Machine Learning-Based Melanoma Skin Cancer Detection

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Abstract Skin cancer is the most commonprevalent and serious form of cancer in humans, with melanoma being a particularly deadly type. Early detection of melanoma is crucial for successful treatment. However, the standard biopsy method for diagnosis is painful and time-consuming. To address this issue, a computer-aided detection system using methods for Support Vector Machine (SVM) and image processing has been developed for the detection of melanoma at an early stage. This involves taking an affected skin image and subjecting it to pre-processing techniques, segmentation combining thresholding andmorphological techniques, and capturing key aspects of texture, color, and form, including using the GLCM (Gray Level Co-occurrence Matrix) texturing approach feature extraction. These extracted features are then fed into the SVM classifier, which categorizes the image as Melanomas may be cancerous or benign. By combining and applying the shape, color, and GLCM features, ahigh level classifier accuracy rate 83% is attained.

Keywords - SVM, segmentation, GLCM, and melanoma

I. INTRODUCTION

The skin is the body's most crucial organ, serving to safeguard the internal organs, bones, and muscles underneath from injury. One of the most significant roles of the skin is protecting the body from harmful UV Fair-skinned people are more vulnerable to skin damage from UV radiation than dark-skinned people. radiation from the sun, which can damage DNA in skin cells and lead to skin-related diseases and skin cancers. Skin cells contain melanin, which helps protect the skin from UV radiation, but fair-skinned individuals are more susceptible to skin damage from UV radiation than those with dark skin due to lower melanin levels.

As a result, fair-skinned individuals are more frequently diagnosed with melanoma, the deadliest type of skin cancer, which can be classified into malignant and benign forms. The prevalence of malignant melanoma is just 4% of the population., it is responsible for 75% of melanoma cancer deaths. Early detection of melanoma is critical for successful treatment and can save lives. However, if melanoma is not detected early, it can penetrate deep into the skin, making treatment more difficult. Melanocytes are present in the body and primary cause of melanoma. The biopsy technique is the official procedure for detecting skin cancer, which involves extracting a piece of tissue from the body and sending it to a laboratory for testing. This process is complex, painful, and time-consuming, and carries a risk of spreading the disease to other parts of the body.

Researchers have proposed various detection techniques for melanoma, including segmentation, feature extraction, classification, and pre-processing are the four primary steps. Segmentation is used to isolate the lesion from the skin to obtain the region of interest, while the GLCM methodology has been widely used for

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A REVIEW PAPER ON KNEE-OSTEOARTHRITIS DETECTION OF X-RAYS USING CONVOLUTION NEURAL NETWORK

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Abstract

The most prevalent musculoskeletal condition that affects older people's mobility is osteoarthritis (OA). Using a five-point scale and the Kellgren and Lawerence (KL) approach, the clinical severity of knee osteoarthritis is evaluated. The initial work consisted of creating flat classifiers with several manually created functions to prepare the automatic grade prediction KL from X-ray images. Discriminatory learning qualities, however, can be challenging to implement, particularly for complicated properties data like X-rays, which are frequently used to identify knee osteoarthritis. Also, the United States uses a unique YOLOv2 Model to identify two knee joints on X-ray images. We also think that an accuracy rating, such as mean square error, is better appropriate for automatically predicting the severity of knee osteoarthritis.

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A Review: Online Mobile Price Range Prediction Using Machine Learning

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Abstract: The most frequently purchased item today is typically a mobile phone, which has become a common commodity. Every year, thousands of different mobile phone models with new features, specifications, and designs are released. So, determining the mobile's actual pricing and estimating its position in the market are crucial for effective marketing and a product's successful launch. Mobile device prices have an impact on both how well it is marketed and how well it is received by its rivals. In addition to the available standards and desired designs, financial stability is crucial for market survival. Customers typically check whether they can buy the specified item at the projected price or not. So, before releasing the mobile device, estimating the pricing is crucial, as is learning about the market and competition. In this paper, supervised machine learning is used to suggest a mobile pricing prediction system. The primary purpose of this research is to forecast "Whether a mobile with certain features will be inexpensive or expensive." The actual dataset was created with the help of online resources. Multiple linear regression employs a number of independent variables, but there is only one dependent variable whose actual and predicted values are compared to determine the accuracy of the results. Predictions were made using a variety of methodologies, including multiple linear regression analysis, k-nearest neighbours, naive bayes, and decision trees. The projections are then compared and assessed to see which ones offer the best results. The performance of the four approaches was equivalent. We hope to do so in the future. *Keywords: Machine Learning, Data Collection, KNN, Data Visualization, Data preprocessing.*

primary worry is "whether the mobile can be in affordable way to buy something with the circumstances offered or not." As a result, the research's primary purpose is to determine home pricing. circumstances offered or not." As a result, the primary goal of the research is to determine home pricing. The path to the aforementioned aim starts with this paper. Artificial intelligence, or a computer's ability to respond intelligently to queries, is already a rather wide branch of engineering. Having the access to the most recent artificial intelligence techniques, such as classification techniques,data visualition techniques and preproceesing process,tools available, including MAT LAB, Python, Cygwin, WEKA, and others. Each item's genuine cost can be ascertained using the same process, including vehicles, motorcycles, generators, motors, food, medications, and more. For example, one of the most important programs for figuring out mobile costs is Mobile Processor. In the busy world we live in today, battery life is extremely crucial. While choosing a mobile device, it's also important totake its size and thickness into account. Video consistency, camera pixels, and internal memory all need to be remembered. One of themost significant technological limitations of the twenty-first century is internet browsing. The size of the mobile device also affects the list of available functionalities Hence, using all of the aforementioned factors, we'll determine if the mobile will be very expensive, affordable, expensive and exceedingly expensive.

I. INTRODUCTION

Price is one of the marketing and commercial attribute that has the most impact. The first question the consumer asks is how much the things cost. The main issue of any consumer is "whether he can buy something with the circumstances offered or not." As a result, the main objective of the research is to calculate home pricing. The route to the aforementioned goal only begins with this paper. Artificial intelligence, or a computer's capacity for intelligent response to queries, is now a fairly vast field of engineering. We have access to the most recent artificial intelligence techniques. access to the most latest artificial intelligence techniques Price is the most influential marketing and commercial attribute. The consumer's initial question is how much the things cost. Each consumer's

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Prathibhimba - Testing Platform for Alva's Placement Activities

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Abstract

There are several testing platforms available. We have an improved version of this with specific features that not only help institutions see student progress, but also show students where they are doing well and where they need to improve. A student learning outcome is a relatively broad statement of the intended overall outcome of an educational program. It can include a variety of assessments such as formative, summative, and placement-based. It can also include competitions for students to create a competitive environment. We are developing a portal to help students identify their performance and where they can improve, as well as detailed solutions to the various questions. The questions will be based on the needs of the examiners and will include a database of different questions from the practicum and semester to assist the examiners. The instruments used for assessment will vary by discipline. The appendix provides additional information on instruments commonly used at the college level. Assessment plans should include the proper details of the assessment, how it is used, and whether there are benchmarking points. Examples of the instruments used should be included with the completed template. Our proposed platform is the assessment platform where all students can participate in the assessments at the specified time. The assessment time is based on the number of questions they participate in or is set by the assessors. After the specified time has elapsed, students will receive the result of their exam. Along with the exam result, the main answers to all the questions in the exam are also displayed. We can also check how many exams were attended by the students and what grades they received.

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16

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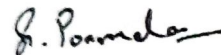
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NEXT WORD PREDICTION USING N-GRAM.

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Abstract— One of the most effective methods for improving conversation is to anticipate the word that will be chosen next. Socializing has gotten much simpler thanks to the development of mobile technologies and the widespread use of the internet. People use their mobile devices for a growing number of activities, including email, social networking, banking, and other things, all over the globe. It's critical to type as rapidly as you can because this conversation moves at such a rapid clip. This calls for the use of a predictive text application. Text prediction is one of the most widely used strategies for quickening communication. However, it's also important to consider how quickly text is expected in this scenario. The objective of this work is to develop a new word predictor algorithm that recommends words that are grammatically more suitable, with less strain on the system, and significantly lowers the number of keystrokes required by users. The predictor uses a probabilistic language model based on the N-Grams method as its text prediction tool.

Keywords—n-gram,tokenization,corpus,uni-gram,bi-gram,tri-gram,natural language processer.

I. INTRODUCTION

NLP is a crucial component of artificial intelligence, which also includes machine learning, and it helps computers converse with people effectively and learn from their interactions. In an effort to speed up message delivery by allowing the user to choose a suggested word rather than having to type it, one such addition is to show mobile users predicted "next words" as they type along in apps like WhatsApp. Mobile devices have evolved into indispensable daily partners for socializing, playing, and conducting business at home and at work. Text entry can be difficult on touch screen devices in especially because they lack a full-size keyboard. Automated text prediction tries to solve this by predicting the next word from entered text. Mobile devices have evolved into indispensable daily companions for socializing, playing games, and conducting business at home and at the workplace. Text input can be difficult on touch screen devices because they lack a full-sized keypad.

Automated text prediction makes an effort to address this by foretelling words from entered text. The project's main objective is to create a predictive model of English writing. So a model forecasts the following word when someone types two words.

II. LITERATURE REVIEW

Anticipating the next phrase has been a critical tool for better communication for more than a decade. Traditional algorithms using word frequency lists completed the words that the user had already written out. In recent years, however, more sophisticated predictive techniques based on the words before them or syntactic rules have emerged. Using more sophisticated forecasting methods, higher rates can be saved. Despite the fact that several researchers have found that the increased cognitive load associated with word prediction may have an effect on quick communication, recent research has shown that more accurate predictions can compensate more than these loads.

[1] The objective of this study is to imitate human word choice behavior in a model of natural language processing. Three different sources—blogs, news, and tweets—provide the algorithm with the data it needs to be trained and tested. The total amount of info is approximately 556 MB. The suggested system's architecture is composed of three sections. In the first section, the data sources are cleansed. The second portion describes how to use the training corpus to generate prediction tables for the N-Grams model, and the third section describes how to use the test data to assess the model's accuracy. This was created by Jaysidh Dumbali and Nagaraja Rao A.

[2] The basic n-gram model forecasts the subsequent word using the n-grams of one to four words. The first task is to generate n-grams and frequencies from the sampled "training" collection. When the sample dataset is big, the generation of n-grams takes more time and memory, especially when n > 2. Instead of processing the complete sample at once, the n-gram generation algorithm will process the files in 1,000-line chunks, build n-gram frequencies,

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Detection of Adulteration in Fruits Using Machine Learning

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Abstract— Summary - food is necessary for life. The food we use must be clean, nutritious and without additives to maintain human health. This paper develops an IoT-based detection of food and formalin technology identify formalin using machine learning methods. A volatile compound HCHO gas sensor connected to a Raspberry pi3 was used to extract the formalin content of any fruit or vegetable as a function of output voltage, and various machine learning algorithms were used to classify the fruit or vegetable based on the extract. characteristics. Our system includes supervised machine learning algorithms which accurately predict the correct concentration of formalin at all temperatures. which can also be correctly classified between artificially added and naturally formed form.

Index Terms - Adulteration, Formalin, Naturally Occurring Formalin, Formaldehyde, Machine Learning, Internet of Things, HCHO Gas Sensor, Raspberry Pi3, Supervised Machine Learning Algorithms. *Index Terms—Component, formatting, style, styling, insert.*

I. INTRODUCTION

The consumption of any food is for the nutrition it provides. As food goes through the successive during production. processing and finally marketing, the nutrients contained in the food are broken down. The concept of adulteration is widely used to improve the composition, shelf life and appearance of food. The nature or quality of food deteriorates when degrading substances are added or any essential substance is removed during food adulteration. Degradants can foreign or non-standard chemical substances contained in the food that damage the food. Food adulteration involves the intentional addition of small amounts of non-nutritive substances to improve the appearance or shelf life of the food.

Most fruits and vegetables are adulterated with a harmful chemical called formalin. Formalin is a colorless aqueous solution of formaldehyde for preservation of biological specimens. This chemical is used to prevent corpses from decomposing. This function is used for decomposition. Not all cases of adultery lead to serious health problems. However, the chemical is very toxic and 30 ml of formalin containing 37 percent formaldehyde can kill an adult [7]. Merchants use formalin as a preservative for treatment fruity appearance and vegetables and keep them longer. SEM secretary Abdus Sobhan found in a survey where 115 samples of mangoes and other fruits were collected from more than 50 organic shops. stores and allows formalin-treated chemical-free fruit. Consuming any fruit substance is for the nutrition, nutrition and minerals of the fruit. Because the crop object was collapsed by prefab, adjustment and closing areas. The idea of adulteration is used to keep fruits healthy for their appearance. Besides, he's used to it Keep fruit or vegetables nice and storable. Fruit adulteration can reduce the fruit by adding crumbles or using ingredient removal. The chemical in the fruit may be foreign or worse. Non-nutritive elements can be added in small doses to improve the shelf life and brightness of the fruit.

All components of fruits are consumed for sustenance. Nutritional value of fruits fell because the grain went through several stages of production, processing and distribution. Adulteration is a term often used to improve the texture, shelf life and appearance of fruit products. Fruit adulteration is the alteration of the character or quality of a fruit by adding or removing essential parts. One of them could be a foreign or inferior chemical in the fruit an adulterer During adulteration, small amounts of non-nutritive chemicals are intentionally added to fruit to improve the appearance or shelf life of the fruit.

India is a country based on agriculture. India produces a wide variety of fruits and vegetables. In terms of fruits, India is second only to China. All pre-harvest and post-harvest operations are done manually in India. The agricultural sector requires manual automation, which takes a long time and is inefficient. The fruits are sorted and graded in the post-harvest process. Fruits are sorted and graded according to several quality parameters. Both internal and external quality criteria are applied to these variables. Internal quality criteria are taste, sweetness, flavor, aroma, foods from fruits and carbohydrates. Quality indicators of the external surface are structure, shape, color, size and volume. Modified algorithms such as YOLOv3 with better accuracy than YOLOv2 and VGG16 method under Convolutional neural network algorithm were added to correctly predict formalin concentration at all temperatures in our system.

A chemical called formalin is harmful to fake fruits and vegetables. Formalin is a colorless aqueous solution of

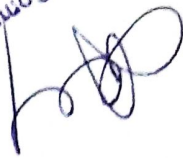Prerana Educational & Social Trust ®

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EXAM CELL AUTOMATION SYSTEM

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Abstract

The exam cell activities require a lot of paperwork and manual work. The main aim of the system is to automate exam cell activities. Exam cell activity includes a lot of manual calculations. The project objective to bring in a focus system which can be usefully managed. This system allows students to sign on into the system by registering like by their Enrollment number, Name, email, examination, semester, Password, Father name, Mother name, Address, Gender etc. The exam cell Automated System is improve for the institute to reduce the work load of the Staff and Students. It help to access approach the examination details of a every student in a respective department. The student details is stored in numerical order, which will be hand over by the teacher for a particular student.
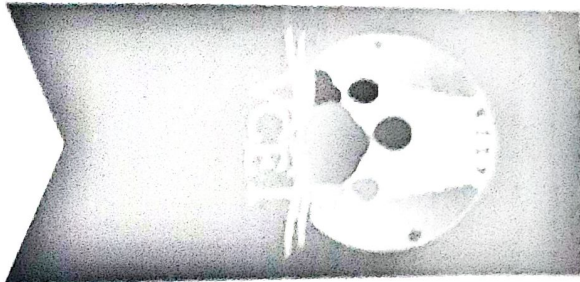
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MONOCHROMATIC TO RGB IMAGE USING DEEP LEARNING

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Abstract—In this paper, investigate the use of deep learning techniques for monochromatic to RGB conversion. Our goal is to develop a model that can effectively infer color information from gray-scale images, enabling more accurate colorization of historical and archival photos. We use a convolution neural network (CNN) architecture that is trained on a large data set of color images and their corresponding gray-scale versions. The model is evaluated on a separate test set and achieves high accuracy in colorization, with results that are comparable to state-of-the-art methods. We start by prepossessing the data set of images and dividing it into training and testing sets. We then design and train our CNN model using the TensorFlow framework. The model architecture consists of multiple convolution layers with ReLU activation functions, followed by batch normalization and max pooling layers. The final output layer uses a soft-max activation function to output the predicted RGB values for each pixel in the input gray-scale image. We evaluate the performance of our model using several metrics, including peak signal-to-noise ratio (PSNR) and structural similarity index (SSIM). Our results demonstrate that the proposed model achieves high accuracy in colorization, outperforming baseline methods such as bi-linear interpolation and k-nearest neighbor interpolation. Our findings suggest that deep learning techniques have significant potential for improving the quality and efficiency of monochromatic to RGB conversion, and could have important applications in fields such as photography, digital imaging, and art restoration.

Index Terms—CNN, RoLU, SSIM, PSNR

I. INTRODUCTION

The paper on "Monochromatic to RGB using Deep Learning" aims to address the challenge of converting monochromatic images into their corresponding RGB counterparts. We leveraged Convolution Neural Networks (CNN) - a powerful deep learning architecture that can learn and recognize complex patterns in images - to develop a model that can accurately predict the RGB values for each pixel in a monochromatic image. The model was trained on a large data set of monochromatic and RGB images, and we used various techniques to improve its accuracy, such as data augmentation, regularization, and fine-tuning. The results of our project demonstrate the effectiveness of deep learning in colorizing monochromatic images, which has numerous applications in fields such as image processing, computer vision, and photography. Project was motivated by the fact that many historical and artistic images are monochromatic, and colorizing them can provide valuable insights into the past and enrich our cultural heritage. However, manual colorization can be a time-consuming and labor-intensive process, requiring expert knowledge and skills. This approach offers a faster and more automated solution, making it accessible to a wider range of users. We conducted extensive experiments to evaluate the performance of our model, including testing it on a variety of monochromatic images with different levels of complexity and noise. The results showed that our model outperforms existing methods in terms of accuracy and speed, making it a promising tool for practical applications. Overall, our project demonstrates the potential of deep learning to solve challenging image processing problems and highlights the importance of interdisciplinary research in fields such as computer science, art, and history.

II. LITERATURE REVIEW

With reference to Tung Nguyen, Kazuki Mori and Ruck Thawonmas, [1] research mainly out comes that, Image colorisation is an interesting topic and has become a research area over the past years. This task involves coloring a black and white image using deep learning techniques. A deep convoluted neural network (CNN) is built and trained on over a million images. The output generated by the pre-trained version is entirely dependent on frames which it extracts from scratch using advanced features without direct human assistance. Images are from specific sources such as Inception, ResNet-v2, ImageNet, etc. Numerous network architectures, objectives, color spaces and problem formulations have been found. The goal of this task is to recolor images in black and white or grayscale using a convolutional neural network. The utility is designed to recolor saturated images with a specified opacity color overlay on specific areas. The neural model is trained using black and white images as input and real images as output. Minimizing the color difference between the color image and the real image will play a role in forming

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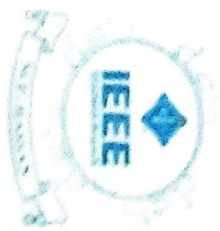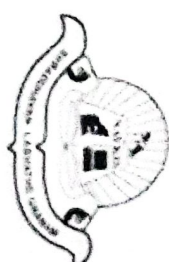
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Bitcoin Price Prediction using Machine Learning and Sentiment Analysis

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Abstract - In this paper, we attempt to predict the trend in prices of bitcoin by using means of Machine Learning approaches. We also focus on the deciding factor of human sentiments from two community platforms. Sentiments can be argued to be an influencing factor in the sudden rise in demand for Bitcoin. We intend to study the sentiments over Twitter as well as Wikipedia Edits section by processing them using the sentiment- analysis model and try to find out the more reliable source and the best model for processing. As in for the supervised learning methods for bitcoin price prediction, we use the Random Forest Approach tagged with XGBoost models. For unsupervised learning, we experiment with Long Short-Term Memory (LSTM) model. By comparing both the supervised and the unsupervised learning models, we apply the best approach in predicting prices and processing sentiments with arguably better accuracy.

1. INTRODUCTION

1.1. Bitcoin

Cryptocurrency was first introduced in 2008 with Bitcoin being the first currency. Satoshi Nakamoto, the founder or argued by some as a group of founders under pseudonym is the anonymous brain behind Bitcoin. The ideology behind any commercial transaction is the trust which exists between the spender and the receiver. This trust in usually maintained by a third party who acknowledges the flow of money between the two personnel. However, this also decides the fate of the transaction solely with the third party and any loss to the preserved data can lead to loss in the integrity of all transactions. Nakamoto [1] finds the solution for data loss and double spending problem by introducing Bitcoin which flows over a peer-to-peer network. Each transaction is stored in a ledger which itself is maintained as a copy with each peer.

1.2 Problem Statement

Since then, this ideology has been deeply debated on concerns over the validity of cryptocurrency as a whole and remained to be of shallow importance in the financial markets. However, Bitcoin has been the talk of the town for past three years especially around 2021-2022 when the prices sky rocketed to unimaginable extents. Hence the number of investors who are trying to flock around this trend have increased by many manifolds. This creates a very lucrative environment for the investors who all want to have a bite of this trend.

But what we understand from the bitcoin market collapse that occurred past year is that cryptocurrency market is just as fragile as any other market or arguably more volatile. Can machine learning approaches be used to predict this volatility? We solve this question by developing a model which can help us predict the price of Bitcoin with high accuracy. The predicted price might not be accurate but this helps us understand a general trend and direction of prices. We plan on testing our data with multiple approaches and choose the best approach for our model.

1.3 Sentiment Analysis

This rise has also been aided by the popular opinions of various social media sites. With the increase in the number of users using internet and also the amount of people expressing their free speech has left us with thousands of opinions. Lennart [2] through his studies has tried to establish a pattern between bitcoin prices and tweets by a single user Elon Musk. The study claims individual tweets to result in 16.8% increase in prices along with similar decrease for negative tweets. This not only makes the already volatile cryptocurrency market even more unstable by creating a rise of conflict between individuals trying to gain illicit gains by swinging the market into one's favour and investor protection. Hence even human sentiments can be a major factor to be considered to a deciding factor in predicting the prices. We try to analyse such sentiments to categorize them as Neutral, Positive and Negative using the sentiment-analysis model.

1.4 Machine learning Approach

As the necessity demands, machine learning provides one with many different approaches and algorithms to predict bitcoin prices with their own merits and drawbacks. Weighing on multiple factors such as a non-linear trend in the prices and being an unpredictable market leaves us with very less choices to choose the Arima Model. Arima with all its merits still relies on the assumption of linear data and hence can be neglected in this scenario. We narrow our choices down to mainly using the Random Forest regression as part of analysis for supervised machine learning approach and LSTM in the study of unsupervised deep learning approach. Our choice with Random Forest Regression over others is credited to its higher proven accuracy in predicting nonlinear trends which suit perfectly for our study. Albert, when comparing the accuracy of both the approaches, this paper chooses to go ahead with the
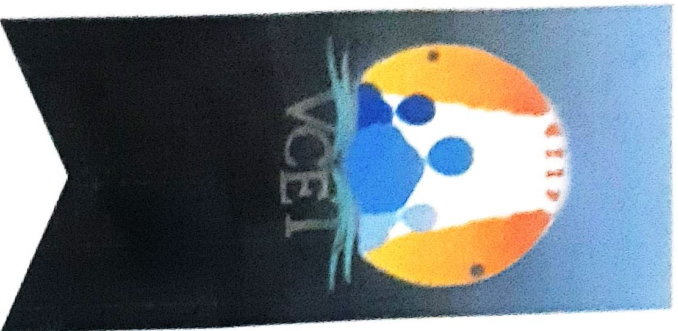
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from **ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY**

for presenting the paper entitled **"BITCOIN PRICE PREDICTION USING MACHINE LEARNING AND SENTIMENT ANALYSIS"**

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FAKE NEWS DETECTION USING MACHINE LEARNING

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Abstract

Pervasive fake news on platforms such as social media raises serious concerns since it could have a harmful impact on society and the nation. Presently, people are disseminating more and more knowledge on this global internet platform every single second. False news is information that is spread through many media, including social media, international news, etc. It's becoming more difficult to tell whether the news is accurate or not as media has developed. On these social media platforms, the majority of people simply spread the information across the network without checking to see if it is accurate or not. Attacking end-to-end technology and finding fatal flaws is the primary method now employed by hackers. It is quite difficult for everyone to manually recognize bogus news. In order to effectively identify bogus news, a machine learning system is required. It can be difficult to automatically determine whether a text article is false or false information. Before making a determination about an article's veracity, even an expert in a given field must consider a number of factors. For the automated classification of news stories, we suggest using a machine learning ensemble approach in this work. The finest classical machine learning models areexplored in this study as it analyses the research on false news identification, to create a product methodology uses supervised machine learning techniques that can differentiate between accurate news and deceptive fake news.

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Heart Disease Prediction using Machine Learning

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Abstract: The medical community's main concern is predicting heart disease. and may make it easier for clinicians to distinguish between healthy and unhealthy cardiovascular disease. Heart illness must be detected as soon as possible. One of the most pressing problems in medicine is heart disease. By adopting a heart disease prediction system that uses machine learning to identify harmful heart conditions before they occur, we can somewhat mitigate this issue. Heart disease dataset with 13 features will be used in our research. Medical analysts can now easily identify medical diseases early on thanks to many artificial technologies. Finding classification accuracy using various supervised machines is the major goal. The contribution will be in learning, approaches, and optimum outcomes. For this project, we will only use publically available datasets. In our work, the Python Google Collab will take into account various supervised classifier-based evaluations and will enhance outcomes through fine tuning. The development of the Heart Disease Prediction System makes use of machine learning techniques. Health care data, which can take the form of text, photographs, or other media, is widely used in the biomedical sector of the healthcare industry, but it is rarely accessed and not mined. By developing the heartt disease prediction System, we can thereby prevent this issue. By using this technology, we can treat cardiac patients more effectively while also lowering costs.

Key Words:- Classification, Supervised machine learning, Biomedical, Accuracy.

1 INTRODUCTION

Heart disease is the type of ailment that can result in death is heart disease. Heart disease is responsible for far too many deaths each year. The deterioration of cardiac muscle can lead to heart disease. Moreover, the inability of the heart to pump blood can be used to characterise heart failure. Coronaryartery disease is another name for heart disease. A lack of blood flow to the arteries can lead to CAD. The signs of heart illness, such as high blood pressure, chest pain, hypertension, cardiac arrest, etc.,can be used to diagnose the condition. There are numerous each with a unique set of symptoms.Like1) Heart disease involving blood vessels: chest pain, breathlessness, pain in the neck or throat; and 2) Heart disease resulting from aberrant heartbeats: slow heartbeat, discomfort, chest pain, etc. Shortness of breath, uneasiness, and chest pain are among the most prevalent symptoms. Shortness of breath, chest discomfort, and fainting are the most typical symptoms. Birth abnormalities, hypertension, diabetes, smoking, narcotics, and alcohol are all factors that contribute to heart disease. Infections that affect the inner membrane can occasionally accompany heart disease and cause symptoms like fever, exhaustion, a dry cough, and skin rashes. Bacteria, viruses, and parasites can all lead to heart infections. Heart conditions include angina pectoris, congenital heart disease, slow heartbeat, congestive heart failure, hypertension, coronary artery disease, cardiac arrest, and congenital heart disease. Data mining, machine learning, deep learning, and other automated methods are now available in plenty to identify cardiac disease. The techniques of machine learning will therefore be briefly introduced in this paper. With the help of machine learning resources, we train the datasets in this. There are certain risk variables that are used to make predictions about heart disease. Risk factors include age, sex, blood pressure, cholesterol levels, diabetes, smoking, and alcohol use. Heart rate, being overweight, and chest pain.

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IMAGE SEGMENTATION USING DEEP LEARNING

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Abstract—In real life, object recognition in digital photos and videos is crucial. Nowadays, models like the Fast RCNN are used to identify objects in pictures. In object detection, bounding boxes around objects are used to identify the items in the picture. For a person, watching surveillance footage and analyzing them is a taxing and time-consuming task. The key reason for using Mask RCNN for videos is that the previously employed Faster RCNN architecture was slower and unable to achieve instance segmentation (pixel class of an image), but Mask RCNN solves those limitations. Replicating the method of surveillance footage analysis, particularly as it pertains to industrial videos, can be extremely beneficial for evaluating productivity, calculating out if completed products or raw materials are accessible, finding flaws, creating reports etc. To finish this assignment, we suggest using a video annotation and grading approach. We develop summaries in comprehensible English as we caption videos. These interpretations are helped by an understanding of the events and objects in the movie. The technique laid out in this research may be used to produce an annotated video summary which is composed of frames and the explanations for each one. Initially, the frames from the video are collected utilizing uniform sampling. As a result, captioning for videos is reduced to captioning for images. Then, Mask-RCNN is used to identify items like raw materials, finished goods, people, etc from the sampled video frames. To acquire the picture captions, a template-based sentence generating approach is also used. Eventually, a report is created that lists the products found as well as information about the production, such as how long the product was found to be there, how many products were found, whether any operators were present at the workstation, etc.

Keywords—Region Proposal Network, Object detection, Mask R-CNN, instance segmentation, ResNet, Tensorflow, Keras, MS-Coco.

I. INTRODUCTION

The results of semantic segmentation and object identification in the visualization circle have improved greatly in a short period of time. Strong foundational systems for object recognition and semantic segmentation, that include the Fast or the Faster RCNN and Fully Convolutional Network frameworks, respectively, have been a major contributor to these advancements. Conceptually simple, flexible, and resilient, these approaches also provide quick training and inference times. In this effort, we want to provide a comparable enabling structure, such as segmentation. It is challenging to correctly identify all items in a photo and to accurately segment each instance at the exact same time.

As just a consequence, it combines components of object detection, that aims to categorize specific objects, with semantic segmentation, whose objective is to categorize every pixel into a predetermined set of categories without differentiating between separate object instances. And use a bounding box to find each. Given this, one may assume that a hard approach is necessary to achieve decent outcomes. Yet, we demonstrate that a method that is unexpectedly quick, flexible, and simple for using may outperform earlier unconventional instance segmentation findings. Our method, called Mask R-CNN, enhances faster R-CNN by concurrently including a branch for segmentation mask prediction for each Region of Interest (RoI) and the current stream for categorization and regression using bounding boxes.

The mask subsidiary, a brief Fully convolutional neural network that estimates a segmentation mask pixel-by-pixel, is delivered to each RoI. Because of the Faster R-CNN framework's support for a variety of customizable architectural designs, Mask R-CNN is simple to build and train. The mask division's limited calculation expense also makes setup and experimentation quick. Strictly speaking, Mask R-CNN follows Faster R-CNN logically, but for the best outcomes, the mask branch must be built correctly. More crucially, Faster RCNN was not created with the goal of emulating pixel-to-pixel systems' input and output. The use of coarse spatial quantization for feature extraction in RoI Pool, the unofficial main function for attending to instances, is the most notable example of this.

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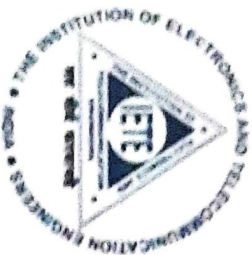(Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi &, Govt. of Karnataka)

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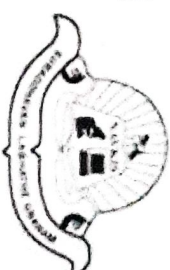
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Automatic Attendance Management System using Face Recognition

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Abstract: *Face recognition is among the most productive image processing applications and has a pivotal role in the technical field. In the recent time automated face recognition has become a trend and has been developed very much, this is mainly due to two reasons first it is due to availability of modern technologies and second is due to the ability to save time using face recognition in the process of taking attendance of students. Its usage will grow vast in the future as it saves a lot of time. It consumes a lot of time to take attendance manually and few might also fake the attendance, in order to prevent time consumption and avoid faking the attendance. Face recognition is used to identify the person present in the class and mark their attendance , this is done with the help of image or video frame. We proposed an automatic attendance management system using techniques such as PCA algorithm. The face detection and recognition will automatically detect the students in the classroom and mark the attendance by recognizing the person. The traditional process of making attendance and present biometric systems are vulnerable to proxies. This paper is therefore proposed to tackle all these problems. The proposed system makes the use of Haar classifiers, KNN, CNN, SVM, Generative adversarial networks, and Gabor filters. After face recognition attendance reports will be generated and stored in excel format. The system is tested under various conditions like illumination, head movements, the variation of distance between the student and cameras. After vigorous testing overall complexity and accuracy are calculated. The Proposed system proved to be an efficient and robust device for taking attendance in a classroom without any time consumption and manual work. The system developed is cost-efficient and need less installation.*

Keywords: KNN, SVM, VIOLA-JONES, HAAR classifiers, CNN

I. INTRODUCTION

Attendance being a very necessary side of administration may normally become an arduous, redundant activity, pushing itself to inaccuracies. The traditional approach of making roll calls proves itself to be a statute of limitations as it is very difficult to call names and maintain its record especially when the ratio of students is high. Every organization has its way of taking measures for the Attendance of students. Some organizations use document-oriented Approach and others have implemented these digital methods such as biometric fingerprinting techniques and card swapping techniques. however, these methods prove to be a statute of limitations as it subjects students to wait in a time-consuming queue. if the student fails to bring his id card then he will not be able to get attendance. evolving technologies have made many improvements in the changing world. The system of intelligent attendance is generally implemented with biometrics help. Recognition of face is one of the Biometric ways of improving this system. Face recognition proved to be a productive method for taking attendance. The normative face recognition techniques and methodologies fail to tackle challenges like scaling, pose, illumination, variations, rotation, and occlusions. The framework proposed is designed to solve the drawbacks of current systems. there has been a lot of advancement in face recognition but the vital steps are face detection, feature extraction, and face recognition. firstly, two or more cameras depend on the need, and the size of the classroom has to be installed on the ceiling of the classroom from where it covers the entire area. image captured from these cameras will be considered as an input to the system. There may be a possibility of getting image blurred due to movements of students, for better efficacy image can be upgraded using

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MINING THE SOCIAL MEDIA DATA USING BIG DATA ANALYTICS

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Abstract— The technologies today have changed all the aspects of the people by making them attract towards the Social Media, Web applications and by the online games through the Internet. Most of the information or the data available in the internet are provided by the users, customers and corporate companies as well. These data will be utilized for the sake of the Company. The social media platforms like the Facebook, Instagram, Twitter, Whatsapp were widely used these days. Around 2.7 billion times the like button of the Facebook is pressed on an average in the world and on an average 2.5 to 3 hours were spent on these platforms daily by liking, chatting and by tweeting on social media Big data is a lot of information that is difficult to organize and understand using traditional methods. But by analyzing it, we can find important insights that benefit everyone. There are four main features of big data called the 4 Vs: Velocity, Volume, Variety, and Veracity. The challenge is to find the value in this data and make predictions. In social media, a tools like data mining algorithms and Hadoop to further tasks.

Keywords - Big Data, Social media, text mining, Hadoop, data storage.

I. INTRODUCTION

Throughout the previous two to three decades, web technology and its applications have become popular and are utilized everywhere. Many of the billion social media users worldwide will be engaged on a regular basis and linked via tablets and smart phones. The distinctive features of social media platforms, such as the data exchange and communication, have contributed to the development of Web 2.0[1]. Big Data is typically defined as the storage of massive amounts of data, including both organized and unstructured data. The high-quality data gathered here is utilized to establish connections between legal citations, business trends, and research quality. According to McKinsey, the term "big data" refers to datasets that are too big to be gathered, handled, and analyzed using standard database software tools.

Large and complicated data volumes that are challenging to manage using conventional database tools or data processing processes are referred to as "big data." Data mining technologies are employed in order to glean useful information from these enormous data collections. Big data

seeks to reveal hidden patterns and connections in the data in order to transform chaotic and complex data into information that can be used. To extract novel insights and important knowledge from large data sets, conventional data analysis techniques like exploratory, clustering, and factorial analysis must be modified [2]. The following, which is distributed by the four V's: velocity, volume, variety, and veracity, can be used to measure big data;

1. Volume – The quantum of data is at veritably large scale. The quantum of information being collected is so huge that ultramodern database operation tools are unfit to handle it and thus come obsolete.
2. Velocity- The rate of data production is exponential. It is constantly expanding in terabytes and petabytes.
3. Variety- Unshaped partially structured, and structured data are all types of data that are formed. This information is of a diverse type.
4. Veracity- The nature of the data generation is undetermined. It can be challenging to distinguish between outdated information and accurate information.
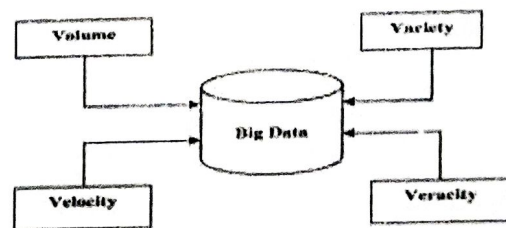

Fig 1: Categorization of Big Data in 4V's

Massive amounts of user-generated data are present on social media platforms, which can be mined for data. This data consists of posts from message boards, online forums, blogs, video and image sharing social media sites, and interactive games. Social media analytics frequently employ text analytics and sentiment analytics to examine client opinions [4]. Social media data, however, is essentially secondary data that isn't always structured because user

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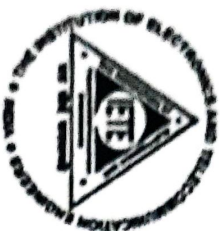
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DEVELOPMENT OF A MACHINE LEARNING MODEL TO DETECT CHRONIC KIDNEY DISEASE (CKD) AND PARKINSON'S DISEASE (PD)

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Abstract

Since people nowadays suffer from various diseases and its early detection is crucial. Machine Learning is used for early disease detection. Disease detection using Machine Learning is a method that detects diseases based on symptoms reported by the patients and data provided by the researchers. An algorithm analyzes the patient's disease symptoms, removes the null values or missing values and then the data is divided into train data and test data. The trained data is used to train the machine learning model and test data is used to test the trained model. Supervised machine learning algorithms like Support Vector Machine, Random Forest and XGBoost are used for disease detection. The probability of getting sick is calculated using the Random Forest, Support Vector Machine and XGBoost algorithms. A combined model to detect both Parkinson's Disease and Chronic Kidney Disease was built after the existing model for Parkinson's Disease, which employed audio files as its input and had a 75% accuracy rate, and the clinical model to detect Chronic Kidney Disease. For Parkinson's disease, the voice frequency is used as input, and for chronic kidney disease, measures including blood pressure, hemoglobin, and red blood cells are employed. These methods are more accurate than the models currently in use. Accurate analysis of medical data helps in early detection of diseases and treatment of patients as the amount of biological and health data increases. Using decision trees and linear regression algorithms, a model was developed to detect Chronic Kidney Disease (CKD) and Parkinson's Disease (PD).

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from **ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY**

for presenting the paper entitled "**DEVELOPMENT OF A MACHINE LEARNING MODEL TO DETECT CHRONIC KIDNEY DISEASE (CKD) AND PARKINSON'S DISEASE (PD)**"

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Covid-19 Verification and Supply Chain Management.

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Abstract—The worldwide economy was highly affected by the Covid-19 pandemic. Through the rigorous research and the scientific developments, an effective vaccine for Covid-19 was discovered. The government made it compulsory to produce the vaccination certificates for the individuals to access various facilities including transport, restaurants, cinema theaters or business in order to prevent the spreading of virus. This led to the forging of the certificates by the people. The paper introduces a blockchain solution that focuses on the registration of vaccinating authorities and issuance of vaccine certificates that can be quickly verified by anyone. The solution is application-based and aims to streamline the process of verifying vaccine certificates. Furthermore, the paper highlights the importance of analyzing the data retrieved from the blockchain, as this data will be accessed by numerous authorities.

Keywords—Block Chain, Digital Signature, Verification.

I. INTRODUCTION

The lifestyle of individuals has been transformed due to advancements in information technology, widespread availability of the internet, and the widespread use of mobile devices. People are starting to take notice of blockchain, the underlying technology. Blockchain boasts a decentralized and tamper-proof database that has the potential for various applications.

The application of blockchain technology extends beyond storing information, conducting transactions, and building trust in a unique way. Blockchain is viewed as a ground-breaking technology for cryptography and cybersecurity, and it has diverse applications, such as healthcare, cryptocurrency, smart contracts, Internet of Things, smart grids, governance, and supply chain management. The present research work seeks to provide a comprehensive analysis of blockchain security, privacy, and trust. It also examines the challenges associated with implementing blockchain technology in the field of Healthcare mainly focusing on valid Covid-19 certificate generation. Finally, the research proposes a blockchain-based framework for secure and dependable management of valid Covid-19 vaccine records.

The Covid-19 vaccine certificate is a guaranteed proof issued by the Government that a person has received COVID-19 vaccine. Currently, there are different types of certificates being issued, i.e., for the First Dose, Second Dose and a consolidated certificate for all doses, whether you've received "Covishield " or "Covaxin".

It's no surprise that there is been a lot of discussion about Covid-19 certificates being able to prove that one has actually received the vaccination. Here, we deal with 3 scenarios:

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DATA MINING TECHNIQUES IN INSURANCE SECTOR

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Abstract

The insurance business has amassed a significant amount of vehicle insurance data due to the development the insurance sector's information system. The protection business now faces the pressing issue of figuring out using these enormous data sources effectively. Data mining technologies can address the aforementioned issues. In this paper, customers analysis model is created to lower the risk of underwriting insurance businesses. A decision tree algorithm is utilized in this work to mine and analyze data from the auto insurance industry.

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VIRTUAL CLASSROOM

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Abstract—A Virtual classroom is an Software tool that uses the internet to connect distant learners which is similar to face-to-face interaction. The main intention is about the challenges that a person has encounter in the virtual classroom setting. Prior to the arrival of Covid-19 in the 21st century, the finest and most efficient method of Learning was viewed as taking place in person, with the instructor and students interacting in real time.The techniques of teaching and learning have undergone significant changes due to technological advancements in the last few decades, particularly in the area of computer-aided learning. In the field of education,the World Wide Web has been extremely important for the storing and dissemination of knowledge. Even so, The pandemic had left us all confused more by circumstances, gave us all tremendously tech-savvy and strengthened our passion for it and willingness to embrace technology. Both instructors and pupils had the exact same experience. The trainer must deliver the teaching material in a given place at a fixed time in a traditional classroom setting.So it limits the instructor as well as the pupil in regards of where and when to teach. Although network learning has grown increasingly widespread in almost all educational settings, it really is predicted to emerge as the dominant method of instruction in the coming days.

Keywords—World Wide Web.

I. INTRODUCTION

Any nation's economic development and societal transformation are thought to be primarily influenced by its educational system. Education is becoming more accessible day by day. As network computers, the Internet, and telecommunications technology have become more prevalent, e-Learning has gained popularity as a useful instrument for education and training. Effective teacher-student dialogue has always been a priority in the classroom.The layout of the classrooms encourages students to remain quietly and pay close attention to the instructors lessons.e-Learning is now widely known as a supportive tool for education and training.The world has been fighting the novel coronavirus since the beginning of 2020, and the outbreak has isolated everything, including educational institutions.In some developing nations, formal education is still primarily provided through conventional methods.

Teachers and students frequently experiment with new approaches to knowledge construction as a result of the substantial development of e-learning.Understanding can grow in a supportive setting where students can confide in their instructors and discuss their fears and uncertainties. Due to the Covid19 outbreak,online instruction has been adopted in many nations as a method of pupil instruction and learning. The area of education that places the most emphasis on using technology to provide instruction to pupils who are not physically present to receive it does so. Since the introduction of personal computers, laptops, and the internet, each discipline had attempted to integrate audio visual methods of teaching and learning in their various domains. In every corner of the world, the change from a depressed economy to a new knowledge-based economy is right now underway. To carry out online learning as efficiently as possible, we must determine the proper digital networks. Due to the rapid expansion of internet-dependent learning in virtually all schools and colleges, this area of education will be highly popular in the future days and will soon replace the conventional method of education. Geographic location is a key factor in the continuous development and adoption of remote learning, which is the result of certain circumstances.What a pupil learns, how well they achieve, and how much of an impact does non-traditional learning have on an individual? The benefits, drawbacks, and efficacy of online courses have all been the subject of numerous studies. During the ongoing discussion about online courses,

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TWO LAYER AUTHENTICATION USING OTP AND QR-CODE

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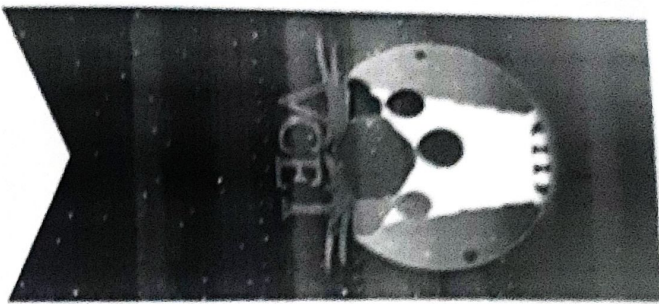[1] Assistant Professor, [2-5] Student

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Abstract

The security of the device depends on stoner authentication because wireless communication technology is developing so rapidly. In the authentication procedure, words are very important. During the authentication process, the word entered by the stoner will be transferred from the company to the authentication garçon, allowing the garçon to grant access to the authorised stoner. The bushwhackers will seize the chance to try and guess the other person's word in order to conduct some illegal conditioning by using another person's name to keep them out of trouble. As a consequence of the issues, many solutions have been put forth to enhance the security of wireless communication technology. The study's roughly predicted outcome will be used to raise the safety of the mechanism. The recommended results include one-time passwords, mincing, and two-factor authentication. By adding a new result as a consequence of the QR law, more data can be saved. The system's goal is to improve the existing registration and authentication process. It has the affect of making word breaking more subtle and influences drug users to choose and set watchwords that are challenging to crack.

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DROWSINESS DETECTION SYSTEM USING OPENCV AND PYTHON

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Abstract

The research done in the subject of computer engineering is reviewed in this document. To stop accidents caused by tired or sleepy drivers, a mechanism for detecting their tiredness should be created. A restricted implementation of the numerous strategies that are discussed in the thesis on the subject was addressed in the novel along with results and solutions. With the current state of traffic, the document addresses the many methods for detecting weariness and their effectiveness in averting accidents. The report also summarizes the views of various authors in order to obtain better results in the concerned area and provide the utility with greater effectiveness for a safer road.

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PARKINSON'S DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES

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Abstract— Parkinson disease is a progressive neurodegenerative disorder that affects the motor system, and early detection can improve the quality of life for individuals with the condition. In recent years, there has been growing interest in using audio recordings and machine learning algorithms to detect early diagnosis of Parkinson's illness. This approach involves training supervised machine learning algorithms to analyze audio recordings and identify patterns and features that may indicate the presence of the disease. Using audio recordings to forecast the onset of Parkinson's disease presents both obstacles and potential, which are discussed in this paper's description of the state of the research in this area. The research concludes by highlighting the potential benefits of this approach, including the potential to enable earlier detection and intervention, leading to improved management of symptoms and potentially delaying the progression of the disease.

Keywords— Parkinson's disease, neurodegenerative

I. INTRODUCTION

Parkinson's condition It is a complicated, advancing neurodegenerative condition that primarily affects the motor system of the nervous system. According to estimates, about a million Americans have PD, and as the population ages, this number is anticipated to rise. While there are currently no remedy for PD, early detection and intervention can help slow down the progression of the disease and improve the quality of life for individuals with the condition.

One potential approach for early detection is through the analysis of audio recordings. PD can affect speech and vocal patterns, including changes in pitch, volume, and articulation. As a result, there has been growing interest in the use of machine learning algorithms to analyze audio data for early prediction , diagnosis about PD.

Supervised machine learning algorithms are trained to identify patterns and features in data that may indicate the presence of Parkinson's disease. By using a dataset of audio recordings from individuals with and without Parkinson's disease, machine learning models can be trained to accurately predict the likelihood of disease in new, unseen recordings. This has the potential to enable early detection and intervention, leading to improved management of symptoms and potentially delaying the progression of the disease.

Recent studies have shown promising results in using machine learning algorithms to analyze audio data for PD detection. For example, one study used a combination of Mel-frequency cepstral coefficients (MFCCs) another Teager-Kaiser energy operators (TKEO) to extract features from audio recordings of individuals with and without PD. The extracted features were then used to train a support vector machine (SVM) classifier, which achieved an accuracy of 93.6% in detecting PD. Another study used a combination of wavelet packet decomposition and random forest classification to achieve an accuracy of 97.8% in detecting PD.

While the use of supervised machine learning algorithms for PD prediction using audio recordings is a promising area of research, there are still some challenges that need to be addressed. For example, the quality and variability of the audio recordings can impact the accuracy of the machine learning models. Additionally, there may be other factors that contribute to changes in speech and vocal patterns, such as age or other medical conditions.

Using supervised machine learning algorithms to predict Parkinson's disease through audio recordings could potentially enhancing the standard of living for persons with Parkinson's disease and their families. By providing healthcare providers with a tool for early detection, disease management for individuals with Parkinson's disease and their families. Further research in this area is needed to address the challenges and optimize the accuracy of the machine learning models.

II. EXISTING SYSTEM

The use of health informatics systems to identify and monitor Parkinson's disease, a rapidly expanding approach neurodegenerative disease that affects a great number of

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