked in a spreadsheet. 1.Finds face in an image. 2. Analyses facial features. 3. Compares against known faces and makes a prediction. [4], Was S. Dev and T. Patnaik, Attendance system using face recognition is a procedure of recognizing students by using face biostatistics based on the high-definition monitoring and other computer technologies. The development of this system is aimed to accomplish digitization of the traditional system of taking attendance by calling names and maintaining pen-paper records. Present strategies for taking attendance are tedious and time -consuming. Attendance records can be easily

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CRIMINAL INVESTIGATION AND SUSPECT DETECTION

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ABSTRACT: Criminal Investigation & suspect Detection that tracks the investigation status of criminal cases with logs and predicts primary suspects. The system is proposed to help agencies like CBI, CID, and other such bureau's to sped up investigation process and track status of multiple cases at a time. Crimes are at rise and becoming difficult for police to identify and catch the criminals. This increasing crime rate can be reduced by giving alert to the person before its occurrence. Our Proposed System will use Face Recognition Algorithms to detect Criminals and will also use face expressions detection to detect expressions of the person.

INTRODUCTION

Crimes are at rise and becoming difficult for police to identify and catch the criminals.This increasing crime rate can be reduced by using face recognition algorithm and bygiving alert message to the person before its occurrence. Our Proposed System will use Face Recognition Algorithms to detect Criminals and will also use facial expressions to detect bad intent.Face Recognition and Face Expression begins with extracting thecoordinates of features such as width of mouth, width of eyes, pupil, and compare theresult with the measurements stored in the database and return the closest record (facialmetrics). If a person is feeling uncomfortable with people surrounded by him/her, canscan their face, and find out whether that person is having any crime record ornot.Ifthepersonishavingcrimerecord,the nthealertmessageisdisplayed.Ifthepersoni snothavinganycrimerecordbutstill,he/shei sfeelinguncomfortablethentheycansharet heimages and other details.Criminal Investigation & suspect Detection tracks the investigation status of criminal cases with logs and predicts primary suspects. The system keeps logs of a case which includes case summary, people involved, disputes, past criminal history of those involved. The system realizes the type of case, allows admin to update the status of investigation, upload more images of crime, items found on scene etc. This

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AUTOMATING E-GOVERNMENT USING ARTIFICIAL INTELLIGENCE

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ABSTRACT: In this Project proposed a framework that utilizes AI technologies to automate and facilitate e-government services. Specifically, werst outline a framework for the management of e-government information resources. Second, we develop a set of deep learning models that aim to automate several e-government services. Third, we propose a smart e-government platform architecture that supports the development and implementation of AI applications of e-government. Our overarching goal is to utilize trustworthy AI techniques in advancing the current state of e-government services in order to minimize processing times, reduce costs, and improve citizens' satisfaction.

INTRODUCTION

Artificial Intelligence (AI) has been around for some decades in several theoretical forms and complicated systems; however, only recent advances in computational powers and big data have enabled AI to achieve outstanding results in an ever-growing number of domains. For example, AI have tremendously advanced the areas of computer vision, medical applications, natural language processing, reinforcement learning, and several other domains. AI can be defined as the ability of a computer to imitate the intelligence of human behavior while improving its own performance. AI is not only robotics, rather an intelligent behavior of an autonomous machine that describes the brain of the machine and not its body; it can drive a car, play a game, and perform diverse sophisticated jobs. AI is a field that falls at the intersections of several other domains, including Machine Learning, Deep Learning, Natural Languages Processing, Context Awareness, and Data Security and Privacy.

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EFFECTIVE MOCK INTERVIEW USING AI AND ML

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ABSTRACT: The purpose of this project is to study the development and consider the future of one of the most controversial areas of human resource development – Interview Performance Management (IPM). Over many years, social psychologists and career coaches have accumulated knowledge and guidelines for success in job interviews. Interview Performance Analysis System is an emerging field and is very crucial to schools and universities in helping their employees and HR. Hiring interviews are structured to evaluate expansively a potential employee's suitability for the position their professional qualifications, interpersonal skills, ability to perform in critical and stressful situations, in the presence of time and resource constraints, etc. It uses various machine learning techniques to predict the performance of interview, and basic exploratory data analysis to derive various correlations of interview performance with psychographic attributes. The system is usingthe machine learning techniques and NLP for better prediction.

INTRODUCTION

Analysis of non-verbal behaviour to predict the outcome of a social interaction has been studied for many years in different domains, with predictions ranging from marriage stability based on interactions between newlywed couples to patient satisfaction based on doctor-patient interaction, to teacher evaluation by analysing classroom interactions between a teacher and the students. However, many of these prediction frameworks were based on manually labelledbehavioural patterns by trained coders, according to carefully designed coding schemes. Manual labelling of nonverbal behaviours is laborious and time consuming, and therefore often does not scale with large amounts of data. As a scalable alternative, several automated prediction frameworks have been proposed based on low-level behavioural features, automatically extracted from larger datasets. Due to the challenges of collecting and analysing multimodal data, most of these automated methods focused on a single modality of interaction.

We address the challenge of automated understanding of multimodal human interactions, including facial expression, prosody, and language. We focus on predicting social interactions in the context of job interviews for college students, which is an exciting and relatively less explored domain. Job interviews are ubiquitous and play inevitable and important roles in our life and career. Over many years, social psychologists and career coaches have accumulated knowledge and guidelines for success in job interviews.

We provide a computational framework to quantify human behaviour in the context of job interviews. We build a model by analysing 138 recorded interview videos (total duration of 10.5 hours) of 69 internship-seeking students from Massachusetts Institute of Technology (MIT) as they spoke with professional career counsellors. Our automated analysis includes facial expressions (e.g., smiles, head gestures), language (e.g., word counts, topic modelling), and prosodic information (e.g., pitch, intonation, pauses) of the interviewees. We derive the ground truth labels by averaging over the ratings of 9 independent judges. Our framework automatically predicts the ratings for interview traits such as excitement, friendliness, and engagement with correlation coefficients of 0.73 or higher, and quantifies the relative importance of prosody, language, and facial expressions. According to our framework, it is recommended to speak more fluently, use less filler words, speak as "we" (vs. "I"), use more unique words, and smile more.

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REAL-TIME HAND GESTURE RECOGNITION

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ABSTRACT: Hand gesture recognition is one of the systems that can detect the gesture of hand in a real time video. The gesture of hand is classified within a certain area of interest. In this study, designing of the hand gesture recognition is one of the complicated jobs that involves two major problems. Firstly, is the detection of hand. Another problem is to create the sign that is suitable to be used for one hand in a time. This project concentrates on how a system could detect, recognize and interpret the hand gesture recognition through computer vision with the challenging factors which variability in pose, orientation, location and scale. To perform well for developing this project, different types of gestures such as numbers and sign languages need to be created in this system. The image taken from the real time video is analyzed via Classifier to detect the gesture of hand before the image processing is done or in the other word to detect the appearance of hand in a frame. The explanation of the results will be focused on the simulation part since the different for the hardware implementation is the source code to read the real-time input video. The developing of hand gesture recognition using Python and OpenCV can be implemented by applying the theories of hand segmentation and the hand detection.

INTRODUCTION

This project is a novel approach to help the user to control the music player using Hand Gestures of the user. The webcam captures the user's hand gestures. These hand gestures are then extracted and processed. According to the gesture of the user, the music player will be automated to its working. of this, coding standards are followed for easy maintainability andextensibility.

By keeping mind that today we are using the music controllers using the Keyboards, Mouse etc... For making the operation of the music controller easy, we are now presenting this music controller, that shows the system for the hand gesture that made as the basis of the detection of the features that are based on the data that we have processed before they are like shape based features like the orientation, thumb in terms of raised, thumb in terms of folded

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WISH LIST PRODUCT PRICE COMPARISON WEBSITE

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ABSTARCT:
IN THIS PAPER we proposed price comparison sites are designed to compare the price of goods and services from a range of providers, which will help consumers in making decision to choose products that will save their money through online. Considering the customers' busy lifestyle especially those who are living in the city area, most of the consumers prefer to buy their needs through the internet because it saves their time. Besides, consumers always go for the cheaper price in purchasing products therefore by using price comparison website, customers do not have to travel from shop to shop only to survey the price offered by different shops for the same product. They can just check it from the price comparison website itself and decide where they should buy the products they need. This project, named as Price4You is the place where shoppers could find the great deals on the products. The best deals will be clearly highlighted. To obtain best deals from Price comparison websites web crawlers and web scrapping techniques are used to fetch detailed information. This way, paper aims to provide solution for online customers to buy products at good deal and save their valuable time, effort, and money.

INTRODUCTION

In the current era of online business, ecommerce has become a huge market for the people to buy goods online. Increasing use of smart devices and other mediums has paved the way for users to buy products almost from anywhere. This has increased involvement of online buyers evolving e-commerce business. These large numbers of ecommerce websites put users in turmoil to search and choose to buy a single product from multiple ecommerce websites. The proposed solution helps online users to grab best deal for their product from multiple ecommerce websites on single web interface. This will in turn save users time, money, and efforts to find the same product prices on different ecommerce websites. Proposed system uses web scraping technique to extract data from ecommerce web pages and web crawler to links for products. Additionally, this page contains the feature of price alert, which user can set, to get notified by the website whenever the suitable price comes up. This system uses the following technologies:

1) Web Crawler: The system deals with price comparison engine. The first thing required are to gather large amount of data from different ecommerce websites. It is not possible to manually collect the data from websites. Hence the best way is to create a web crawler that will navigate to these e-commerce websites. The fetched URLs are sent to scrapper for scrapping process.
2) Web Scrapper: Web Scrapping is used to extract HTML data from URL's and use it for personal purpose. As this is price comparison website, data is scrapped from multiple e-commerce websites. In this system, Scrapping is done using python libraries like requests and beautifulsoup4. Beautifulsoup4 is a python library which is used for parsing html pages. Using these, product information from different e-commerce sites is scrapped and stored in database.
3) Python: Python is a broadly useful deciphered, intelligent, object-situated, and significant level programming language. It gives special importance to code legibility and makes the computer specialist tasks easy by writing code in a small number of lines.
4) Django Web Framework: Django is an elevated level Python Web structure that empowers fast improvement and spotless plan. Worked by experienced designers, it deals with a significant part of the problem of Web advancement, so you can concentrate on composing your application without expecting to waste time. It is free and open source. Django's essential objective is to facilitate the making of complex, database-driven websites. Django underlines reusability and "pluggability" of parts, fast improvement, and the standard of do not rehash yourself. Python is utilized all through, in any event, for settings documents and information models.

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LIGHT WEIGHT INTRUSION DETECTION SYSTEM FOR IOT BASED on MACHINE LEARNING

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ABSTRACT: In the data collection stage, small, memory-constrained and low energy-consumption sensors with a short-range communications capability are employed to collect information about the physical environment. Ethernet, WIFI, ZigBee, and wire-based technologies are combined with Transmission Control Protocol/Internet Protocol to connect the objects and users across prolonged distances during data transmission. During the data processing and utilization stage, applications process the data to obtain useful information, and may initiate control commands to act on the physical environment after making decisions based on the collected information. The coordination of diverse technologies, the heterogeneity, and the distributed nature of communications technologies proposed for the IoT by different standards development organizations magnify the threat to end-to-end security in IoT applications.

INTRODUCTION

Internet of Things (IoT) is based on the integration of uniquely identifiable heterogeneous physical objects around us (humans, animals, sensors, instant cameras, vehicles etc.) and the cyber world with the ability to transfer data over a network without requiring humanto-human or human-to-computer interfaces. As illustrated in Figure 1, the applications of the IoT may range from simple appliance for a smart home to a complex apparatus in a smart grid. The IoT provides a tremendous opportunity for societiesaround the world. Even with different objectives, contrasting IoT applications have an intersectionset of characteristics. Broadly speaking, a primary node in IoT has capability to

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The Effective Quantitative Analysis for Brain Tumor Diagnosis Using an Efficient Deep Learning Algorithm

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Abstract— In the medical field, imaging analysis is the hottest topic. It has attracted many researchers to accurately analyses the disease severity and predict the outcome. However, if the trained images are more complex, the noise pruning results have decreased, which has tended to gain less prediction exactness score. So, a novel Chimp-based Boosting Multilayer Perceptron (ChBMP) prediction framework has been built in this present study. Moreover, the objective of this study is brain tumor prediction and severity analysis from the MRI brain images. The boosting function is employed to earn the most acceptable error pruning outcome. Henceforth, the feature analysis and the tumor prediction process were executed accurately with the help chimp solution function. The planned framework is tested in the MATLAB environment, and the prediction improvement score is analyzed by performing a comparative analysis. A novel ChBMP model has recorded the finest tumor forecasting rate.

Keywords-component; formatting; style; styling; insert (key words).

I. INTRODUCTION

In a human biological system, the brain tumor is considered a harmful disease category [1]. Hence, the early tumor diagnosis framework is a major concern in recovering human lives with proper treatment procedures [2]. Several medical analysis tools exist for these diagnosis systems [3]. However, those tools are high in cost also that is not suitable for predicting all tumor types [4]. Considering these drawbacks, intelligent models have been introduced for the disease prediction problem, which functioned as a neural model [5]. The neural framework process without the optimum layer is defined as machine learning (ML) [6]. Also, the neural models processed with optimal layers for the tuned prediction outcome are termed deep learning (DL) networks [7]. However, the neural models have needed more periods to train the system [8]. Furthermore, the imaging analysis was introduced to the medical framework for the finest visualization results [9]. Some imaging schemes have required more image features to train the system that has maximized the complexity score of the imagining system [10]. Different sequential models have been executed in the imaging system to find the present statistical

features in the trained image [11]. Using those sequential models, the possible features were extracted that are imported to the classification function for further processing [12]. The existing numerical models like kernel model, belief deep networks system, regression, and logical system were widely utilized for analyzing the image features [13]. But those approaches required the additional combination approaches for training and classification [14].

Hence, those combined approaches might increase the computational complexity [15]. Considering these demerits, the neural system has been applied in imaging [16]. The imaging

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Hybrid Stacked Ensemble Model for Brain Stroke Prediction: A Machine Learning Paradigm

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Abstract: The early prediction and detection of brain strokes are crucial for improving patient outcomes and reducing mortality rates. Leveraging the advancements in machine learning and data science, this research introduces a novel methodology to enhance stroke prediction using medical imaging data. The proposed approach involves three key steps: pre-processing using the Wiener filter to reduce noise, Principal Component Analysis (PCA) for dimensionality reduction, and a Hybrid Stacked Ensemble Model (HSEM) for classification. The Wiener filter enhances image quality by minimizing noise, while PCA effectively reduces the data's dimensionality, retaining only the most significant features. The HSEM combines multiple classifiers, specifically Support Vector Machines (SVM) with L1 and L2 regularization, to improve prediction accuracy and robustness. This research uses a publicly available dataset from Kaggle to evaluate the performance of the proposed method. Various performance metrics such as accuracy, precision, recall, F1 score, and AUC-ROC are used to compare the classification models. The experimental results demonstrate the superiority of the proposed method over existing approaches, highlighting its potential for early and accurate brain stroke prediction. This study aims to contribute to the field of medical diagnostics by providing a robust and efficient framework for stroke prediction using machine learning techniques.

Index Terms: Machine Learning, Wiener Filter, Principal Component Analysis, Hybrid Stacked Ensemble Model, Support Vector Machines, L1 Regularization, L2 Regularization.

1. Introduction

The human body's various parts and their functions are the foundation of human life, with the brain playing a crucial role in overall well-being. Stroke, a hazardous condition affecting the brain, is a leading cause of death and disability worldwide, particularly among individuals over the age of 65. Much like heart attacks impact the heart, strokes disrupt the brain's function [1]. Strokes occur due to either a restriction of blood supply to the brain or the rupture and bleeding of brain blood vessels, leading to a deprivation of oxygen and nutrients to brain tissues [2].

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Research Article

Educational Administration Theory and Practice

An In-Depth Study Of Machine Learning In Artificial Intelligence

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ARTICLE INFO

ABSTRACT

Machine learning is a branch of artificial intelligence that enables algorithms to uncover hidden patterns within datasets, allowing them to make predictions on new, similar data without explicit programming for each task. Traditional machine learning combines data with statistical tools to predict outputs, yielding actionable insights. This technology finds applications in diverse fields such as image and speech recognition, natural language processing, recommendation systems, fraud detection, portfolio optimization, and automating tasks. For instance, recommender systems use historical data to personalize suggestions. Netflix, for example, employs collaborative and content-based filtering to recommend movies and TV shows based on user viewing history, ratings, and genre preferences. Reinforcement learning further enhances these systems by enabling agents to make decisions based on environmental feedback, continually refining recommendations. Machine learning's impact extends to autonomous vehicles, drones, and robots, enhancing their adaptability in dynamic environments. This approach marks a breakthrough where machines learn from data examples to generate accurate outcomes, closely intertwined with data mining and data science.

Introduction

In his US senate hearing in April 2018, MarkZuckerberg stressed the necessary capabilities of Facebook's "AI tools (...) to (...) identify hate speech(...)" or " (...) terrorist propaganda". Researchers would typically describe such tasks of identifying specific instances within social media platforms as *classification tasks* within the field of *(supervised) machine learning*. However, with risingpopularity of *artificial intelligence (AI)*, the term AI is often used interchangeably with machine learning–not only by Facebook's CEO in the exampleabove or in other interviews, but also across various theoretical and application-oriented contributions in recent literature. Carner (2017) even states that he still uses AI as a synonym for machine learning although knowing this is not correct. Such ambiguity, though, may lead to multiple imprecisions both in research and practice when conversing about methods, concepts, and results.

It seems surprising that despite of the frequent use of the terms, there is hardly any helpful scientific delineation. Thus, this paper aims to shed light on the relation of the two terms *machine learning* and *artificial intelligence*. We elaborate on the role of machine learning within instantiations of artificial intelligence, precisely within intelligent agents. To do so, we take a machine learning perspective on the capabilities of intelligent agents as well as the corresponding implementation.

The contribution of our paper is threefold. First, we expand the theoretical framework of Russel & Norvig (2015) by further detailing the "thinking" layer ofany intelligent agent by splitting it into separate "learning" and "executing" sublayers. Second, we show how this differentiation enables us to distinguish different contributions of machine learning for intelli gent agents. Third, we draw on the implementations of the execution and learning sublayers ("backend") to define a continuum between human involvement and agent autonomy.

In the remainder of this paper, we first review relevant literature in the fields of machine learning andartificial intelligence. Next, we present and elaborate our conceptual framework which highlights the contribution of machine learning to artificial intelligence.On that basis, we derive an agenda for future researchand conclude with summary, current limitations, as well as an outlook.

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Research Article

Educational Administration Theory and Practice

An In-Depth Study Of Machine Learning In Artificial Intelligence

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Introduction

In his US senate hearing in April 2018, MarkZuckerberg stressed the necessary capabilities of Facebook's "AI tools (...) to (...) identify hate speech(...)" or " (...) terrorist propaganda". Researchers would typically describe such tasks of identifying specific instances within social media platforms as *classification tasks* within the field of *(supervised) machine learning*. However, with risingpopularity of *artificial intelligence (AI)*, the term AI is often used interchangeably with machine learning–not only by Facebook's CEO in the examplealbove or in other interviews, but also across various theoretical and application-oriented contributions in recent literature. Carner (2017) even states that he still uses AI as a synonym for machine learning although knowing this is not correct. Such ambiguity, though, may lead to multiple imprecisions both in research and practice when conversing about methods, concepts, and results.

It seems surprising that despite of the frequent use of the terms, there is hardly any helpful scientific delineation. Thus, this paper aims to shed light on the relation of the two terms *machine learning* and *artificial intelligence*. We elaborate on the role of machine learning within instantiations of artificial intelligence, precisely within intelligent agents. To do so, we take a machine learning perspective on the capabilities of intelligent agents as well as the corresponding implementation.

The contribution of our paper is threefold. First, we expand the theoretical framework of Russel & Norvig (2015) by further detailing the "thinking" layer ofany intelligent agent by splitting it into separate "learning" and "executing" sublayers. Second, we show how this differentiation enables us to distinguish different contributions of machine learning for intelli gent agents. Third, we draw on the implementations of the execution and learning sublayers ("backend") to define a continuum between human involvement and agent autonomy.

In the remainder of this paper, we first review relevant literature in the fields of machine learning andartificial intelligence. Next, we present and elaborate our conceptual framework which highlights the contribution of machine learning to artificial intelligence.On that basis, we derive an agenda for future researchand conclude with summary, current limitations, as well as an outlook.

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Securing healthcare big data in industry 4.0: cryptography encryption with hybrid optimization algorithm for IoT applications

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Abstract
In recent years, the Internet of Things (IoT) has grown at an exponential rate, transforming the healthcare business and perhaps leading to the creation of healthcare big data. As a result, there is a requirement to safeguard data from being attacked in order to ensure secure data transfer through the network. Cryptography has been discovered to be a simple and efficient method for safeguarding healthcare big data. At the same time, in cryptography, the best key generation process is viewed as an optimization issue that may be addressed with meta-heuristic algorithms. As a result, the main focus of this research is on the investigation of health care data security in IoT using the ASS-JFO-DHEA model, which combines an innovative hybrid Artificial Shuffle Shepherd Integrated Jellyfish optimization (ASS-JFO) algorithm with Digital Homomorphism Elgamal Algorithm (DHEA) encryption for data security. MATLAB software is used to carry out the execution and experiments for this research. On different benchmark images from a healthcare dataset, the ASS-JFO-DHEA model is experimentally validated. The peak signal to noise ratio, root mean square error, encryption time, mean square error, and other metrics are used to assess the findings.The findings are compared and contrasted as a consequence of this execution, and a variety of encryption algorithms with their optimization techniques from the literature are recognized as having the most intense PSNR values, i.e., 74 dB, generated by the suggested approach.

Keywords Security · Optimization · Cryptography · Healthcare · Internet of things and cloud

1 Introduction

The Internet of Things (IoT) is a collection of a massive multitude of devices (technologies) connected via the Internet (Mashal et al. 2020). Furthermore, the IoT is a realm where huge data is sent every second. In terms of IoT, a collection of smart devices, actuators and sensors collaborate to monitor and respond to the physical state and human frameworks (Lee et al. 2018). This system is linked to the communication across platforms as well as

Extended author information available on the last page of the article

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Density-Based Scanning to Provide Effective Medical Emergency System

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Density based scanning to provide effective medical emergency system

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ABSTRACT

Even though our ambulance management services are effective in India to provide emergency services, things are manual & there is still a need for technology involvement. When someone meets with a major accident in a remote area or frequently accident-prone areas, still we need someone to identify the scene and dial for the services, or the scene is identified at a later stage, we end up losing a precious life in spite of emergency arrival. Keeping such problems in purview & assuming signal points every at k-distance, the density points are searched for unusual image captured by GPS and matches such images with EXIF data and alerts the services without any manual dialing.

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An optimized EBRSA-Bi LSTM model for highly undersampled rapid CT image reconstruction

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ABSTRACT

COVID-19 has spread all over the world, causing serious panic around the globe. Chest computed tomography (CT) images are integral in confirming COVID positive patients. Several investigations were conducted to improve or maintain the image reconstruction quality for the sample image reconstruction. Deep learning (DL) methods have recently been proposed to achieve fast reconstruction, but many have focused on a single domain, such as the image domain of k-space. In this research, the highly under-sampled enhanced battle royale self-attention based bi-directional long short-term (EBRSA-bi LSTM) CT image reconstruction model is proposed to reconstruct the image from the under-sampled data. The research is adapted with two phases, namely, pre-processing and reconstruction. The extended cascaded filter (ECF) is proposed for image pre-processing and tends to suppress the noise and enhance the reconstruction accuracy. In the reconstruction model, the battle royale optimization (BrO) is intended to diminish the loss function of the reconstruction network model and weight updation. The proposed model is tested with two datasets, COVID-CT- and SARS-CoV-2 CT. The reconstruction accuracy of the proposed model with two datasets is 93.5 % and 97.7 %, respectively. Also, the image quality assessment parameters such as Peak-Signal to Noise Ratio (PSNR), Root Mean Square Error (RMSE) and Structural Similarity Index metric (SSIM) are evaluated, and it yields an outcome of (45 and 46 dB), (0.0026 and 0.0022) and (0.992, 0.996) with two datasets.

1. Introduction

COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This disease must be detected early to save a person's life [1]. The most commonly used COVID-19 analysis approach is the reverse transcription-polymerase chain reaction (RT-PCR) test. However, it suffers from high false negative rates and is highly time-consuming process [2]. CT is a frequently used medical imaging method focussed on minimizing the X-ray dose to diminish patients' risk. CT scan approach possesses a greater sensitivity over COVID-19 diagnosis, which is less resource intensive than traditional RT-PCR tests [3]. Scholars have suggested many studies, including hardware-based scanning protocols and software-based image reconstruction algorithms, to improve the image quality and diminish the radiation dose of CT scans [4]. In clinical circumstances, the significant objective of CT imaging is to offer relevant data, especially the determination of crucial features [5].

In an image reconstruction strategy, the CT images are inevitably degraded by noise, which may degrade quality. For image reconstruction, many advanced methods are evaluated [6,7]. However, the radiological decision certainty relies upon the image quality, including resolution, artefacts, noise, and contrast [8]. The quality of the image is influenced by patient constitution, positioning and acquisition parameters. Initially, low-complexity filtering techniques are presented to suppress the noise. Still, the key structural details are ignored in the filtering technique due to the lack of noise modelling [9]. During the acquisition process of CT images, the noise effects, offset field effects and motion effects are occurred in the CT images due to environmental influences. The movement of patients during CT image acquisition will decline the image quality [10].

The reconstruction algorithms are broadly categorized into three stages: classical algorithm, iterative algorithm, and learning-based algorithms. The classical-based reconstruction algorithms provide fast and marvellous outcomes, but they are not appropriate for extreme imaging due to the presence of artifacts [11]. The next stage is the iterative-based reconstruction method to enhance image quality [12]. The iterative statistical reconstruction (SIR) algorithms accomplish the data's statistical characteristics to overwhelm the noise and streak artifacts [13].

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Designing Reliable Embedded Systems

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Abstract:

In this research, we combine hardware and software fault resistance techniques to provide a new addition to the idea fault-tolerant embedded systems design. Obtaining highest fault tolerance at little cost requires an effective intermediary between hardware crystallisation and system reimplementation in software. This study presents a strategy for developing such a fault-tolerant system, with maximal hardware crystallisation and many software-level execution attempts at minimal cost. All the requirements for a flawless, fault-tolerant system must be met, thus it's important that this one has the highest dependability possible. Time redundancy refers to the practise of re-executing an operation in the event of a failure, such as transitory software errors.

Key words

Fault tolerance, embedded system, fault types, and related terms are discussed.

Introduction

It's possible for a system to fail if it doesn't provide as promised. This breakdown is due to faulty components in the system. Fault-tolerant systems are those that continue functioning as expected despite the presence of mistakes. As it is a fault tolerant system, the system never fails [3]. Applications in the medical, aviation, finance, and engineering fields might benefit greatly from a fault-tolerant system. Redundancy is the key to a fault-tolerant system. Despite malfunctions, a system with redundant parts or components may continue functioning for a longer period of time.

If a system has a backup component, it may continue functioning normally even if a critical component is destroyed. Distinguishing Features What constitutes acceptable performance when a defect is present was determined by your system-level need. Regarding the fault tolerant system, "dependability" is the primary strategy. The following categories will serve to define this. Several categories apply to this situation:

Fault-tolerance is the opposite of fault-tolerance, so what's the difference? System Fault intolerance is a technique for avoiding problems and might be called fault avoidance. This strategy of problem avoidance or fault intolerance may improve the dependability of a system. Before a system's performance at the hardware or software level, the reliability concept eliminates any potential sources of error that may be present in the system [9]. Before discussing the Embedded System Architecture [1], we need to introduce various strategies and procedures with relation to the failures. When the expected behaviour of an element differs from the actual behaviour of that element, we say that element is defective. For theses, we provide two distinct types of poor execution. This author demonstrated in 1982 that irregular performance may occur because of malfunctioning wiring.

In the case of Byzantine Failures, the circuitry in question may be complicit with other bad circuitry in the system or exhibit unpredictable and problematic behaviour on its own. [19]. Schneider had earlier in 1984 presented his ideas in Fail-stop Failures: As soon as the circuitry fails, the element or portion of the system transitions to a state that enables another component of the system to recognise the fault existing in the system, therefore halting the operation before the entire system fails. [21]. When a circuit fails, a Byzantine failure isn't the best fix. This may not always be the case, but it is a dangerous solution for the circuit run. In addition, Byzantine fail-stop failures are used in many different kinds of applications. In 1982, Sitework and Swartz claimed that a circuit with several components was the most dependable kind of circuit. Due to the unique properties of its individual parts, the system may achieve peak performance in the Maximum interval of the circuit when run. The term "fault tolerant system" describes this setup. Mean time between failures is a common way to define fault tolerance (MTBF). That symbol represents the failure probability over discrete intervals among other analytic procedures. [22].

Finding Malicious Sessions in Internet of Things Networks with the Use of K-Nearest Neighbors and the Moth Blade Optimization Algorithm

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Abstract-

There are many ways in which the convenience of an IOT network might improve people's daily lives. Due to the increasing number of potential targets, the security of IoT devices is a pressing issue of the present. In this study, we offer a method for detecting intrusions into IoT networks, which classifies sessions into either attack or regular categories. Work for slection of characteristics for determining the class representative sessions employed a moth flame optimization genetic method. K-Nearest Neighbor was used to determine which class meeting it was. The experimental results, which were obtained using a real dataset, demonstrate that the suggested model, Moth Flame based IOT Network Security (MFIOTNS), is able to optimise different values of the evaluation parameters to provide greater gains in productivity.

Keywords: KNN, Clustering, GA, and Intrusion Detection.

INTRODUCTION

As the use of computers and other forms of electronic communication becomes more commonplace, so do worries about infringements on personal privacy. New and recent attempts to enter computer networks and systems are a direct result of the explosion in the number of Internet-based applications and the emergence of cutting-edge technology like the Internet of Things (IoT). The Internet of Things (IoT) refers to a network of devices that may communicate with one another automatically, without any human involvement. The Internet of Things (IoT) allows a wide variety of sensor-equipped devices (including coffee makers, lights, bicycles, and many more) to communicate with one another and with the wider world through the Internet in fields as diverse as medicine, agriculture, transportation, and more [1]. Apps built for the Internet of Things are revolutionising our daily lives and the way we do business by helping us save both precious time and money. There are no limits to the benefits, and it provides a wealth of new possibilities for sharing information, fostering creativity, and advancing progress. Since the Internet serves as the backbone and nerve centre of the IoT, any security risk that exists on the Internet also exists inside the IoT. Nodes in an IoT network have restricted capabilities, less resources, and no user-managed settings or preferences.

With the proliferation of IoT devices and their incorporation into everyday life, security concerns have emerged as a major challenge, prompting the demand for network-based security solutions. While the state-of-the-art systems are excellent at spotting certain types of assaults, others remain difficult to see. There is no question that there is room for more innovative approaches to enhance network security, since the number of network assaults grows in tandem with the tremendous rise in the volume of information contained in networks [2]. In this regard, Machine Learning (ML) may be seen as one of the most efficient computational models for providing embedded intelligence in the IoT environment. Many network security activities, including traffic analysis, intrusion detection, and botnet identification, have benefited from the use of machine learning [3, 4, 5, 6, 7]. A crucial component of any Internet of Things (IoT) solution is machine learning, which can be defined as the capacity of a smart device to adapt to new situations and automate previously manual tasks based on the device's acquired knowledge. ML may infer useful information from data supplied by devices or people, and ML algorithms are utilised in tasks like regression and classification. For that matter, ML may also be utilised to safeguard an IoT network. There is a growing interest in applying ML to challenges of attack detection, and ML is finding a growing number of uses in the cybersecurity industry. There is a dearth of literature on effective detection approaches appropriate for IoT contexts, despite the widespread usage of ML techniques to uncover the best ways to detect assaults. Signature-based (often also termed misuse-based) and anomaly-based cyber-analysis are the two primary ways in which machine learning may be applied to the attack detection job. Methods that rely on "signatures," or unique patterns of communication, may identify known assaults. The capacity to efficiently identify all known threats without producing an excessive amount of false alarms is a major benefit of this kind of detection technology.

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A novel hybrid feature extraction and ensemble C3D classification for anomaly detection in surveillance videos

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ABSTRACT

Anomaly detection in several deep learning frameworks are recently presented on real-time video databases as a challenging task. However, these frameworks have high false positive rate (FPR) and error rate due to various backgrounds, motion appearance and semantic high-level and low-level features for anomaly detection through action classification. Also, extraction of features and classification are the major problems in traditional convolution neural network (CNN) on real-time video databases. The proposed work is a novel action classification framework which is designed and implemented on large video databases with high true positive rate (TPR) and error rate. In this framework, Kalman based incremental principal component analysis (IPCA) feature extraction method; C3D and non-linear support vector machine (SVM) classifier are used to improve the action prediction (anomaly detection) on the large real-time video databases. The proposed frame work shown new results of high computation performance than the traditional deep learning frameworks for action classification.

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1. INTRODUCTION

In the field of robotics, human-computer interaction and video monitoring applications, action recognition plays a vital role to find and track the human motions for anomaly detection. Various datasets and benchmarks for action recognition have been used for anomaly detection. The image classification has improved considerably for object detection by Ullah *et al.* [1], scene classification defined by Karpathy *et al.* [2], and feature classification by Schölkopf *et al.* [3]. Traditional convolution neural network (CNN) architectures, from image to video, have made considerable progress in many image and video-based surveillance applications. Detecting anomalies is critical issue which is being explored within distinct research fields and applications. The term anomaly refers to thing or event which is not accommodate to normal behavior. Anomaly recognition is all about finding the real-world things in the given training data which are not accommodate to normal behavior. The non-accommodate events in the data are also termed as exceptions or outliers or discordant conclusions or peculiarities or surprise or contaminants in various application fields described by Nair [4]. In the action anomaly detection, human behavior in videos has gained a lot of attention. Action detection in realistic video datasets such as movies by Zhang *et al.* [5], web videos by Feichtenhofer *et al.* [6] and television shows Draper [7]. Action identification continues to be a challenging issue due to variation in action class shown in Figure 1. In the same action class, there is a large intraclass difference that can be caused by background clutter, change of perspective and different movement speeds and styles.

Supervised learning based anomaly recognition methods are exceptional in performance when correlated with unsupervised techniques. The reason is that, these methods used labeled samples. The

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SMART GLOVE-CAPABLE ROBOT

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ABSTRACT

Internet of Things (IOT) technologies are developing rapidly and finding applications in every industry today. As more and more people from more and more places start using IoT, the notion is rapidly evolving. The term "Internet of Things" is often used to describe the practise of linking together electronic gadgets that include sensors, software, modules, etc., in order to share data wirelessly. There's no denying that IoT is a cutting-edge advancement in today's technological landscape, what with how it's streamlining processes and automating tasks. There are older persons who live alone and are unable to communicate effectively with their families. Thus, a channel for their message must be found. More and more crimes, including murder, sexual assault, kidnapping, trafficking in women, etc., are being committed every day in our uncivilised and unsafe society. Therefore, there has to be measures in place to ensure the security of females. In order to ensure the safety of women and the elderly, we have recommended developing a BOT using IOT. There are thus two components to the project, and the Bot supports both of them. The "Smart Gloves" are the glue that keeps the rest of the BOT's gear together (ultrasonic sensors, flex sensors, Bluetooth modules, motors, etc.). The Bot is equipped with 4 storage compartments to hold the necessary supplies. The project is divided into two parts: the first details how the bot assists the elderly by using the Smart Gloves, while the second discusses the implementation of the Smart Gloves for women's protection and security. The elderly wear SMART GLOVES linked to flex sensors in the first scenario. The IoT-based bot is a finger-gesture driven bot that glides back and forth in response to the elderly person's precise finger motions.

The bot features storage compartments for consumables like food, medicine, water, etc., as was previously indicated. When a user puts on the smart gloves and uses hand gestures to communicate with the robot, the robot will go to the location where the user wants the item to be delivered. Without the need for the old person to make any physical or vocal adjustments, the Bot will be able to reach out to them based on the information sent to it through the figure motions shown to the camera. We are also attempting to use the smart gloves to ensure the safety of women in the second scenario. Connected to a buzzer, the Smart Gloves sound an alarm at the first sign of an inappropriate touch, giving bystanders a chance to intervene before the victim's loved ones or the police arrive. The Smart Gloves would play a crucial role in these critical circumstances, perhaps saving the lives of women. It would be a little gesture toward helping the ladies who, in today's impolite society, must deal with a great deal of difficulty? We utilise Arduino, an open-source microcontroller, to programme the bot for the bot's motions, and Arduino IDE, also open-source, is used to dump the programme to Arduino. Using Internet of Things technology, this bot would be fully autonomous, helping the elderly acquire their basic needs and protecting women in perilous circumstances.

Keywords:

Robots that can be controlled by gestures of the fingers, wearable computers, and flexible sensors.

INTRODUCTION

In the rapidly expanding scientific landscape, IoT stands out as one of the most prominent technologies. The Internet of Things (IoT) refers to a set of interconnected computing devices, services, and endpoints that can collect and analyse data from their surroundings and share that data with one another and other devices in the network. The Internet of Things (IoT) is a potentially rapidly developing technology that integrates many significant technologies at once, such as sensors, machine learning, and reliable embedded systems. Devices that aren't connected to the internet but may nevertheless exchange data with one another across a network called the "Internet of Things" The term "Internet of Things" (IoT) is synonymous with the notion of a "smart home," whereby appliances like lights, fans, and electronics may be managed and monitored automatically and remotely. The Internet of Things (IoT) has also spread to new heights in the realms of security and privacy, where it plays a pivotal role in achieving all of the organization's security objectives and helping to make the world a safer and more secure place. Everything around us, from electronic equipment and gadgets to ar

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Reduced encoder time complexity using enhanced adaptive multiple transform selection in versatile video coding

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ABSTRACT

When compressing a video, the architecture is provided with the width and height of the frame along with the video as input. The multiple transform selection (MTS) techniques are used to compress video. Traditional discrete cosine transforms (DCT) and other trigonometric (sine and cosine) transforms, such as DCT-8 and DST-7, are included in the pool of transforms. For the best outcomes, two additional transforms DST-2 and DCT-5 were also utilized to compress any remaining video frames. To improve coding effectiveness, peak signal-to-noise ratio (PSNR), and delay, 2D transforms are broken into 1D directional transforms for block sizes ranging from 4×4 to 64×64. The temporal complexity was greatly decreased by adding DST-2 to the existing video test model (VTM). The MTS's adaptive multiple transform (AMT) scheme already included a pool of transforms, but DST-2 was introduced as a fourth transform. Encoder time complexity was reduced by 22% on average without compromising PSNR and bitrate.

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1. INTRODUCTION

Compressing videos is the most demanding research interest mainly in consumer goods of electronics. ultra-high definition (UHD) should be supported in upcoming televisions. High definition (HD) must be supported by high-end smartphones. The trend of this nature continues for next years to come. Because of these efficient codecs will be in demand with video capacities more than high efficiency video coding (HEVC) [1]. Identical situation continuing the last 33 years. The new standard of coding whichever developed so far reduced bitrate to 50% compared to its previous versions maintaining quality peak signal-to-noise ratio (PSNR) [2].

Usage of orthogonal transforms in signal processing done in digital enhanced that led to recognizing patterns [3] and filtering using a wiener filter [4]. Noninvertible transformation enabled with orthogonal transforms that transform from pattern space to feature space with less dimensionality. Orthogonal transforms like walsh-hadamard, discrete-fourier, slant, and Haar were considered for different applications because they have fast computing algorithms [3]–[10] for them. Karhunen-loeve transform (KLT) is optimal with respect to the following: variance distribution [3], Estimation mean-square error criterion [4], [6] and rate-distortion function [6], lacks an algorithm that enables its fast computation [3]. It is here, DCT is introduced with the fast algorithm for its computation whose performance is closer to that of KLT compared to the performance of walsh hadamard transform, discrete fourier transform, and hadamard transform. Coding of high-resolution images done successfully by discrete cosine transform (DCT) [11]–[15]. DCT was implemented using double-size fast fourier transform (FFT) utilizing complex arithmetic conventionally due to the lack of an algorithm

WIRELESS 6G REVOLUTION: AN IN-DEPTH ANALYSIS OF EMERGING TECHNOLOGIES AND TRENDS

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Abstract:

The advent of wireless communication technologies has witnessed a relentless evolution, from the inception of 1G to the current 5G era. As we stand on the precipice of the next frontier, this survey paper delves into the realm of "Wireless 6G Revolution." Positioned at the intersection of quantum communication, artificial intelligence, and advanced modulation schemes, Wireless 6G promises to be more than just an incremental upgrade. This abstract provides a glimpse into the in-depth analysis presented within this paper, exploring the foundational pillars of Wireless 6G, the landscape of emerging technologies, and the transformative trends poised to redefine connectivity. From the exploration of frequency bands and spectrum utilization to a detailed examination of quantum key distribution and intelligent antenna systems, the paper navigates through the intricacies of Wireless 6G innovation. Case studies illustrating practical applications, discussions on inclusive connectivity, and the ethical considerations surrounding this revolution contribute to a comprehensive overview. Furthermore, the abstract highlights the security challenges and collaborative frameworks essential for fostering a standardized and secure landscape in the Wireless 6G ecosystem. The survey concludes by presenting a future outlook, envisioning the potential applications and anticipating the profound impact of Wireless 6G on global communication systems. As we embark on this in-depth analysis, the Wireless 6G Revolution unfolds as a pivotal chapter in the narrative of wireless connectivity, promising a quantum leap in the way we communicate and connect.

Key Words: quantum communication, artificial intelligence,

I. Introduction

The landscape of wireless communication has undergone a remarkable evolution since the advent of the first generation (1G) networks, gradually progressing through subsequent iterations to the current pinnacle represented by 5G. This introduction serves as a journey through time, tracing the development of wireless technologies that have shaped the way we connect, communicate, and experience the world. Beginning with the early days of cellular networks, each generation brought about transformative changes, from the introduction of digital communication in 2G to the data-centric capabilities of 3G, the high-speed internet access of 4G, and the low-latency, high-capacity promises of 5G[1-3].

As we embark on this survey paper, the rationale for delving into the realm of Wireless 6G is rooted in the relentless pursuit of connectivity excellence. While 5G has unlocked unprecedented speeds and connectivity, the need for even more advanced technologies becomes apparent. Wireless 6G emerges as the next frontier, promising not just incremental improvements but a paradigm shift in the way we conceive and experience wireless communication. The rationale for this investigation lies in understanding the foundational

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CYBER ATTACK DETECTION IN NETWORK USING MACHINE LEARNING ALGORITHMS

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ABSTRACT: The use of new innovations give incredible advantages to people, organizations, and governments, be that as it may, messes some up against them. For instance, the protection of significant data, security of put away information stages, accessibility of information and so forth. Contingent upon these issues, digital fear based oppression is one of the most significant issues in this day and age. Digital fear, which made a great deal of issues people and establishments, has arrived at a level that could undermine open and nation security by different gatherings, for example, criminal association, proficient people and digital activists. Along these lines, Intrusion Detection Systems (IDS) has been created to maintain a strategic distance from digital assaults.Right now, learning the bolster support vector machine (SVM) calculations were utilized to recognize port sweep endeavors dependent on the new CICIDS2017 dataset with 97.80%, 69.79% precision rates were accomplished individually.

INTRODUCTION

However, our experience from following up on unsolicited remote portscans we detect in practice is that almost all of them turn out to have come from compromised hosts and thus are very likely to be hostile. So we think it reasonable to consider a portscan as at least potentially hostile, and to report it to the administrators of the remote network from whence it came. However, this paper is focussed on the technical questions of how to detect portscans, which are independent of what significance one imbues them with, or how one chooses to respond to them. Also, we are focussed here on the problem of detecting a portscan via a network intrusion detection system (NIDS). We try to take into account some of the more obvious ways an attacker could use to avoid detection, but to remain with an approach that is practical to employ on busy networks. In the remainder of this section, we first define portscanning, give a variety of examples at some length, and discuss ways attackers can try to be stealthy. In the next section, we discuss a variety of prior work on portscan detection. Then we

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CARDIOVASCULAR DISEASE AND RELIEF AND LASSO FEATURE SELECTION TECHNIQUES USING ML

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ABSTRACT: Cardiovascular disease more commonly known as heart disease is a class or type of illness that involves blood vessels such as the veins, arteries and capillaries, heart or all. The diseases that affect the cardiovascular system of the body are cardiac disease,vascular diseases of the brain and kidney, peripheral arterial disease. A number of diseases affect the heart and the blood vessels, they are as Angina, Arrhythmia, Congenital Heart Disease, Coronary Artery Disease CAD, Heart Attack, Heart Failure, Pulmonary Stenosis, Atherosclerosis, Renal Artery Disease, Stroke, Blood clots, Aneurism. CVDs may be prevented or mitigated by early diagnosis, and this may reduce mortality rates. Identifying risk factors using machine learning models is a promising approach. We'rewould like to propose a model that incorporates different methods to achieve effective prediction of heart disease. For our proposed model to be successful, we have used efficient Data Collection, Data Pre-processing and Data Transformation methods to create accurate information for the training model. We have used a UCI Heart Disease dataset. The results are shown separately to provide comparisons. Based on the result analysis, we can conclude that our proposed model produced the highest accuracy while using RFBM and Relief feature selection methods.

INTRODUCTION

Cardiovascular diseases CVD are among the most common serious illnesses affecting human health. The increased rate of cardiovascular diseases with a high mortality rate is causing significant risk and burden to the healthcare systems worldwide. Cardiovascular diseases are more seen in men than in women particularly in middle or old age although there are also children with similar health issues According to data provided by the WHO, one-third of the deaths globally are caused by the heart disease. CVDs cause the death of approximately 17.9 million

Big Data Analytics – A Competitive Advantage of Business

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Abstract:

Most businesses now understand the important value of applying analytics to captured data that streams into their firms. Now-a-days, there are new benefits that big data analytics brings to the table; they are speed and efficiency. While a few years ago, a business firm ran analytics on collected information and uncovered insights that could be used for future decisions; present, insights can be identified for immediate action. This speed and agility give businesses a competitive edge that they did not have earlier. The big data analytics helps firms to make decisions in real time and these trends have the capability to guide a revolutionary transformation in research, invention and business marketing. The study covers the concepts of big data, its importance and impact on selected organizations like Rolls Royce, Starbucks, Delta Airlines business performance and how these firms use the open source platforms to Hardtop, Apache Spark to process data.

Keywords: Big Data Analytics, Competitive Advantage, Performance indicators, operational efficiency, quantifiable tools.

Introduction:

Big Data is a massive amount of data sets that cannot be stored, processed or analyzed using traditional tools. Now-a-days there are millions of data sources that generate data at a very rapid rate. These data sources are present across the world. Some of the largest data sources are social media platforms and networks. For example face book generates more than 500 terabytes of data like images, videos, messages etc every day.

Importance of Big Data Analytics:

Now -a-day's big data analytics has become an essential tool for businesses. By harnessing the power of big data, organizations are able to gain insights into their customers, their business and the world around them that were simply not possible before. The companies can use Big Data Analytics in order to improve business performance in various aspects like:

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IDENTIFICATION OF BLOOD CELL TYPES USING CNN

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ABSTRACT

White blood cells (leukocytes) play an important role in the human body by increasing immunity and fighting infectious diseases. The classification of White Blood Cells is critical in detecting disease in an individual. The classification can also help with the identification of diseases caused by immune system anomalies, such as infections, allergies, anaemia, leukaemia, cancer, and Acquired Immune Deficiency Syndrome (AIDS). This classification will aid haematologists in distinguishing the types of White Blood Cells found in the human body and determining the root cause of diseases. There is currently a lot of research going on in this field. Given the importance of WBC classification, we will use a deep learning technique called Convolution Neural Networks (CNN) to classify images of WBCs into four subtypes: neutrophils, eosinophils, lymphocytes, and monocytes. We will present the results of various experiments performed on the Blood Cell Classification and Detection (BCCD) dataset using CNN in this paper.

I. INTRODUCTION

White blood cells play an important role in the human body's immune system. Blood cells are classified into three types. Red Blood Cells (RBC) transport oxygen, White Blood Cells (WBC) serve as the immune system's front line, and platelets cause blood clotting in damaged tissues. In a healthy adult, white blood cells make up 1% of the blood. They are found throughout the body, and each type of White Blood Cell serves a specific function in the human body by protecting it from various infections and diseases. If they detect any of these elements in the blood, they attack them in order to mitigate any potential harm these elements may cause in the body. . The WBC structure consists primarily of a large lobed nucleus that can be used to distinguish a WBC from other blood cell types. WBC is made up of cytoplasm and a cell wall in addition to a nucleus. In the human body, there are five major types of WBC. Due to data set constraints, we have divided the data into four categories: Basophils (0.4% roughly), Eosinophils (2.3% roughly), Monocytes (5.3% roughly), Lymphocytes (30% roughly), and Neutrophils (62% roughly).

II. LITERATURE SURVEY

2.1 Mathur, A.S. Tripathi, & M. Kuse, M, "Scalable system for classification of white blood cells from Leishman stained blood stain images". Journal of pathology informatic, 2013.

White blood cells (leukocytes) are a very important component of the blood that forms the immune system, which is responsible for fighting foreign elements. The five types of white blood cells include neutrophils, eosinophils, lymphocytes, monocytes, and basophils, where each type constitutes a different proportion and performs specific functions. Being able to classify and, therefore, count these different constituents is critical for assessing the health of patients and infection risks. Generally, laboratory experiments are used for determining the type of a white blood cell. The staining process and manual evaluation of acquired images under the microscope are tedious and subject to human errors. Moreover, a major challenge is the unavailability of training data that cover the morphological variations of white blood cells so that trained classifiers can generalize well. As such, this paper investigates image transformation operations and generative adversarial networks (GAN) for data augmentation and state-of-the-art deep neural networks (i.e., VGG-16, ResNet, and DenseNet) for the classification of white blood cells into the five types. Furthermore, we explore initializing the DNNs' weights randomly or using weights pretrained on the CIFAR-100 dataset. In contrast to other works that require advanced image preprocessing and manual feature extraction before classification, our method works

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A Cloud-Based Methodology for Safely Sharing Personal Health Records

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Abstract: In the health care industry, this has led to the efficient and cost-effective exchange of personal health records (PHRs) among numerous e-Health system participants. In any case, putting away the classified wellbeing information to cloud servers is inclined to disclosure or burglary and request the occasion of philosophies that ensure the protection of the PHRs. As a result, we typically suggest a method known as SeSPHR for the secure cloud sharing of PHRs. The SeSPHR theme ensures that PHR management is patient-centred and protects PHR confidentiality. The encrypted PHRs are stored by the patients on cloud servers that aren't trusted, and the patients choose who can access which parts of the PHRs. A semi-believed intermediary alluded to as Arrangement and Re-encryption Server (SRS) is acquainted with line up the general population/confidential key matches and to supply the re-encryption keys.

Additionally, the approach enforces both forward and reverse access management, making it resistant to threats from business executives. High Level Petri Nets (HLPN) are also used to formalize our analysis and verification of SeSPHR methodology's operation. Execution investigation concerning time utilization shows that the SeSPHR approach has potential to need for solidly sharing the PHRs inside the cloud. conjointly we will generally Execute as a commitment during this paper deadbeat, Secure Reviewing Stockpiling, in Deadbeat PHR Proprietor add the beginning and Finishing time join to transferred Scrambled documents, and conjointly carry out the TPA Module for check the PHR Record its hack or defiled for the other programmer and miscreant in the event that data hack from programmer feature find all framework subtleties of transgressor like Mac Address and data science Address its our commitment in our task.

Keywords: Access control, cloud computing, Personal Health Records, privacy

1.INTRODUCTION

Cloud computing has emerged as an important computing paradigm to offer pervasive and on demand availability of various resources in the form of hardware software infrastructure and storage consequently the cloud computing paradigm facilitates organizations by relieving them form the protected job of infrastructure development and has encouraged them to trust on the third party information technology services additionally the cloud computing model has demonstrated significant potential to

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A Novel Machine Learning Approach for Estimation of Software Defects

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Abstract_ One of the most important components of software is its quality. Software designs are becoming more sophisticated as demand grows, increasing the likelihood of software failures. By repairing flaws, testers help to increase the quality of software. As a result, defect analysis increases software quality dramatically. The project's resources and the effort of the software developers can be allocated more efficiently for system development and quality assurance operations thanks to effective system defect prediction on the front line of the project life cycle. The main goal of this research is to compare seven machine learning algorithms in the context of four NASA datasets collected from the public PROMISE repository [12] in order to evaluate their competence in software defect prediction and determine the best category. Overall, the results of the ensemble learners category in defect prediction, which includes Random Forests (RF) and Bagging, are very similar to their counterparts.

1.INTRODUCTION

The software industry is rapidly evolving as a result of rising demand and technological advancements. Defects will eventually arise because the majority of software development is done by people. Defects are undesired or unacceptable deviations in software documentation, programmes, and data in general [1]. Defects may arise in requirements analysis as a result of the product manager's misinterpretation of the customer's needs, and this error will then be carried over to the system design phase. Inexperienced developers might potentially cause defects in the code. Defects have a substantial impact on software quality, resulting in higher software maintenance costs, particularly in the healthcare industry, and aircraft software defects can have fatal implications. If a bug is discovered after the product has been deployed, the

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DETECTION OF PARKINSON'S DISEASE USING XGBOOST ALGORITHM

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#2 MCA student in the Master of Computer Applications at SRK Institute of Technology, Enikepadu, Vijayawada, NTR District

ABSTRACT:

Parkinson's disease (PD) sufferers are increasing in number alongside the ageing populace. Due to a lack of training and information, PD is often not diagnosed in a timely manner in developing nations. On top of that, not every person with PD experiences the same symptoms, nor do those symptoms always become more noticeable at the same point in time. Thus, the goal of this work is to utilise a cloud-based machine learning system for tele monitoring PD patients in developing countries, combining more than one symptom (rest tremor and voice degradation) to make a diagnosis. Data on rest tremor and vowel phonation are taken from smartphones equipped with accelerometers and fed into the proposed system. For the purposes of developing and refining more effective machine learning models, the data are mainly gathered from individuals who have been identified with PD and from the general population. The accuracy of the taught algorithms in detecting PD is then assessed by collecting data from freshly suspected PD patients. Patients diagnosed with PD are referred to a local physician for evaluation based on the results of these methods.

1. INTRODUCTION

Two to three percent of the over-65 community is affected by Parkinson's disease (PD), making it the second most prevalent neurodegenerative illness after Alzheimer's [1]. Dopaminergic cell death in the substantia nigra is a hallmark of this disorder [2]. Presence of movement signs is required for a determination of PD (bradykinesia, rigidity and tremor at rest [3]). Autopsy and MRI investigations, however, show that movement symptoms of PD only appear when dopaminergic neuron loss has progressed by 50-70%. Clinical evaluation in the area of neurology can be bolstered by a number of different methods. Tests based on images are frequently used, such as single photon emission computed tomography (SPECT) and M-iodobenzyl-guanidine (MIBG) heart scintiscan, but they can be pricey and inconvenient for some patients. Electrical activity of the brain's pyramidal neurons can be recorded non-invasively using electroencephalography (EEG), providing a window into their function that is both indirect and highly time-resolved.

Since it's a simple and inexpensive method, it's been put to good use in the research of epilepsy conditions. Although visual EEG analysis remains the gold standard in the clinical setting, advances in information processing have made it possible to derive additional information

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AGRICULTURE HELPER CHATBOT USING DEEP LEARNING

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ABSTRACT

The Agriculture Helper Chatbot is an intelligent virtual assistant designed to provide support and assistance to farmers in various agricultural tasks. The chatbot utilizes deep learning techniques, including natural language processing (NLP) and computer vision, to deliver accurate and personalized information to farmers.

The objective of the project is to develop a chatbot that can aid farmers in making informed decisions regarding crop selection, disease detection, soil management, and other essential aspects of agriculture. By leveraging deep learning algorithms, the chatbot can process natural language queries from farmers, analyze images of crops or pests, and provide relevant recommendations and solutions.

The chatbot's functionality includes the ability to recommend suitable crop varieties based on soil type, climate conditions, and farmer preferences. It can identify and diagnose crop diseases or pests through image analysis, allowing farmers to take timely action for disease control. Additionally, the chatbot offers guidance on optimal sowing time, seed rate, fertilizer usage, and other agronomic practices. The development process involves collecting and preprocessing agricultural data, including crop information, soil characteristics, weather data, and disease images. Deep learning models such as convolutional neural networks (CNN) and recurrent neural networks (RNN) are employed to train and optimize the chatbot's algorithms. The implementation of the Agriculture Helper Chatbot involves integrating the trained models into a user-friendly interface, allowing farmers to interact with the chatbot through text input or image upload. The system undergoes rigorous testing and evaluation to ensure its accuracy, responsiveness, and reliability in providing useful agricultural insights and recommendations.

The expected outcomes of the project include an efficient and user-friendly chatbot that can assist farmers in making informed decisions, optimizing crop yield, and mitigating risks associated with crop diseases and pests. The Agriculture Helper Chatbot has the potential to enhance agricultural practices, improve productivity, and support sustainable farming methods.

In conclusion, the Agriculture Helper Chatbot using deep learning techniques offers a valuable tool for farmers, empowering them with timely and accurate information for effective crop management.

I. INTRODUCTION

The agriculture sector plays a vital role in the economy, providing food security and livelihood to a significant portion of the population. However, farmers face various challenges in their day-to-day operations, including crop selection, disease detection, soil management, and access to accurate agricultural information. To address these challenges, the Agriculture Helper Chatbot using deep learning techniques is proposed.

The Agriculture Helper Chatbot is an intelligent virtual assistant designed to assist farmers in their agricultural tasks by leveraging the power of deep learning algorithms. It combines natural language processing (NLP) and computer vision to provide personalized recommendations and solutions to farmers' queries and challenges.

The main objective of the project is to develop a user-friendly and efficient chatbot that can deliver accurate and timely agricultural information to farmers. By incorporating deep learning algorithms, the chatbot can understand and analyze natural language queries from farmers, process images of crops or pests, and provide relevant insights and recommendations.

The chatbot offers a range of functionalities to support farmers throughout the crop cultivation cycle. It can recommend suitable crop varieties based on factors such as soil type, climate conditions, and farmer

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Detection of Lung Cancer Using a Conventional Neural Network

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Abstract_ Lung most cancers is the main purpose for cancer-related death. Lung most cancers can provoke in the windpipe, major airway or lungs. It is brought about by way of unchecked increase and unfold of some cells from the lungs. People with lung disorder such as emphysema and preceding chest troubles have greater danger to be identified with lung cancer. Over utilization of tobacco, cigarettes and beedis, are the fundamental chance thing that leads to lung most cancers in Indian men; however, amongst Indian women, smoking is now not so common, which point out that there are different elements which lead to lung cancer. Other danger elements consist of publicity to radon gas, air-pollutions and chemical compounds in the workplace.

Lung most cancers detection at early stage has come to be very vital and additionally very handy with photograph processing and deep getting to know techniques. In this find out about lung affected person Computer Tomography (CT) scan pix are used to discover and classify the lung nodules and to notice the malignancy stage of that nodules. In this challenge we are the usage of CNN algorithm to become aware of Lung most cancers from CT-SCAN pics and to educate CNN we have CT-SCAN photographs dataset.

1.INTRODUCTION

It is most common in smokers accounting 85% of cases among all. So many Computer Aided Diagnosis (CAD) Systems are developed in recent years. Detection of lung cancer at early stage is necessary to prevent deaths and to increase survival rate. Lung nodules are the small masses of tissues which can be

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Detection of Lung Cancer Using a Conventional Neural Network

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CLASSIFICATION OF ONLINE TOXIC COMMENTS USING MACHINE LEARNING ALGORITHM

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ABSTRACT

Toxic Comments are disrespectful, abusive or unreasonable online comments that usually make other users leave a discussion. The danger of online bulling and harassment affects the free flow of thoughts by restricting the dissenting the opinions of people. Now a days we use internet to exchange information, based on the information people leave their opinions through comments. It is need to detect and restrict the antisocial behavior over the online discussion forums. In this we use Machine Learning algorithms to classify online comments. This paper will systematically examine the extent of online harassment and classify the content into labels to examine the toxicity as correctly as possible.

1. INTRODUCTION

Internet is the greatest innovation of 21st century. By using the internet one can communicate with others using smart phones and computers. In earlier days of internet one can used to send emails, we don't know whether it is positive or negative. Example – whether the mail is spam or not. As time changes, the using of internet is increased and its origins are expanded. And one of it is finding the positive and negative in the data. In emails, negative mails are identified and it is sent to the spam. Some methodologies are used to identify whether it is spam or not.

Now a days, many apps are used for information, data is transferred through the internet. Based on the information the users leave their opinions. These opinions are referred as comments. The comments may be positive or negative. By seeing comments people may react either in positive or negative way.By using Machine Learning algorithms we classify the data into toxic and non-toxic comments and find the percentage of toxicity used in the comments.

As for real life examples, an abusive comment is posted in facebook on Mamatha Benarjee. The person is arrested for

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MACHINE LEARNING AND COMPUTER VISION FOR VITICULTURE TECHNOLOGY

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ABSTRACT_This paper gives two contributions to the state-of-the-art for viticulture technology research. First we present a comprehensive review of computer vision, image processing, and machine learning techniques in viticulture. We summarise the latest developments in vision systems and techniques with examples from various representative studies including harvest yield estimation, vineyard management and monitoring, grape disease detection, quality evaluation, and grape phenology. We focus on how computer vision and machine learning techniques can be integrated into current vineyard management and vinification processes to achieve industry relevant outcomes.

The second component of the paper presents the new GrapeCS-ML Database which consists of images of grape varieties at different stages of development together with the corresponding ground truth data (e.g. pH, Brix, etc.) obtained from chemical analysis. One of the objectives of this database is to motivate computer vision and machine learning researchers to develop practical solutions for deployment in smart vineyards. We illustrate the usefulness of the database for a color-based berry detection application for white and red cultivars and give baseline comparisons using various machine learning approaches and color spaces. The paper concludes by highlighting future challenges that need to be addressed prior to successful implementation of this technology in the viticulture industry

1.INTRODUCTION

The domesticated grape is an important fruit crop from an economic perspective and is also one of the oldest with a long history of cultural significance. It is believed that Vitis vinifera has its beginnings in an area between the Black Sea and Caspian Sea but today there are over ten thousand varieties grown across the

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A EXPERT SYSTEM FOR PREDICTING INSULIN DOSAGE USING VARIOUS ML ALGORITHMS

Ms.M.ANITHA[1], Mr. CH. SATYANARAYANA REDDY [2], Ms. K. YAMINI[3]

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ABSTRACT: You can acquire diabetes if your blood glucose, also referred to as blood sugar, is too high. Blood glucose, which is obtained from the food you eat, serves as your body's main energy supply. Long-term metabolic disease is diabetes mellitus. Blood glucose levels (BGLs) should be appropriately adjusted to allow diabetic patients to lead normal lifestyles without running the risk of long-term, serious complications. But for a variety of factors, the majority of diabetic patients have poorly controlled blood glucose levels, which over time seriously harms the heart, blood vessels, eyes, kidneys, and nerves.

However, taking the correct quantity of insulin dosage has the crucial role in the treatment process. Traditional prevention techniques like eating healthy food and exercising are necessary for diabetic patients to control their BGLs. In this study, we predict diabetes using the Gradient Boosting Classifier, and we predict the dosage of insulin for patients who have been identified as having diabetes using the Linear Regression algorithm. We are using the PIMA diabetes dataset and the UCI insulin dosage dataset to carry out this research. With the aforementioned dataset, we are training both algorithms. Once trained, we will upload a test dataset without a class label, and Gradient Boosting will then predict the presence of diabetes while Linear Regression will predict the amount of insulin to administer in the event that diabetes is identified by Gradient Boosting..

1. INTRODUCTION

Diabetes, also referred to as diabetes mellitus, is a group of metabolic illnesses defined by high blood sugar levels brought on by deficiencies in insulin secretion, action, or both. Diabetes is becoming more common in countries with middle- and low-income levels more rapidly. People with diabetes increased from 108 million in 1980 to 422 million in 2014. Globally, the prevalence of diabetes

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Identification of Different Plant Leaf Diseases Detection

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ABSTRACT:

The agricultural sector is crucial to a nation's overall Economy. Trees are crucial to humanity's survival because they provide food and other necessities. Many farms in the world's poorest nations still rely on time-honored physical labor. The state and national economy can take a hit if plant illnesses aren't discovered in time to prevent economic damages for farmers. Background irregularities during picture capture, segmentation, and categorization pose difficulties in illness detection and classification. It is only possible to implement measures of control after an illness has been properly diagnosed based on the signs and traits of that disease. This study provides in-depth talks on the nature of plant illnesses, how to identify and categorize plant diseases, and the role that machine learning and deep learning play in this process. Based on the results of the poll, it seems that despite their popularity, machine learning techniques have not yet achieved widespread usage. For illness detection and categorization, deep learning approaches have proven more effective than conventional ones.

Keywords: Data Analysis, Classification Deep Learning, Disease Detection,

I. INTRODUCTION

A nation's agricultural sector is its economic bedrock. Though many farmers would like to switch to more contemporary farming methods, they often are unable to because of factors such as a dearth of knowledge about the most recent advancements in the field, the high cost of the necessary equipment, etc. [7]. Many image processing apps have seen improved efficiency in recent years thanks to the use of machine learning based methods [43]. The results of AI-based learning apps have proven fruitful. Methods of machine learning [8] teach the computer to learn naturally and better its performance based on its own observations. It has been noted on numerous occasions that the number of plant illnesses varies according to climatic state, making them challenging to manage. Plants are subject to a wide variety of pathogens, including those of the fungus, bacterial, viral, and parasitic varieties. The prevalence of fungal-like creatures on plants has been estimated at 85% [52]. Traditional methods, which farmers in poor countries still use despite their increased labor and time costs, are generally inferior. It's also conceivable that using your own two eyes won't yield any useful results when it comes to unaided identification. It has likewise been noticed that many ranches use

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DISCOVERING THE TYPE 2 DIABETES IN EHR USING THE SB-SVM

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ABSTRACT_The finding of Type 2 diabetes (T2D) at a beginning phase plays a vital part for a sufficient T2D coordinated administration framework and patient's development. The World Health Organization (WHO) reported that the global prevalence of worldwide diabetes is around 9% (more than 400 million people). Recent years have witnessed an increasing amount of available Electronic Health Record (EHR) data for diabetes and Machine Learning (ML) techniques have been considerably evolving.

In particular, among all the EHR features related to exemptions, examination and drug prescriptions we have selected only those collected before T2D diagnosis from a uniform age group of subjects. Overfitting, model interpretability, and computational cost are just a few of the issues that may arise when modeling and managing this amount of data.

As a result, we developed a machine learning technique known as the Sparse Balanced Support Vector Machine (SB-SVM), which achieves the ideal balance between computation time and predictive performance. In addition, the model's interpretability is improved by the induced sparsity, which implicitly manages the high dimensional data and typical unbalanced class distribution.

1. INTRODUCTION

Diabetes is a chronic disease that occurs when the pancreas doesn't produce insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. Hyperglycaemia, or raised blood sugar, is a common effect of uncontrolled diabetes and overtime leads to severe damage to many of the body systems, especially the nerves and the blood cells.

In 2010, it was estimated that 285 million people worldwide (6.4% of adults) had diabetes. That figure is projected to increase to 552 million by 2030. According to the disease's current growth rate, one in ten adults should have diabetes by the year 2040. Additionally, there has been a sharp rise in the prevalence of diabetes in South Korea, where 13.7% of adults there have the disease and nearly a quarter have prediabetes, according to recent studies.

Diabetes frequently goes undiagnosed because those who have it are frequently unaware of their condition or are themselves asymptomatic; nearly a third of diabetic patients are unaware of their condition. The kidneys, heart, nerves, blood vessels, and eyes are just a few of the body systems and organs that suffer severe, long-lasting damage from uncontrolled diabetes. Therefore, early disease detection enables those who are at risk to take preventive action to slow the

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RAISE FUNDS ONLINE FOR MEDICAL EMERGENCIES AND SOCIAL CAUSES

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Abstract_ The proposed application aims to raise funds for medical emergencies through a user-friendly and secure platform. The application will allow individuals to create a profile, provide details about the medical emergency, and share it with their network. Donors can easily browse through various emergencies, select a cause, and make a donation through the application.

The application will also provide updates on the progress of the fundraising, allowing donors to track their contributions and see the impact of their donation. The application will be developed with privacy and security in mind, ensuring that all personal and financial information is kept confidential. The goal of the application is to provide a simple and effective way for people to contribute to medical emergencies and help those in need.

Fraudulent activities related to fundraising for medical emergencies through WhatsApp have unfortunately become quite common in recent times. However, there are several ways to minimize the risks of falling victim to such frauds, and the use of certain applications can be helpful in this regard.

1.INTRODUCTION

In today's interconnected world, online fundraising has become a powerful tool for individuals and organizations to raise funds for various causes, including medical emergencies and social initiatives. Python, a versatile programming language, provides a robust platform for building web applications that facilitate online fundraising efforts. By leveraging Python's web frameworks, database management tools, and payment integration capabilities, you can create a secure and user-friendly system to

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IDENTIFICATION OF BONE DEFORMITIES USING MACHINE LEARNING

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ABSTRACT_ The use of computer-based techniques to locate errors is becoming increasingly common across all industries in today's world. Fast identification and high precision are two of the most important aspects of bone fracture detection. These features are exemplified by a highly sensitive device, which is created by combining innovative methods with efficient use of available resources. A crack in a bone or fracture of the bone is the result of an excessive amount of external force that exceeds the boundaries of what the bone is able to endure. Canny Edge detection is a method of image processing that finds bone fractures by making efficient use of automatic fracture detection and getting over the problem of noise reduction.

It does this by analysing images of broken bones. Edge detection can be accomplished using a variety of approaches, including those developed by Sobel, Canny, Log, Prewitt, and Robert, which are all available in the modern world. However, these processes are made more difficult by significant constraints, such as an inability to carry out research at multiple resolutions, which ultimately results in an inability to recognise minute details during the analysis. Because of their inherent inability to discern between edges and noise elements, the techniques do not perform very well with fuzzy photos. However, they function effectively with high-resolution and high-quality pictures. Another important problem of the techniques is that they operate well with such pictures. The proposed strategy involves using the CNN algorithm to the problem-solving process in order to resolve these challenges. The results of the simulations that were performed indicate that the approach that was proposed is a significantly more effective system for carrying out edge detection on aggregate scales

1.INTRODUCTION

In today's world, medical imaging can be thought of as a branch of science that is rapidly ascending the ranks in the field of healthcare. It helps physicians choose alternatives linked to the type of treatment, in addition to playing a vital part in the classification of diseases and providing better care for patients. The diagnosis and treatment of bone fractures, which impact a vast number of people across all age ranges, are becoming increasingly important in today's contemporary world as a result of the growing number of health concerns that are being raised. It is also a common disadvantage in many countries that have already reached a high level of development, in which the fracture variations are also contributing to an increase in the cut. Fractures can be caused by anything as innocuous as a

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BRAIN STROKE PREDICTION USING MACHINE LEARNING ALGORITHMS

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#3 MCA student in the Department of Computer Applications at SRK Institute of Technology, Enikepadu, Vijayawada, NTR District.

Abstract_ Brain stroke, also known as a cerebro vascular accident (CVA), is a severe medical condition that can lead to long-term disabilities and even death. Early prediction of stroke risk can help healthcare professionals identify individuals who are at a higher risk and provide timely interventions to prevent stroke occurrences.

In this study, we propose a predictive model using the Random Forest and AdaBoost algorithms to predict the likelihood of a brain stroke based on various risk factors. The dataset used for this study consists of anonymized medical records of patients.

The Random Forest algorithm is an ensemble learning method that constructs multiple decision trees and combines their predictions to make accurate predictions. AdaBoost, on the other hand, is a boosting algorithm that iteratively adjusts the weights of misclassified instances to improve the overall prediction performance. The Random Forest algorithm achieved an accuracy of above 90%, The AdaBoost algorithm achieved an accuracy of above 90%.

1.INTRODUCTION

Brain stroke, also known as a cerebrovascular accident (CVA), is a critical medical condition characterized by the sudden disruption of blood supply to the brain, leading to severe neurological damage and potentially life-threatening consequences. Early identification of individuals at a higher risk of stroke is crucial for implementing preventive measures and providing timely interventions to minimize the occurrence and impact of strokes. Most strokes are preventable. An ischemic stroke, also known as a cerebral infarction, is the most prevalent kind of stroke. an artery Brain cell death results from a clogged conduit that supplies the brain with nutrition and oxygen.

Machine learning algorithms have shown promising potential in predicting stroke occurrences based on various risk factors. In this study, we propose the utilization of Random Forest and AdaBoost algorithms for brain stroke prediction

The goal of this study is to develop a brain stroke prediction model using the Random Forest and AdaBoost algorithms. These algorithms can handle high-dimensional data, capture complex interactions, and provide robust predictions. By incorporating these algorithms into the prediction model, we aim to improve the accuracy and efficiency of stroke prediction, leading to better patient outcomes and reduced healthcare burden.

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BRAIN STROKE PREDICTION USING MACHINE LEARNING ALGORITHMS

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Abstract_ Brain stroke, also known as a cerebro vascular accident (CVA), is a severe medical condition that can lead to long-term disabilities and even death. Early prediction of stroke risk can help healthcare professionals identify individuals who are at a higher risk and provide timely interventions to prevent stroke occurrences.

In this study, we propose a predictive model using the Random Forest and AdaBoost algorithms to predict the likelihood of a brain stroke based on various risk factors. The dataset used for this study consists of anonymized medical records of patients.

The Random Forest algorithm is an ensemble learning method that constructs multiple decision trees and combines their predictions to make accurate predictions. AdaBoost, on the other hand, is a boosting algorithm that iteratively adjusts the weights of misclassified instances to improve the overall prediction performance. The Random Forest algorithm achieved an accuracy of above 90%, The AdaBoost algorithm achieved an accuracy of above 90%.

1.INTRODUCTION

Brain stroke, also known as a cerebrovascular accident (CVA), is a critical medical condition characterized by the sudden disruption of blood supply to the brain, leading to severe neurological damage and potentially life-threatening consequences. Early identification of individuals at a higher risk of stroke is crucial for implementing preventive measures and providing timely interventions to minimize the occurrence and impact of strokes. Most strokes are preventable. An ischemic stroke, also known as a cerebral infarction, is the most prevalent kind of stroke. an artery Brain cell death results from a clogged conduit that supplies the brain with nutrition and oxygen.

Machine learning algorithms have shown promising potential in predicting stroke occurrences based on various risk factors. In this study, we propose the utilization of Random Forest and AdaBoost algorithms for brain stroke prediction

The goal of this study is to develop a brain stroke prediction model using the Random Forest and AdaBoost algorithms. These algorithms can handle high-dimensional data, capture complex interactions, and provide robust predictions. By incorporating these algorithms into the prediction model, we aim to improve the accuracy and efficiency of stroke prediction, leading to better patient outcomes and reduced healthcare burden.

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Different Machine Learning Algorithms For Detection Of Grape Leaf Disease

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ABSTRACT_ Having diseases is quite natural in crops due to changing climatic and environmental conditions. Diseases affect the growth and produce of the crops and often difficult to control. To ensure good quality and high production, it is necessary to have accurate disease diagnosis and control actions to prevent them in time. Grape which is widely grown crop in India and it may be affected by different types of diseases on leaf, stem and fruit. Leaf diseases which are the early symptoms caused due to fungi, bacteria and virus. So, there is a need to have an automatic system that can be used to detect the type of diseases and to take appropriate actions. Using image processing and machine learning techniques, we've developed an automated approach for spotting illnesses on grape plants. The grab cut segmentation method is used to separate the leaf (the "Region of Interest") from the backdrop image. Both global thresholding and a semi-supervised methodology are used to further divide the sick area from within the segmented leaf. Machine learning approaches such as Support Vector Machine (SVM), adaboost, and Random Forest tree have been used to extract features from the afflicted part and classify it as healthy, rot, and leaf blight. We were able to improve our testing accuracy to 84% by utilising SVM. It is more efficient than other ml algorithms to use Extension Bagging.

1.INTRODUCTION

Indian Economy is fairly structured on agricultural productiveness of the country. Grape is very industrial fruit of India. It can effortlessly be grown in all tropical, sub-tropical and temperate climatic regions. India has bought special sorts of local weather and soil in specific

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PRECISION AGRICULTURE CROP RECOMMENDATION SYSTEM

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ABSTRACT_Agriculture is the back bone of India. More than 58% people are depending up on the farming. Which is also a major source for the country revenue. Farmers were grow their crops as their child and in a traditional way. Some times they were failed in selecting correct crop to grow in the field. So, Here introducing a remedy to support the farmers to predict the correct crop to grown by the analyzing the soil results such as phosphorous content, nitrogen content, potassium content, temperature, humidity, PH value, rain fall. By studying the above results and suggests a correct crop should be grown. Which is more helpful to farmers to select the correct crop at the correct time. Recommendation of crops is one major domain in precision agriculture. Recommendation of crops is dependent on various parameters. Precision agriculture aims is in identifying these parameters in a site- specific manner in order to resolve issues regarding crop selection. For identifying the best suitable crop for field we use this Crop recommendation system

1.INTRODUCTION

India is one among the oldest countries which is still practicing agriculture. But in recent times the trends in agriculture has drastically evolved due to globalization. Various factors have affected the health of agriculture in India. Many new technologies have been evolved to regain the health. One such technique is precision agriculture. Precision agriculture is budding in India .Precision agriculture is the technology of "site-specific" farming. It has provided us with the advantage of efficient input, output and better decisions regarding farming. Although precision agriculture has delivered better improvements it is still facing certain issues.

There exist many systems which propose the inputs for a particular farming land. Systems propose crops, fertilizers and even farming techniques. Recommendation of crops is one major domain in precision agriculture. Recommendation of crops is dependent on various parameters. Precision agriculture aims in identifying these parameters in a site-specific manner in order to resolve issues regarding crop selection. The "site-specific" technique has improved the results yet there is a need to supervise the results of such systems. Not all precision agriculture systems provide accurate results. But in agriculture it is important that the recommendations made are accurate and precise because incase of errors it may lead to heavy material and capital loss.

Many research works is being carried out, in order to attain an accurate and efficient model for crop prediction. Ensembling is one such technique that is included in such research works. Among these various machine learning techniques that are being used in this field; this paper proposes a system that uses the voting method to build an efficient and accurate model

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A Secure Anti-Collusion Data Sharing Framework for Cloud-Based Dynamic Groups

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ABSTRACT_ Profited from distributed computing, clients can accomplish a successful and affordable methodology for information dividing between bunch individuals in the cloud with the characters of low support and little administration cost. In the interim, here should give security assurances to the sharing information documents since they are rethought. Sadly, due to the frequent membership changes, sharing data while maintaining privacy is still a difficult problem, especially for an untrusted cloud affected by the collusion attack. Besides, for existing plans, the security of key circulation depends on the protected correspondence channel, in any case, to have such channel is major areas of strength for an and is hard for training. In this venture, I propose a protected information sharing plan for dynamic individuals. In the first place, here I propose a safe way for key dispersion with next to no solid correspondence channels, and the clients can safely get their confidential keys. Second, our plan can accomplish fine-grained admittance control, any client in the gathering can involve the source in the cloud and denied clients can't get to the cloud again after they are repudiated. Third, I can shield the plan from arrangement assault, and that implies that denied clients can't get the first information document regardless of whether they scheme with the untrusted cloud. Using the polynomial function, I am able to implement a secure user revocation scheme in our strategy. At last, our plan can accomplish fine proficiency, and that implies past clients need not to refresh their confidential keys for the circumstance either another client participates in the gathering or a client is disavowed from the gathering

1.INTRODUCTION

Data sharing has become an increasingly important topic in the business world. Traditionally defined as a concept in the world of academic research, data sharing as a technology has become highly relevant for businesses of all sizes, whether they need to disseminate data across a large, global organization or need to augment internal data with broader market data to gain better insights. The sharing of data securely in cloud computing is a very crucial method. The information is stored in cloud data centers. To access data from or store data into data centers through the internet, the intruders may attack our data. Users can achieve an effective and economical approach for data sharing among group members in the

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SALES PREDICTION USING MACHINE LEARNING TECHNIQUES

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ABSTRACT

Because online shopping has become such a significant sector in the modern era, traditional retailers have very few opportunities to grow their revenue through increased sales as a result of increased sales. It is feasible to use a calculation that utilizes AI to make forecasts with respect to the sort of items that should be presented during a specific date or month to increment deals generally. A dashboard will be made after the forecast is finished to show which products should have been sold to make a lot of money. This will be done with the goal that the expectation can be approved. An expert's assistance was used in the analysis, and it has been determined how to bill for the sales. In any case, in this dilemma, not every person has the assets important to talk with experts who can help them. Experience is a necessary qualification for sellers. Individuals who have just been working their organizations for two or three years have very little to no experience and are searching for help. A crucial aspect of efficient purchase management is accurately projecting product sales in the future. The unusualness, worldwide degree, and steadily changing nature of the business climate in which organizations should contend are perhaps of the most basic test that organizations should look in this day and age. Modern manufacturers "cannot longer rely only on the cost advantage that they have over their competitors" because customers' expectations regarding pricing and quality are constantly growing. This is due to the fact that customers' expectations are constantly increasing. Forecasting sales is essential for ensuring adequate stock levels for inventory. For businesses in all kinds of industries, it has always been difficult to accurately predict the amount of goods that will be in demand in the future. Quite possibly the general benefit will be placed in danger assuming the products are challenging to acquire or on the other hand in the event that there is an overabundance of merchandise accessible contrasted with how much interest for them.

Keywords: Sales Prediction, Machine Learning Techniques.

I. INTRODUCTION

Sales prediction using machine learning is the process of utilizing data analysis and machine learning algorithms to forecast the future sales performance of a product or service based on historical data. This approach involves analyzing a variety of factors such as customer demographics, product features to build predictive models that can provide accurate sales forecasts.

Machine learning algorithms such as regression analysis, decision trees, and neural networks can be used to identify patterns and relationships between various data points and make predictions about future sales. These models can be trained on historical sales data to accurately predict future sales.

Overall, sales prediction using machine learning is a powerful tool for businesses looking to optimize their sales. By leveraging historical data and machine learning algorithms, businesses can gain valuable insights into their customers' behavior and preferences, allowing them to make informed decisions about their product offerings.

1.1 Objectives

1. Preprocessing methods are employed to convert data into a suitable format for the application of machine learning algorithms, facilitating their effective utilization.
2. The objective is to identify the most appropriate Machine Learning algorithm for the task of sales forecasting.

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MACHINE LEARNING FOR GLUCOMA DETECTI

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ABSTRACT_ Glaucoma is a progressive and irreversible eye condition that can cause a person's vision and overall quality of life to deteriorate over time. In this paper, we develop an automated method for the diagnosis of glaucoma using deep learning (DL) architecture combined with a convolutional neural network. Deep learning systems, like as convolutional neural networks (CNNs), have the ability to infer a hierarchical representation of pictures, which allows them to differentiate between glaucoma patterns and non-glaucoma patterns for the purposes of diagnostic choices. There are a total of six learnt layers inside the DL architecture that has been suggested, including four convolutional layers and two fully-connected layers. In order to further improve the efficacy of glaucoma diagnosis, dropout and data augmentation procedures are implemented. On both the ORIGA and SCES datasets, a significant amount of testing is carried out. The results demonstrate that the area under the curve (AUC) of the receiver operating characteristic curve in glaucoma detection is 0.831 and 0.887 in the two databases, respectively. This is significantly better than the techniques that are considered to be state-of-the-art. The approach has the potential to be utilised for the diagnosis of glaucoma.

1.INTRODUCTION

Glaucoma is one of the most prevalent causes of blindness, and it is anticipated that over 80 million individuals will have the condition by the year 2020 [16]. It is a long-term condition of the eye that weakens or destroys the optic nerve over time, which ultimately results in vision impairment. Glaucoma is known as the "silent thief of sight" because symptoms don't appear until the disease has progressed to a very advanced stage. Glaucoma is a disease that cannot be cured, however the progression of the disease can be slowed down with treatment. It is critical to have reliable imaging tools in order to perform early detection of glaucoma.

One of the most common and important diagnostic techniques for glaucoma today is the digital fundus image. Because it is possible to obtain DFIs in a noninvasive manner that is suitable for large scale screening, DFI has emerged as the preferred modality for large-scale glaucoma screening. This is because glaucoma can cause damage to the optic nerve, which can lead to blindness. An image is analysed by an automated system to determine whether or not it contains any glaucoma warning indicators in order to participate in a screening programme for the eye condition. Ophthalmologists will only review the photos of patients whose eyes appear to have abnormalities once the system identifies them as suspicious.

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MACHINE LEARNING IS USED TO PREDICT THE ENERGY USAGE OF ELECTRIC APPLIANCES

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ABSTRACT_ The energy use of residential buildings has increased recently as a result of the growth in residential construction and the ongoing urbanization of areas. An increase in the buying ofhousehold appliances is a result of the citizens' rising economic status. According to the survey, home appliances like computers, televisions, washing machines, refrigerators, rice cookers, and electric water heaters account for 57% of the energy used in residential structures.The kind and number of home appliances have a significant impact on the indoor environment, including temperature, humidity, and light, which in turn affects how much electricity a home uses.

Hence, by developing appropriate models and utilising various environmental data and electricity consumption data, it is possible to anticipate the energy consumption of household appliances.Intelligent forecasting algorithms are a fundamental component of smart grids and a powerful tool for reducing uncertainty in order to make more cost- and energy-efficient decisions about generation scheduling, system reliability and power optimization, and profitable smart grid operations. Yet, since many crucial tasks of power operators, such load dispatch, rely on the short-term forecast, prediction accuracy in forecasting algorithms is highly desired.

1.INTRODUCTION

A new type of power generation grid called the "smart grid" has emerged, and its main goal is to control and manage electricity in a way that is more prudent, dependable, and intelligent. The most efficient and reliable smart grids are those that include specific automation devices, protective equipment, communication protocols, and most importantly, customer feedback. By reducing the energy gap between supply and demand, these architectures and technologies enable the production and distribution of electricity in a sustainable

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AGE AND GENDER CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORKS

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Abstract_ Automatic age and gender classification has become relevant to an increasing amount of applications, particularly since the rise of social platforms and social media.Nevertheless, performance of existing methods on real-world images is still significantly lacking, especially when compared to the tremendous leaps in performance recently reported for the related task of face recognition.In this paper we show that by learning representations through the use of Open CV, a significant increase in performance can be obtained on these tasks.To this end, we propose a simple convolutional net architecture that can be used even when the amount of learning data is limited.We evaluate our method on the recent Audience benchmark for age and gender estimation and show it to dramatically outperform.

1.INTRODUCTION

Age and gender play fundamental roles in social interactions. Languages reserve different salutations and grammar rules for men or women, and very often different vocabularies are used when addressing elders compared to young people. Despite the basic roles these attributes play in our day-to-day lives, the ability to automatically estimate them accurately and reliably from face images is still far from meeting the needs of commercial applications. This is particularly perplexing when considering recent claims to super-human capabilities in the related task of face recognition.

In this paper we attempt to close the gap between automatic face recognition capabilities and those of age and gender

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Automatic Text Summarization using NLP

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ABSTRACT_ The application of "artificial intelligence" in the field of "natural language processing" (NLP) enables computers and other computerized systems to understand general commands or text in the same format in which humans interact. Natural language processing is a sub field of "artificial intelligence." In this process, "machine learning" is used to offer accuracy and pattern of the identification process in order to increase the efficiency of the interaction process. This is done to improve the user experience.

The summaries generated by these models were put to the test by being compared to a variety of datasets, including the CNN corpus, DUC2000, single and multiple text documents, and others. Long articles are common on websites that cover news, blogs, and consumer reviews, among other types of websites. We have investigated not only these methodologies, but also their tendencies, successes, previous work, and potential future scope in text summarizing, among other areas of study. The majority of the techniques discussed in this article provide either abstractive or extractive summaries of the text documents they are applied to. The abundance of data that is available nowadays has made it very necessary to summaries lengthy texts in order to get the exact quantity of information that is needed from those writings. The majority of the discussion in this study is centered on the structured and semantic techniques to summarizing the text documents that were used. Research has been conducted on a number of articles to investigate the several approaches to text summary that have been tried up to this point.

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DETECTION OF THYROID DISEASE USING MACHINE LEARNING ALGORITHM

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ABSTRACT: Thyroid gland diseases are a critical aspect in medical diagnosis and prognosis, which is a tough concept to grasp in the medical profession. The thyroid gland is one of the most important elements of the human body. Thyroid hormones play an important role in metabolic regulation. Thyroid hormones play a role in the body's ability to regulate metabolism, and both excess and deficiency can be harmful. Machine learning is used to predict illness and to investigate thyroid disease categorization models using hospital datasets. For dealing with dynamic learning tasks like medical diagnosis and prediction, a robust knowledge base constructed and deployed as a hybrid model is needed. It may be able to detect and decrease thyroid activity using basic machine learning algorithms. A support vector machine (SVM) model is commonly used to forecast the likelihood of a thyroid patient. When a patient is at risk for thyroid disease, our system must provide recommendations such as home remedies, warnings, precautions, medicines, and so on.

1. INTRODUCTION

Some of the most cutting- edge operations of machine biology are in medical care. Gathering information for medical complaint prophecy was essential. various intelligent prophecy algorithms are used to find problems with a product or service beforehand on. Although the Medical Information System excels at handling data sets, there are presently no intelligent technologies available for furnishing a prompt prognostic of cases' affections. In the end, machine knowledge algorithms play a significant part in diving delicate andnon-linear challenges throughout the development of the vaccination model. Any complaint prophecy model must bear naming rates from various data sets that may be employed as description in a healthy situation as precisely as doable. A misclassification may lead to a happy case being placed in a bad care setting. It's also of the utmost cardinal significance that any possibility of vaccinating against thyroid complaint be considered. The thyroid gland is a gastrointestinal endocrine gland. It's erected in the mortal neck's lower region, under the Adam's apple, and helps the body store thyroid hormones, which in turn impacts the body's rudimentary

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MACHINE LEARNING FOR HEPATITIS DISEASE DETECTION

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ABSTRACT_ The selection of the most effective instrument for the diagnosis and detection of hepatitis, as well as for the estimation of the remaining life expectancy of patients with hepatitis, is the purpose of this work. An investigation into the similarities and differences between various machine learning techniques and neural networks was carried out for the purpose of this work. The accuracy rate and the mean square error are the two components that make up the performance measure. The classification and prediction methods for diagnosing hepatitis disease were thought to be the Machine Learning (ML) algorithms such as Support Vector Machines (SVM). A cursory investigation into the aforementioned algorithms was carried out in order to see how accurately disease diagnosis may be predicted.

1.INTRODUCTION

Hepatitis B, an illness of the liver that is caused by the hepatitis B virus (HBV), has continued to be a problem in terms of public health around the world [1–3]. The transmission of HBV requires only the exchange of fluids between an infected individual or a viral carrier and a person who is not infected with the virus. Recent research has shown that hepatitis B virus (HBV) is 100 times more contagious than HIV/AIDS and is still the principal cause of liver cancer [4]. There are currently two billion people infected with HBV all over the world [1,3]. HBV has infected one person in every three people. Every year, there are approximately 1.5 million people who become infected, and there are over 300 million people who are chronically sick [1,2]. It is estimated that 820,000 people pass awayevery year as a result of problems related to HBV, which equates to an average of two deaths occurring every minute due to HBV [1,3,5]. Many countries in Africa and Asia are still considered to be high - endemicity areas, with theprevalence of HPV in West Africa estimated to be 8.83% [6]. Despite the significant advancements that have been made in HPV vaccinations, many of these countries are still regarded as high - endemicity areas. In the meanwhile, researchers believe that poor vaccination rates among adults older than 18 are to blame for the high prevalence of the disease in developing nations [7].

People who are infected with HBV require appropriate treatment in order to maintain their health and keep living. Despite the availability of effective preventative vaccines and diagnostic tools, HBV continues to be a substantial threat to

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MACHINE LEARNING PREDICTION OF CUSTOMER LOAN ELIGIBILITY

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ABSTRACT: A very important approach in predictive analytics is used to study the problem of predicting loan defaulters: The data is collected from the Kaggle for studying and prediction. Machine Learning algorithms models have been performed and the different measures of performances are computed. The models are compared on the basis of the performance measures such as sensitivity and specificity. The final results have shown that the model produce different results.

Therefore, by using a machine learning algorithm approach, the right customers to be targeted for granting loan can be easily detected by evaluating their likelihood of default on loan. The model concludes that a bank should not only target the rich customers for granting loan but it should assess the other attributes of a customer as well which play a very important part in credit granting decisions and predicting the loan defaulters.

1.INTRODUCTION

Finance companies deals with all kinds of loans such as house loans, vehicle loans, educational loans, personal loans etc... And has a presence across areas such as cities, towns and village areas. A Customer-first requests for a loan and after that Finance Company validates the customer eligibility for the loan approvel. Details like marital status, gender, education, and number of dependents, Income, Loan Amount, credit history, and others are given in the form to fill up by the applicants.

Therefore, a robust model is built taking those details as input to verify whether an applicant is eligible to apply for loan or not. The target variable here is Applicants "Loan Status" and the other variables are predictors. After building the Machine Learning model a Web Application is to be developed for a user interface that allows the user to see instantly if he/she is eligible to get a loan by entering the given details.

His project has used the information of past customers of various banks to approve loans based on a set of criteria. In order to produce accurate outcomes, the machine learning model is trained on that record. Predicting the customer's loan eligibility is our primary project objective. The Decision tree, Random Forest, and Naive Bayes algorithms are utilized to predict loan eligibility. First, the data are cleaned to prevent the data set from having any missing values.

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PREDICTION OF MENTAL HEALTH USING A CLASSIFICATION ALGORITHM

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ABSTRACT_ A person's mental health reveals their emotional, psychological, and social well-being. It has an impact on how a person thinks, feels, and reacts to a situation. Positive mental health allows people to perform more productively and reach their full potential. Mental health is important at all stages of life, from childhood to adulthood. Stress, social anxiety, depression, obsessive compulsive disorder, substance addiction, workplace challenges, and personality disorders are all variables that contribute to mental health concerns that lead to mental disease. To maintain an acceptable life balance, the onset of mental disease should be determined without errors.. We have collected data from online available datasets. The data has been label encoded for better prediction. The data is being subject to various machine learning techniques to obtain labels. These classified labels will then be used to build a model to predict the mental health of an individual. The accuracy of the algorithm will be analyzed before it is used to build the model. We planned to implement classification algorithms such as Decision Tree, Random Forest and Naive Bayes. Our target population is in the working class i.e people above the age of 18.

1.INTRODUCTION

Many people have psychological issues, and these issues have sparked widespread concern in society, as evidenced by the high number of dropout and suicide incidents in recent years. People can experience psychological issues at any stage of life for a variety of intricate reasons. The protection of one's personal safety can be greatly enhanced by early detection of these psychological issues. Technologies like deep learning, data mining, and big data are advancing quickly and becoming more integrated into people's daily lives as a result of the quick development of fields like computer

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ANDROID MALWARE DETECTION USING GENETIC ALGORITHM BASED OPTIMIZED FEATURE SELECTION AND MACHINE LEARNING

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ABSTRACT_ Android platform due to open source characteristic and Google backing has the largest global market share. Being the world's most popular operating system, it has drawn the attention of cyber criminals operating particularly through wide distribution of malicious applications. This paper proposes an effectual machine-learning based approach for Android Malware Detection making use of evolutionary Genetic algorithm for discriminatory feature selection. Selected features from Genetic algorithm are used to train machine learning classifiers and their capability in identification of Malware before and after feature selection is compared. The experimentation results validate that Genetic algorithm gives most optimized feature subset helping in reduction of feature dimension to less than half of the original feature-set. Classification accuracy of more than 94% is maintained post feature selection for the machine learning based classifiers, while working on much reduced feature dimension, thereby, having a positive impact on computational complexity of learning classifiers.

1.INTRODUCTION

Android Apps are uninhibitedly accessible on Google Play store, the official Android application store just as outsider application stores for clients to download. Because of its open source nature and fame, malware scholars are progressively zeroing in on creating malignant applications for Android working framework. Despite different endeavors by Google Play store to ensure against pernicious applications, they actually discover their approach to mass market and cause mischief to clients by abusing individual data identified with their telephone directory, mail accounts, GPS area data and others for abuse by outsiders or, more than likely assume responsibility for the telephones distantly. Subsequently, there is have to perform malware examination or figuring out of such pernicious applications which present genuine danger to Android stages. Extensively, Android Malware investigation is of two sorts: Static Analysis and Dynamic Analysis. Static investigation essentially includes breaking down the code structure without executing it

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ABSTRACT_ Android platform due to open source characteristic and Google backing has the largest global market share. Being the world's most popular operating system, it has drawn the attention of cyber criminals operating particularly through wide distribution of malicious applications. This paper proposes an effectual machine-learning based approach for Android Malware Detection making use of evolutionary Genetic algorithm for discriminatory feature selection. Selected features from Genetic algorithm are used to train machine learning classifiers and their capability in identification of Malware before and after feature selection is compared. The experimentation results validate that Genetic algorithm gives most optimized feature subset helping in reduction of feature dimension to less than half of the original feature-set. Classification accuracy of more than 94% is maintained post feature selection for the machine learning based classifiers, while working on much reduced feature dimension, thereby, having a positive impact on computational complexity of learning classifiers.

1.INTRODUCTION

Android Apps are uninhibitedly accessible on Google Play store, the official Android application store just as outsider application stores for clients to download. Because of its open source nature and fame, malware scholars are progressively zeroing in on creating malignant applications for Android working framework. Despite different endeavors by Google Play store to ensure against pernicious applications, they actually discover their approach to mass market and cause mischief to clients by abusing individual data identified with their telephone directory, mail accounts, GPS area data and others for abuse by outsiders or, more than likely assume responsibility for the telephones distantly. Subsequently, there is have to perform malware examination or figuring out of such pernicious applications which present genuine danger to Android stages. Extensively, Android Malware investigation is of two sorts: Static Analysis and Dynamic Analysis. Static investigation essentially includes breaking down the code structure without executing it.

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PREDICTION OF EMPLOYEE TURNOVER USING MACHINE LEARNING

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ABSTRACT_ For a variety of reasons, employees are inclined to leave their employers. Companies who fail to retain employees experience a loss in employee productivity, are compelled to hire new workers, experience poorer morale, miss out on sales opportunities, and pay additional costs that could have been avoided if the employees had been retained in the first place. With the aid of machine learning, employee retention can be predicted. Using a decision tree method, numerical experiments are carried out in this study for real and simulated human resources datasets covering firms with small, medium, and big sized employee populations.

Our project uses Decision Tree Models to predict employees in the company and enables the Human Resource (HR) team to take the necessary action to stop them. As a result, it helps Human Resources (HR) minimise a company's loss by using Decision Tree Models to predict employees in the company and allow the HR team to take the necessary action to stop them.

1.INTRODUCTION

Decision Tree algorithms Handle both categorical and continuous data.Their interpretability, and their ability to handle non-linear relationships between variables. The disclosure or departure of an intelligent skill from a field or organisation is referred to as employee retention. Another possibility is retention, which occurs when a member of a population departs. Information about the numbers and/or percentage of employees who leave a sector and are replaced by new hires is provided by employee retention. Employers who want to investigate the causes of employee retention or calculate the cost-to-hire for financial planning may find it useful to calculate employee retention. In this study, we will discuss various retention strategies for such employees and deal with voluntary retention. We will forecast the employee's retention using various machine learning algorithms.

The disclosure or departure of an intelligent skill from a field or organisation is referred to as employee retention. Another possibility is turnover, which occurs when a member of a population departs. Because it costs money to find, hire, and train new employees, high turnover rates can be expensive for businesses. Therefore, it is crucial that businesses address the underlying causes of turnover and put strategies in place to keep their best employees. Information about the

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A G-Cloud-Based Framework for Efficient and Secure Government Healthcare Services

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ABSTRACT_ With the advancement of technology and the confinements of the good old medical services framework, an unplanned structure for social insurance is needed.. We've witnessed a growing interest in and preference for cloud-based software development in the human services sector to manage and meet existing and future demands in social insurance administrations. We propose a cloud-based framework for medical services that is adaptable, safe, efficient, practical, and protected. For the administration EHR framework, we've presented a safe and effective structure in which fine-grained access control is commonly controlled by multi-authority ciphertext property based encryption (CP-ABE), close by many levels of information structure to permit access control arrangements. E-government distributed computing is a major advantage for Saudi Arabia's top officials, who will be able to grow up their social insurance sector through the proposed framework.

INDEX TERMS: Cloud Computing, Electronic Health Record, Security, Attribute-based Encryption, Ciphertext policy, Identity Proofing, Authentication, Authorization

1.INTRODUCTION

It's challenging to provide comprehensive care that includes illness prevention as well as treatment in most Arab countries' healthcare because of a lack of optimal utilisation of available human and material resources. The World Health Organization has reported the frequency of various diseases in Arab countries, including diabetes, hepatitis, and parasitic diseases including histoplasmosis and malaria (WHO). In many cases, recognising health problems early enough allows patients to avoid or reduce the severity of their symptoms. These difficulties include planning, operational, and technical considerations, all of which have an impact. If these difficulties can be overcome, we should expect a significant improvement in health care. It is difficult for medical institutions to keep comprehensive control of their operations and resources since the most cutting-edge software for managing all elements of technical and administrative healthcare is inadequate and underutilised. The performance of these high-end computers does not depend on the storage or software used to store their data. These systems' effectiveness hinges on their capacity to be accepted by a wide range of users, including healthcare practitioners, such as doctors, nurses, and technicians, as well as administrators, who have diverse

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ANALYSIS AND PREDICTION OF SUICIDE ATTEMPT USING MACHINE LEARNING

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ABSTRACT_ Because suicide contributes to many unfortunate global deaths, it is a serious issue that has to be addressed. Fewer than half of the tens of thousands of people who experience depression each year receive treatment that works. Suicidal behaviour can be viewed as a continuum that progresses from suicidal ideation to suicidal attempt to suicide. Depression is one of the factors contributing to suicide attempts. A negative attitude, an intolerance for action, and a general sensation of lethargy are all that depression is. Mental sickness, interest loss, and hopelessness are just a few of the many additional problems that depression can cause. The leading cause of disability worldwide is mental illness. The model in this research is based on the dataset analysis and understanding of numerous factors impacting suicide attempts utilising various visualisations. It is now possible to foresee suicide attempts and respond accordingly thanks to machine learning. Using a number of machine learning techniques, we can classify suicide as either Yes or No.

1.INTRODUCTION

The World Health Organization ranks suicide as the 18th leading cause of death worldwide. Suicide was the tenth leading cause of death in the United States in 2018, accounting for 48,344 deaths. It also contributed to a decline in the average life expectancy. Lastly, the classification task that is the first step in suicide prevention can be thought of as a way to accurately identify people who are at risk of suicide within a certain time frame and allow for preventative intervention. The largest meta-analysis of suicide prediction, on the other hand, looked at 365 studies and found that predictions based on individual risk or protective factors had poor predictive accuracy and showed little change over time.

There are many factors that contributed to this prediction's failure. Most importantly, suicide is uncommon, even among high-risk individuals like those who have been in a psychiatric hospital, making it hard to predict. In addition, suicide is the result of a complex interaction of numerous factors, each of which makes a small but significant contribution, as opposed to a small number of strong, stable predictors. Even more troubling is the fact that many suicide drivers are time-varying. Some, like major depressive episodes, can change slowly, while others, like being intoxicated quickly with alcohol or another substance or feeling rejected after a relationship ends, can change quickly. Prior research typically utilized small samples, examined a limited number of characteristics, quantified at a single time point, and

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SECURING SMART SENSING PRODUCTION SYSTEM

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ABSTRACT The internet of things allows cyber-physical systems such as commercial equipment and operational IT to ship and get hold of records over the internet. Those devices will have sensors to experience the circumstance of the system and file to a centralized server through internet connection. Sometime a few malicious customers may additionally attack or hack such sensors and then alter their facts and these fake facts might be pronounced to centralized server and wrong actions may be taken.

Because of fake facts many nations system and production gadget were given failed and lots of algorithms became evolved to come across attack however most of these algorithms be afflicted by information imbalance one class can also incorporate huge data (for instance normal information and different class like attack can also incorporate few facts which lead to imbalance problem and detection algorithms might also didn't are expecting appropriately). To address facts imbalance, existing algorithms have used OVER and below sampling, which generates new statistics for the fewer elegance, but this method improves accuracy however now not up to the mark

I.INTRODUCTION

INTERNET OF THINGS(IoT) gadgets are an increasing number of included in cyber–bodily structures (CPS), along with in important infrastructure sectors, along with dams and application vegetation. In those settings, IoT gadgets [also referred to as Industrial IoT (IIoT)] are frequently a part of an business manipulate device (ICS), tasked with the dependable operation of the infrastructure. ICS can be extensively defined to encompass supervisory control and information acquisition (SCADA) structures, dispensed manage systems (DCS), and systems that contain programmable good judgment controllers (%) and Modbus protocols.

The connection among ICS or IIoT-based totally systems with public networks, however, increases their assault surfaces and risks of being targeted with the aid of cyber attackers. One high-profile example is the Stuxnet campaign, which reportedly targeted Iranian centrifuges for nuclear enrichment in 2010, causing extreme damage to the system. Some other examples is that of the incident focused on a pump that resulted within the failure of an Illinois water plant in 2011. Black Energy became another campaign that centered Ukraine power grids in 2015, ensuing in a power outage that affected approximately 230 000 humans.

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MACHINE LEARNING FOR WINE QUALITY PREDICTION

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ABSTRACT_ People nowadays strive for a luxurious way of life. They typically display or use the items on a daily basis. Red wine is now widely consumed by the general public, which aids inheart function. Red wine has long been thought to be heart healthy when consumed in moderation. Red wine's alcohol and antioxidants may help prevent coronary artery disease, a condition that leads to heart attacks. As a result, the primary goal of this project is to forecast the quality of red wine based on its various attributes. Datasets for Random Forest are obtained from various sources, and techniques such as Random Forest is used. The results of various performance measures are compared between the training and testing sets, with the best of these techniques predicted based on the training set results.

Red wine quality prediction plays a significant role in the wine industry as it helps winemakers and consumers make informed decisions regarding wine production and selection. This study proposes a machine learning-based approach for predicting red wine quality based on various physicochemical properties. The dataset used in this research consists of a comprehensive collection of red wine samples, including their associated physicochemical attributes and sensory quality ratings.

1.INTRODUCTION

The most popular beverage consumed worldwide is wine, and society values it highly. For consumers and producers to increase profits in the current competitive market, wine quality is always crucial. Testing was traditionally used to determine the quality of wine at the end of production; to getthere, one already invests a lot of time and money. If the quality is poor, various procedures must be implemented from scratch, which is very expensive. It is difficult to determine a quality based on someone's taste because everyone has their own preferences. As technology advanced, manufacturersbegan to rely more and more on various devices for testing during the development process.Numerous databases contain these data (UCL Machine Learning Repository, and Kaggle). This project's goal is to forecast wine quality on a scale of 0 to 10 using a variety of features as inputs. Fixed acidity, volatile acidity, citric acid, residual sugar, chlorides, free sulphur dioxide, total sulphur dioxide, density, pH, sulphates, and alcohol are examples of input variables. Quality is the output variable as well (score between 0 and 10). We only discuss red wine here. One of these values is quality:[3, 4, 5, 6, 7, 8]. The quality improves with increasing value.

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SIGN LANGUAGE RECOGNITION USING CONVOLUTIONAL NEURAL NETWORK

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ABSTRACT_ Chatting to an individual with hearing incapacity is generally a significant test. Gesture based communication has permanently turned into a definitive panacea and is an exceptionally integral asset for people with hearing and discourse incapacity to convey their sentiments and feelings to the world. It simplifies and simplifies the process of integrating them with others. Be that as it may, the development of communication through signing alone, isn't sufficient. This benefit comes with a lot of strings attached. For someone who has never learned the sign language or is familiar with it in another language, the gestures frequently get mixed up and confused.

1.INTRODUCTION

Talk to a man in a language he understands, that goes to his head," as Nelson Mandela also stated[1]. Converse with him in his own language, that goes to his heart", language is without a doubt crucial for human connection and has existed since human civilisation started. It is a medium people use to impart to put themselves out there and grasp ideas of this present reality. Without it, no books, no PDAs and certainly no word I'm composing would have any importance. It is so ingrained in our daily routine that we frequently overlook its significance and take it for granted

Sadly, people with hearing impairment are frequently overlooked and excluded in our rapidly evolving society. They need to battle to raise their thoughts, voice out their perspectives and articulate their thoughts to individuals who are different to them. Gesture based communication, despite the fact that being a mode of correspondence to hard of hearing individuals, actually have no importance when passed on to a non-communication through signing client. Consequently, the communication gap gets wider. To keep this from occurring, we are advancing a communication through signing acknowledgment of an framework.

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MACHINE LEARNING FOR VEHICLE NUMBER PLATE DETECTION

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ABSTRACT_In today's world, day-to-day activities play a significant role in both created and developing nations. Huge amounts of data and creative innovation are affecting many aspects of day-to-day living, and this has mandated specific improvements in data systems be applied to automobiles. The necessity to have different data about automobiles between the reality and the data systems arises from the fact that an independent information system that has no information makes no sense. This will be destroyed by a person's operator, or by any extra features operator that may predict vehicles based on their number plates during a particular situation and reflect it into applied data. In connection with this, various acknowledgment techniques are carried out, and number plate recognition systems are today useful for a variety of resources activity and security applications, such as stopping. The present approach has certain drawbacks, one of which is that we are able to guess the number plate number; but, since the information cannot be cleared, it is difficult to track down a specific individual. Under the current system, it is extremely challenging to recognise the characters

1.INTRODUCTION

Transportation and police can utilise technology that is simple to track based on images and scan the number plates of automobiles since the potential benefits of sophisticated number plate identification of vehicles are enormous. This programme is used by traffic cops, a toll gate, and a checkpoint to monitor people's aggressive behaviour, collect images, and generate compliance. In addition, it is utilised to produce compliance. The acquired photos don't always get saved when using more sophisticated methods of vehicle number plate identification. In order to recognise licence plates for the purpose of this research, we make use of the KNN machine learning approach. Using this strategy and the OpenCV library package, we are able to trace the images of the licence plate numbers.

In the modern world, day-to-day activities are similar in developed and poor countries alike. Massive quantities of data-driven innovation are influencing many facets of day-to-day life, and when data-driven technology are put into practise, this is increasing demand for vehicles. Because it does not make any sense to have an independent information service if there is no data, there is a need to alter the vehicle data between the realities and the data systems. This will be harmed by a

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MACHINE LEARNING FOR VEHICLE NUMBER PLATE DETECTION

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A Novel Application of the CNN GB Technique to a Robust CT Scan Based Brain Diagnosis Process

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ABSTRACT_ There are several analysis strategies are handy for Brain scanning, such as CT, MRI, X-ray and CTA. If Medical purposes are quick and real, then prognosis method is easy; these can assist the patient's life. In this work CT scan-based intelligence analysis gadget is proposed via CNN-GB technique. A actual and correct talent prognosis system offers the higher therapy with environment friendly success rate. Method: In this work the talent abnormalities have been recognized via computing device and deep getting to know mechanisms. CNN and GBML strategies are utilized on CT intelligence photographs for pick out the disorders. In This proposed approach we have achieved 0.9950 accuracy. In this investigation a CT scan-based intelligence analysis utility is designed. This application Got PSNR = 38.18, SSIM is 0.8359, accuracy is 0.9950, error rate is 0.072 have achieved.

Keywords: CT scan; CNN-GB; brain diagnosis; GBML techniques; AMF-CNN; Gradient boosting

1.INTRODUCTION

The Genius tumor of CT scan snap shots can't be recognized if any noise over imposed on object. The CT scan-based Genius tumor detection gadget offers the higher analysis technique [1]. For any clinical photo processing strategies follows the three classes of operation these are pre-processing function extraction and classification. Preprocessing stage is imparting segmentation, transformation, and filtration. In this lookup work adaptive median filtration is taken as pre-processor. CNN and GBML are chosen for classification, function extraction; therefore, getting output is a sickness area of intelligence image. The CT scan is a important imaging tool, which can scan the human talent and giving the analysis disorders. This decision-making manner can assist the speedy and correct sickness identification and classification [11-12]. The current applied sciences giving the hidden records about chosen scientific image. Image sample attention and human interplay are the pc purposes in picture consciousness mechanism. These kinds of

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DETECTION OF INTRUSION MACHINE LEARNING ON BIG DATA ENVIRONMENT SYUSTEM

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ABSTRACT_ Recently, the huge amounts of data and its incremental increase have changed the importance of information security and data analysis systems for Big Data. Intrusion detection system (IDS) is a system that monitors and analyzes data to detect any intrusion in the system or network. High volume, variety and high speed of data generated in the network have made thedata analysis process to detect attacks by traditional techniques very difficult.

Big Data techniques are used in IDS to deal with Big Data for accurate and efficient data analysis process. This was proposed by Random forest model for intrusion detection. In this model, we have used ChiSqSelector for feature selection, and built an intrusion detection model by using Random forest classifier on Apache Spark Big Data platform.

We used KDD99 to train and test the model. In the experiment, we introduced a comparison between Random Forest, Decision Tree, Linear Discriminant Analysis, Logistic Regression. The results of the experiment showed that Random forest model has high performance, reduces the training time and is efficient for Big Data.

1.INTRODUCTION

An Intrusion Detection System (IDS) is a software tool that utilizes various machine learning techniques to identify potential security breaches in a network or system. It safeguards the network from unauthorized access, which can include internal users. The goal of an intrusion detection system is to construct a predictive model (a classifier) that can distinguish between malicious activity (intrusions/attacks) and legitimate connections

2.LITERATURE SURVEY

2.1 Title: Intrusion Detection Classification Model on an Improved k-

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MACHINE LEARNING FRAUD DETECTION FOR INSURANCE CLAIM

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ABSTRACT_ Insurance fraud is an intentional illegal conduct undertaken with the goal of profit. This is currently the most pressing issue for many insurance companies throughout the world. In the majority of cases, the primary issue has been identified as one or more holes in the investigation of false claims.

As a result, there has been an increase in the desire to adopt computer solutions to prevent fraud activities, providing clients with not only a dependable and stable environment, but also dramatically reduced fraud claims.

We demonstrated our findings by automating the examination of insurance claims utilising a range of data methodologies, with the detection of erroneous claims performed automatically using Data Analytics and Machine Learning techniques.

The algorithm might also be able to develop heuristics for fraud warning indications. Because it improves both company reputation and consumer satisfaction, this technique benefits the whole insurance industry.

1.INTRODUCTION

The insurance sector is now embracing efficient fraud control. While some people pay premiums, others defraud businesses in order to receive compensation. Hard insurance fraud and soft insurance fraud are the two main types of fraud.

Hard insurance fraud is described as the deliberate fabrication of an accident. Soft insurance fraud occurs when a person files a legitimate insurance claim but falsifies a portion of it. Both types of fraud have serious repercussions that can include increased insurance costs for everyone as well as criminal charges.

To avoid fraud and preserve the integrity of the insurance system, it is crucial for insurance companies to fully investigate any suspicious claims. Customer satisfaction will increase if a company has a good fraud detection and prevention management system. Loss adjustment costs will go down as a result of the higher satisfaction. There are now numerous methods for identifying fraud claims.

The most popular technique is data analysis using specific instructions. Therefore, they require in-depth investigations that take a lot of time and

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A Lightweight Intrusion Detection System for the Internet of Things Based on Machine Learning

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Abstract_ The Internet of Things (IoT) is particularly susceptible to attacks due to the prevalence of cheap, widely distributed low-powered computing devices. The goal of this study is to strengthen the security of the Internet of Things (IoT) by creating a lightweight intrusion detection system (IDS) based on two machine learning techniques: feature selection and feature classification. The filter-based method was utilised to choose the characteristics because of its minimal computational cost. Our system's feature classification strategy was determined through an analysis of many methods, including naive Bayes (NB), decision tree (DT), random forest (RF), k-nearest neighbour (KNN), support vector machine (SVM), and multilayer perceptron (MLP). Last but not least, the DT technique was picked for our system because of its stellar performance across different datasets. The research results can be used as a benchmark for vetting potential feature selection methods in the field of machine learning.

Keywords:

Internet of Things (IoT), intrusion detection system (IDS), anomaly detection, feature selection

1.INTRODUCTION

Insecure and unfavourable deployment environments are common for IoT devices, making them more vulnerable to a variety of attacks [3]. As a result, security measures are essential for protecting Internet of Things devices from malicious attacks. An Intrusion Detection System (IDS) is a tool for monitoring attacks on a computer or network by analysing the attacker's actions and patterns [4]. It can be used as a secondary defence against potential attackers [5]. An IDS's primary goal is to detect as many attacks as possible with sufficient precision while decreasing power usage within acceptable limits [6]. One can choose between a signature-based IDS or an anomaly-based IDS. When a signature-based IDS, sometimes called a misuse-based IDS, is in place, it is able to spot intrusions by comparing newly gathered data to an existing knowledge base or signatures of known attacks. While this method is effective at finding recognised threats, it is often blind to unknown ones. In order to identify significant outliers, anomaly-based intrusion detection systems compare

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CRYPTO CURRENCY PRICE PREDICTION USING MACHINE LEARNING

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ABSTRACT_ The selection of the most effective instrument for the diagnosis and detection of hepatitis, as well as for the estimation of the remaining life expectancy of patients with hepatitis, is the purpose of this work. An investigation into the similarities and differences between various machine learning techniques and neural networks was carried out for the purpose of this work. The accuracy rate and the mean square error are the two components that make up the performance measure. The classification and prediction methods for diagnosing hepatitis disease were thought to be the Machine Learning (ML) algorithms such as Support Vector Machines (SVM). A cursory investigation into the aforementioned algorithms was carried out in order to see how accurately disease diagnosis may be predicted.

1.INTRODUCTION

Cryptocurrencies have gained significant attention and popularity in recent years as a decentralized form of digital currency. With the rise of cryptocurrencies like Bitcoin, Ethereum, and others, there has been a growing interest in predicting cryptocurrency prices. However, due to the highly volatile and unpredictable nature of the crypto market, accurate price prediction remains a challenging task.

Machine learning algorithms have emerged as powerful tools for analyzing complex and large-scale datasets, making them well-suited for cryptocurrency price prediction. Among these algorithms, Random Forest and Gradient Boosting have shown promising results in various domains and are widely used for regression and classification tasks.

The goal of this research is to explore the application of Random Forest and Gradient Boosting algorithms in predicting cryptocurrency prices. By utilizing historical price data along with relevant features such as trading volume, market capitalization, social media sentiment, and technical indicators, we aim to develop models that can provide insights into future price movements and trends.

The use of ensemble methods like Random Forest and Gradient Boosting offers several advantages. These algorithms are capable of capturing complex relationships and non-linear patterns in the data.

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DETECTION OF BODY MASS INDEX

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ABSTRACT_ Body mass index (BMI) is a measure of a person's mass per area and is an important indicator of weight status. BMI data is used in a variety of contexts, ranging from the health industry to social media applications. Various machine learning techniques have been developed for BMI prediction using only a face image and no information about a person's weight and height.

Making predictions of this nature is a regression problem. In this study, a deep network-based BMI predictor tool is developed and its performance is compared to previous studies' methods. A new data set for validation purposes is also introduced.

Large-scale automation of BMI calculation can be used to analyse various aspects of society and help governments and businesses make better decisions. Previous works have only used geometric facial features, ignoring other information, or a data-driven deep learning-based approach in which the amount of data becomes a bottleneck. We used cutting-edge pre-trained models such as the cv2 library

1.INTRODUCTION

The BMI(Body Mass Index) of any person is a crucial indicator of health. It checks if the person is underweight, normal, overweight, or obese. In the current scenario, health is one of the most neglected factor. Technology which has more benefits also has some drawbacks. It has made humans lazy and thus reduced their physical activity leading to a sedentary lifestyle and a rise in BMI which adversely affects their health and increases the risk of chronic diseases. The more the BMI, the more is the chance of developing cardiovascular and other harmful diseases.

On the other side of the coin, some people have problems like malnutrition and deficiencies. So, BMI can help a person to keep a track record of their health. According to [1], on average, one out of every three adults is obese, which is about 36% of the population, and by the year 2030, an estimated 20% of the global population would be obese. Human faces carry a significant amount of information about a person. Recent studies have shown a strong correlation * These three authors contributed equally to this work between the human face and the BMI of the person.

The people with skinny faces have chances of less BMI and vice versa. Generally, obese people tend to have the middle and lower part of the face wider. It is difficult for the person to calculate BMI if they do not have a measuring tape and weighing machine. Recently there have

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DETECTION OF BODY MASS INDEX

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ABSTRACT_ Body mass index (BMI) is a measure of a person's mass per area and is an important indicator of weight status. BMI data is used in a variety of contexts, ranging from the health industry to social media applications. Various machine learning techniques have been developed for BMI prediction using only a face image and no information about a person's weight and height.

Making predictions of this nature is a regression problem. In this study, a deep network-based BMI predictor tool is developed and its performance is compared to previous studies' methods. A new data set for validation purposes is also introduced.

Large-scale automation of BMI calculation can be used to analyse various aspects of society and help governments and businesses make better decisions. Previous works have only used geometric facial features, ignoring other information, or a data-driven deep learning-based approach in which the amount of data becomes a bottleneck. We used cutting-edge pre-trained models such as the cv2 library

1.INTRODUCTION

The BMI(Body Mass Index) of any person is a crucial indicator of health. It checks if the person is underweight, normal, overweight, or obese. In the current scenario, health is one of the most neglected factor. Technology which has more benefits also has some drawbacks. It has made humans lazy and thus reduced their physical activity leading to a sedentary lifestyle and a rise in BMI which adversely affects their health and increases the risk of chronic diseases. The more the BMI, the more is the chance of developing cardiovascular and other harmful diseases.

On the other side of the coin, some people have problems like malnutrition and deficiencies. So, BMI can help a person to keep a track record of their health. According to [1], on average, one out of every three adults is obese, which is about 36% of the population, and by the year 2030, an estimated 20% of the global population would be obese. Human faces carry a significant amount of information about a person. Recent studies have shown a strong correlation * These three authors contributed equally to this work between the human face and the BMI of the person.

The people with skinny faces have chances of less BMI and vice versa. Generally, obese people tend to have the middle and lower part of the face wider. It is difficult for the person to calculate BMI if they do not have a measuring tape and weighing machine. Recently there have

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ONLINE APPLICATION FOR E-COMMERCE BASED ON BLOCKCHAIN

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Abstract_ To solve this issue, we are migrating the existing E-commerce application to Blockchain. In the existing E-commerce application, all customer and product details are stored and managed on a single centralised server. If this server crashed due to excessive requests or if it was hacked, other customers would not be able to use the services.

Blockchain considers each piece of data to be a block or transaction and associates each block storage with a distinct hash code. It also has built-in functionality for data encryption and immutability (data cannot be altered by unauthorised users).

after which new records are stored. Blockchain will check the hash code of earlier blocks, and if all nodes successfully check their blocks, the data is considered secure.

Another benefit of blockchain is that data is maintained across numerous servers and nodes, so users may still access data even if one node is offline.

1.INTRODUCTION

One of the world's most important industries is e-commerce. Online business stages require huge power and capacity to oversee a lot of information and different administrations. Despite the industry's current superior functioning, blockchain technology offers opportunities for further improvement. E-commerce companies can use blockchain to handle data more effectively. In a blockchain network, the platforms can organizely store information about users, products, orders, deliveries, manufacturers, sellers, and much more. Blockchain is notable for its security includes that give the web based business area additional layers of safety. It encourages peer-to-peer transactions and reduces the number of intermediaries. We get a lot of new features, like faster transactions, fewer chargeback scams, checking customer reviews, and personalized product options. With recognizability, blockchain ensures start to finish item following to the clients. In the end, customers can verify the authenticity of the products and track their orders in real time.

E-commerce is a type of business that uses the internet to conduct sales and purchases. Through the exchange of goods and services between various organizations, it has taken control of numerous commerce industries. Secure websites are used for online payments and financial transactions in e-commerce. In any case, digital money

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E-MAIL SPAM CLASSIFICATION VIA MACHINE LEARNING AND NATURAL LANGUAGE PROCESSING

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ABSTRACT_In today's modern scenario, email has become a dominant form of communication in business sectors and in personal interactions as well. However, along with the increase in the exchange of information via emails, there has also been a significant rise in the amount of unsolicited bulk mail, commonly known as spam.

Spam emails are sent for various reasons, as you mentioned. Some individuals or groups send spam emails with the intention of extracting confidential information from recipients, such as personal details, financial information, or login credentials. Another common reason for spam emails is the promotion of adult content. Spammers may send unsolicited emails containing explicit or adult material, often with the aim of generating traffic to adult websites or other related services.

Additionally, spam emails are frequently used for marketing and advertising purposes. Companies or individuals may send bulk emails to a large number of recipients, promoting their products, services, or events. While some of these marketing emails may be legitimate, many are considered spam due to their unsolicited nature and often aggressive or deceptive tactics.Thus, keeping this mind, it is of paramount importance to build a comprehensive system for Spam Classification based on semantics based text classification using URL based filtering. Various Machine Learning algorithms have been surveyed and the objective is to create a model with high performance and efficiency

1.INTRODUCTION

In this era of globalization, in the 21st century, majority of the correspondence and exchange in all business sectors take place via Emails. In the year 2019, [1] 246 billion emails were exchanged in a day and this figure is expected to grow to 320 billion emails by the year 2021. Out of these, 128.8 billion emails are business emails while 117.7 billion emails were consumer emails. Right from individuals to businesses and firms to even governments, every entity finds email communication to be a quite efficient, professional and effective way of transfer of information.

It is highly possible that the content and body of these mails contain highly confidential information of high value to the entity. For a business, it could be the details of a prospective high profile deal which cannot be leaked to the general public, for an individual, it may contain the banking and account details of him or her, while for the government, information not in the nation's interest may get leaked. Thus, in this scenario it is of utmost importance that all the information exchanged is end to end encrypted.

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Machine Learning Techniques for Detecting Cyber Attacks

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Abstract_ In contrast to the past, advancements in computer and correspondence technology have brought about significant and rapid changes. Although some people, organizations, and governments benefit greatly from the application of new innovations, others work against them. For instance, the safety of important data, the security of stored information platforms, information accessibility, and so on. Dependent upon these issues, computerized dread based persecution is quite possibly of the main issue nowadays. Digital apprehension, which has caused numerous problems for individuals and organizations, has reached a point where other groups, such as criminal organizations, knowledgeable individuals, and digital activists, could compromise open and national security. Thusly, Interruption Location Frameworks (IDS) has been made to avoid advanced attacks.

Keywords: data security, accessibility of information, digital fear, Intrusion Detection Systems.

1.INTRODUCTION

Today, political and commercial entities are increasingly engaging in sophisticated cyberwarfare to damage, disrupt, or censor information content in computer networks. In designing network protocols, there is a need to ensure reliability against intrusions of powerful attackers that can even control a fraction of parties in the network. The controlled parties can launch both passive (e.g., eavesdropping, nonparticipation) and active attacks (e.g., jamming, message dropping, corruption, and forging). Intrusion detection is the process of

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DETECTION OF FAKE JOBS USING MACHINE LEARNING

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ABSTRACT_ The project presents an application that uses categorization techniques based on machine learning to stop fake job advertising online. The results of various classifiers are compared in order to choose the most effective model for detecting job scams. These classifiers are employed to validate fake online postings. It helps in spotting fake job listings amid many other postings.

Single classifiers and ensemble classifiers are the two basic types of classifiers taken into account for the aim of detecting bogus job advertisements. However, experimental results demonstrate that ensemble classifiers outperform single classifiers at identifying fraud.

1.INTRODUCTION

One of the serious issues recently addressed in the area of online recruitment frauds (ORF) is employment scam. Nowadays, many businesses prefer to post their open positions online so that job seekers can access them quickly and easily. However, this intention may be one type of scam by the fraud people because they offer employment to job-seekers in terms of taking money from them. A reputable company may face criticism for false job postings if they compromise their credibility. These fraudulent job post detections attract a lot of interest in developing an automated tool for identifying fake jobs and alerting people to them so they won't apply for them. In order to accomplish this, a machine learning approach is used, which makes use of a number of classification algorithms.

A classification tool separates the fake job postings from a larger collection of job advertisements in this instance and notifies the user. Supervised learning algorithms are initially taken into consideration as

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AN NOEVEL ML FRAMEWORK FOR EFFECTIVE CARDIOVASCULAR DISEASE PREDICTION

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ABSTRACT_ Cardiovascular disorders are regarded as the most dangerous conditions, having the greatest fatality rate worldwide. They have become exceedingly common over time and are now overstretching national healthcare systems. High blood pressure, family history, stress, age, gender, cholesterol, BMI, and an unhealthy lifestyle are all key risk factors for cardiovascular disease. Researchers have proposed numerous ways for early diagnosis based on these criteria. However, due to the intrinsic criticality and life-threatening hazards of cardiovascular disorders, the accuracy of offered procedures and approaches need specific modifications.A Malc add framework is proposed in this study for the effective and precise prediction of cardiovascular disorders. The methodology, in particular, addresses missing values and data imbalances first. As a result, the Feature Importance approach is used to choose features. Finally, for more accurate prediction, an ensemble of Logistic Regression, SVM, Random Forest, Decision Tree, and KNN classifiers is presented. Finally, the comparative study shows that MaLCaDD predictions are more accurate than current state-of-the-art techniques. As a result, MaLCaDD is highly trustworthy and can be used in the actual world for the early detection of cardiovascular disorders.

1.INTRODUCTION

The current era's hectic pace leads to an unhealthy lifestyle that generates anxiety and despair to cope with these conditions, people tend to engage in excessive smoking, drinking, and drug use. All of them are the root causes of many severe diseases, such as cardiovascular disease and cancer According to the World Health Organization (WHO), cardiovascular diseases (CVDs) are the leading cause of death worldwide. CVDs account for over 31% of all fatalities worldwide Early detection of these disorders is critical so that precautionary actions can be implemented before something terrible occurs.Cardiovascular Diseases (CVDs) are a group of conditions that affect the heart or blood vessels. Coronary Heart Disease, Stroke/Transient Ischemic Attack (TIA/ MiniStroke), Peripheral Artery Disease, and Aortic Disease are the four major kinds of CVDs The actual origin of CVDs is still unknown; however, some risk factors for these diseases include high blood pressure, smoking, diabetes, body mass index (BMI), cholesterol, age, family history, and so on. These parameters vary from person to person. Age, gender, stress, and an unhealthy lifestyle are other key factors that contribute to CVDs. The

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NEWS TEXT SUMMARIZATION BASED ON MULTI FEATURE AND FUZZY LOGIC

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ABSTRACT_ Because the amount of data on the Internet is rapidly increasing, automatic text summarization work has become increasingly important in the last 70 years, and automatic text summarization work can extract useful information and knowledge that users require, which can be easily handled by humans and used for a variety of purposes. News text is the type of text that most people are exposed to, especially in their daily lives. This study introduces a new automatic summarization model for news text that is based on fuzzy logic rules, multi-features, and the Genetic algorithm (GA).

To begin, we score each word and extract words that surpass the preset score as keywords; and because news content is a special sort of text, it has many specific characteristics, such as time, place, and characters, these distinctive news aspects can often be extracted directly as keywords. A genetic algorithm weighs sentence features in the second category. A linear combination of these characteristics demonstrates the significance of each statement.

1.INTRODUCTION

Today's people believe that the most potent social media data of explosive growth is the daily news from Web, WeChat, Weibo, and various types of industry data. In the era of big data, a lot of data is produced on the Internet every day. The volume of data is already much larger than existing storage, processing and analysis tools. Web news has emerged as one of the best media for people to use to stay up to date on current events, which are constantly changing.

Especially for some businesses and people who are in great need of information, people do not have enough time to read all the news online while dealing with these massive amounts of news. Consequently, people's attention has recently turned to research on automatic news summaries. It can both alleviate the issue of information overload on the Internet and make it easier for users to understand the information they receive. Automatic news summaries are produced by taking the most important information from a news article and condensing it using algorithms.

The way people read news online could be completely changed by this technology. By giving users a brief summary of the news, technology can help users save time and avoid information overload. It can also make it easier for readers who have trouble reading lengthy articles or complex language to understand the news. Additionally, this technology enables users to have their news personalised based on their reading preferences and interests, resulting in a more customised news experience. Users may become more engaged as a result, and it may also motivate them to follow current events.

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A SYSTEM FOR PREDICTING HEART FAILURE USING MACHINE LEARNING

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ABSTRACT_Heart failure prediction is a critical area of research in healthcare, as early detection and intervention can significantly improve patient outcomes and reduce healthcare costs. Machine learning algorithms have been widely used for heart failure prediction, utilising various features such as patient demographics, medical history, vital signs, and lab results. Heart failure prediction is a challenging task due to the complex and heterogeneous nature of the disease. In this study, we aimed to develop and validate a machine learning model for predicting heart failure in a large population of patients using electronic health records (EHRs).

According to the World Health Organization, 12 million deaths occur yearly due to heart disease. Load of cardiovascular disease is rapidly increasing all over the world in the past few years. Early detection of cardiac diseases can decrease the mortality rate and overall complications. However, it is not possible to monitor patients every day in all cases accurately and consultation with a patient for 24 hours by a doctor is not available since it requires more patience, time and expertise. Our Heart Failure Prediction System is intended to assist patients in recognizing their heart state early and receiving treatment at an earlier stage, allowing them to avoid any serious condition

I.INTRODUCTION

Over 70% of all deaths worldwide are caused by heart disease, more specifically cardiovascular disease (CVDs), which is a leading cause of morbidity and mortality. More than 43% of all fatalities in 2017 were caused by CVD, according to the Global Burden of Disease Study. In high-income countries, unhealthy food, tobacco use, too much sugar, and being overweight or having extra body fat are common risk factors for heart disease. However, the prevalence of chronic diseases is also rising in low- and middle-income nations. Between 2010 and 2015, it is predicted that CVDs will cost the global economy about USD 3.7 trillion.

Additionally, some consumers cannot afford or use certain technologies, such as electrocardiograms and CT scans, which are essential for diagnosing coronary heart disease. 17 million people have died as a result of the aforementioned reason alone. Employees with cardiovascular disease were responsible for 25–35% of a company's annual medical costs. In order to reduce the financial and physical costs of heart disease for individuals, institutions, and society as a whole, early detection is crucial. By 2030, the WHO

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BIKE SHARING DEMAND ANALYSIS USING MACHINE LEARNING

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ABSTRACT_ Bike sharing systems are a new generation of traditional businesses in which the entire membership, rental, and return process is automated. These systems enable users to instantly borrow and return a bike from one location to another. There are currently over 500 bike-sharing systems worldwide, with over 500 thousand bicycles. Because of their relevance in transportation, the environment, and health, these systems are gaining a lot of attention nowadays.

Aside from the exciting real-world applications of bike sharing systems, the data aspects that these networks supply make them appealing for the reach. Unlike other types of travel like as the bus or tube, the duration of the trip, departure time, and vel location are all clearly stated in these systems. This function turns the bike sharing system into a virtual sensor network that can monitor motion in the city. As a result, most significant happenings in the city are expected to be detected by watching this data.

1.INTRODUCTION

By using a network of kiosk locations spread throughout a city, bike sharing systems enable the automated rental, return, and membership of . These systems allow users to rent a bike from one location and drop it off at a different location as needed. There are currently more than 500 bike-sharing programmes operating worldwide. Bike-sharing programmes are becoming more and more well-liked as a practical and environmentally friendly form of transportation. They are especially helpful in urban areas where parking shortages and traffic congestion can be issues.

Recently, several bike/scooter rides sharing services have launched, particularly in major cities like San Francisco, New York, Chicago, and Los Angeles. From a business perspective, one of the most challenging issues is to forecast the demand for bikes on any given day. While having too many bikes wastes

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PREDICTION OF FIRST INNINGS SCORE USING MACHINE LEARNING

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ABSTRACT_ Cricket is an outdoor game played by two teams, each with 11 players. Of the two teams, one bowls and fields while the other bats. Cricket is played in many different formats, including Test cricket, ODI (One Day Internationals), and T-20 cricket. The verdict in the five-day Test cricket format might be Win, Lose, or Draw.T20 cricket is quite popular in modern times because of the short playing period and quick decisions. One of the most crucial cricket events is the score prediction. The chasing team gets ready as soon as the score projection is complete. To get the anticipated score for the first inning, we employ ML algorithms. In the current study, we utilized XGBoost to develop models, produce several graphs, and identify mistakes in order to assess our models. We have examined the model after constructing it by looking for mistakes. To predict the first innings score in a cricket match, a machine learning model canbe developedusing supervised learning techniques. The model would be trained on historicalcricket match data, considering various features such as venue, team batting and bowling averages, player statistics, pitch conditions, and match format (e.g., Test, One-Day International, Twenty20). The aim is to learn the relationships between these features and the corresponding first innings scores.

1.INTRODUCTION

Cricket is not only a sport but also a religion in India. Cricket is a ball and bat game that is played outside. This sport is thought to have become popular in the 19th and 20th centuries after becoming popular in England at the end of the 16th century. It was declared the national sport ofEngland in the 18th century. Cricket was introduced to India by the English in the early 1700s. India founded the first cricket club in 1848. Following that, the Europeans eventually requested a match from the Pars. There are many different types of cricket, such as test cricket, which is currently played over 90 over each day for five days. This type of cricket requires a lot of time because the game lasts all day. One Day Internationals, or cricket played over 50 overs, is the next most popular cricket format. In this format, 50 overs are played by each teamover the courseof one day. The most widely played type of cricket today is T-20 cricket. This form evaluates cricket in less than a day. Almost four hours will have passed.

Many nations have established their own cricket leagues as a result of T-20's,

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Machinability of AA7068/TiC metal matrix composites

Syed Altaf Hussain ✉; A. Stanly Kumar; D. Rognatha Rao; Ankita Tiwari; Sk. Mohammad Shareef

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Machinability of AA7068/TiC Metal Matrix Composites

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Abstract. Metal matrix composites are widely used in number of engineering applications due to its improved qualities over the conventional materials. This paper aims in optimization of machining responses like surface roughness (R_a), cutting force (F_z), in turning of AA7068/TiC MMCs using particle swarm optimization technique. The control parameters aken into account are wt. % of TiC, cutting speed (V), feed rate (f), depth of cut (d). Experiments were designed and carried out using central composite design (CCD) in design of experiments (DOE) on a lathe machine with three different types of cutting tool inserts viz. KC5410, KCP05, and K30. Quadratic predictive model was developed for the machining responses and their adequacy has been check through ANOVA.

Keywords: - Machining; Surface roughness; Material Removal Rate; Specific Energy Consumption; Particle Swarm Optimization.

INTRODUCTION

MMCs are widely used in variety of engineering applications because of its better characteristics over the conventional materials. One of composites' greatest advantages, and the most compelling reason for using them instead of traditional materials, is their flexibility to be tailored for specific applications. Even if composites were produced to a near net shape, machining is one of the most economically viable procedures in the manufacturing industry [1, 2]. The machining process's economic goal is dependent on the optimization of control parameters in order to meet high quality standards [3].

The problem faced by the industries in present days is to introduce a product with better quality and at chapter rate. However, this can be done by minimizing the production cost.

This PSO algorithm is a computational algorithm and meta heuristic method. When comparing with other computational methods, PSO operation is very simple, case to apply and short time consuming hence, many researchers have used PSO algorithm.

Sarah et al. [4] have optimized the input parameters using PSO in the pulp industry to reduce the resources usage and scrap of paper. Experimental results were compared with the both GA and PSO results. PSO shows the best performance with respect to time accuracy than GA. Ganesan et al. [5] did experiments on CNC turning to reduce the production time. To optimize the machining parameters by using GA and PSO for continuous profil. By using PSO technique it can be further reduction in machining time.

Lee and Ponnambalam [6] worked on PSO and GA to optimize the input parameters of turning process. Both of the methods show same trend in pareto optimization fronts but PSO gives the result with less time than GA.

Ravi Sankar et al. [7] made a comparison between mathematical efficiency and effectiveness of PSO and GA by a formal hypothesis testing approach. The attempts to made of significance for future development of PSO. The result gives that PSO shows more efficiency than GA while solving unconstrained nonlinear problems with continuous variables.

The identification of the best cutting parameters is an optimization problem and is that is typically solved using optimization techniques. ANN [8, GP [9], simulated annealing [10], GA [11], PSO [12], and other methods are among

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Effect of Two-Step Ball Milling on Microstructure and Mechanical Properties of Al4032/Bimodal-B_4C Composites

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G. Arumugam, S. Saravanan, S. Mohamed Iqbal & P. Kishorekumar

Abstract

Al4032/Bimodal-B_4C composites were synthesized via different milling methods, namely low speed ball milling (SLBM), high speed ball milling (SHBM) and two speed ball milling (TSBM). The Al4032 powder particles were shifted to flakes and some agglomerated B_4C were slowly dispersed in flakes during SLBM. SHBM generated severe cold welding of Al4032 flakes and stronger collision, resulting in agglomerated zones within the Al matrix grain. While, TSBM processed samples showed the well coordination of bimodal B_4C

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