IoT and Cloud based Face detection application design for Surveillance systems using Deep Learning

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ABSTRACT

Semantic Index, Human Action Detection, and Event Detection are video surveillance packages that assist automate surveillance tasks. Video surveillance structures have entered the generation of virtual surveillance structures in which virtual video is used to traverse the course of different virtual facts. Advances in storage, telecommunications, and facts compression have enabled the increase of more than one technology in virtual surveillance structures. Using more than one video surveillance fashion in risky conditions extends the competencies of rule implementation organizations. In addition, video surveillance enables the form of a motion to carry out in one-of-a-kind conditions. In addition, spotting a particular man or woman in a video is essential for added security, multimedia, and multimedia packages, including offline, seek, and online monitoring of involved humans within the video. The proposed IoT- Cloud based Face detection application is designed to find a person from a huge size dataset and that can generate more accurate results. This application uses Deep Learning methods to find exactness when classifying the images. IoT here is used for liveness detection by comparing all the images present in cloud systems. For results comparison, we used Haar Cascade and DenseNet architectures.

CCS CONCEPTS

• **Computing Methodologies**; • **Modelling and Simulation**; • **Model Development and Analysis**; • **Model verification and Validation**;

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KEYWORDS

IoT, Surveillance system, Face detection, Person identification

1 INTRODUCTION

Face recognition systems have many implementations and applications in various fields and industries such as the Online Face recognition Payment system which can be used for contactless payments for Online shopping and Business. We can reduce the card system and introduce a contactless payment system by integrating facial recognition in shopping malls for ease for customers so, they wouldn't even need to carry cards. Access and Security: In addition to payment confirmation, facial popularity can be linked to physical devices and objects. Instead of using a password, you can access your customer's mobile phone or other electronic devices through the owner's facial features [1]. Innovative face shields should benefit organizations or institutions that want to process sensitive records and tightly control who enters the facility. The use of criminal identification facial recognition to keep unauthorized people away from the facility, it will help them to be firmly planted in the facility.

Object detection and monitoring are widespread in ultra-modern virtual societies, and IoT-enabled devices such as cameras are ubiquitous. Autonomous video surveillance analyses object detection, segmentation, and categorical video sequences for various applications. Therefore, object recognition is essential in the vibrant realm of imaginative and optimistic computer research. In recent years, considerable creative, positive, and profound advances in computer processing have made such object recognition software programs much faster and more accurate, and accurate.

In reaction to the ones increasing the number of state of art and suitable manipulated content material, sizeable efforts are being

THE DASHBOARD INFRASTRUCTURE OF ELECTRIC VEHICLES WITH IOT AND WIRELESS POWER TRANSFER SYSTEM

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Abstract— The development of contactless sharing is a significant milestone that demonstrates the technology's superiority. This project demonstrates how IoT Sensor nodes powered by a battery can be powered wirelessly. As a result, the project necessitates replacing the battery with a more effective wireless power system. This idea of Internet of Things technology serves as the project's foundation, storing and continuously monitoring data from massive IoT sensors in a particular field [12]. It is suggested that this idea be applied to wireless power technology. A transmitter device that is powered by electric power from the source and creates a time-varying electromagnetic field transmits power across a medium to a receiver device that takes power from the field and supplies it to an electrical load in this wireless power transmission system. The average end-to-end transmission time is used to calculate both the system's overall efficiency and its energy efficiency. The maximum power transfer between the transmitting coil and the receiving coil was achieved at 5.8 cm, which is consistent with the findings of the experiments [23]. With a 15-second delay, the WPT secondary voltage and current values are uploaded to the open-access Thingspeak cloud for monitoring.

Keywords— WPT, IoT Sensors, Thingspeak.

I. Introduction

Considered to be essential to life is power based on current principles. Mechanical events have been fueled by power [4]. Remote Power Move is what the name states, to move electrical power from a source to a contraption without the aide of wires. Nikola Tesla, the inventor of AC power, was the first to direct WPT management analyses [3]. The process of sending electrical energy from a force source to an electrical load without using wires is known as remote energy moves or remote force transmission. When quick or consistent energy movement is required but interconnecting wires are inconvenient, risky, or poorly organized, remote transmission is useful [2]. Remote force movement has the potential to bring about a novel advancement in the field of electrical design that eliminates the use of traditional copper links and flow conveying wires. The task is designed to move power within a limited range, according to an idea. There is no association as the force moves. Current remote power transmitters are prepared for conveying current at partitions of dependent upon one foot. These divisions take into account their application to small consumer electronics. Nikola Tesla, also known as the "Father of Wireless," is also known for his significant AC age. He was the first person to consider the possibility of remote force transmission and successfully demonstrated the transmission of power without wires in 1891. In 1893, Tesla won the opportunity to illuminate the World Columbian Exposition in Chicago, demonstrating the achievement of lighting vacuum tubes bulbs without the use of wires. Additionally, magnetic resonance is considered because it aids in the more effective transmission of power over longer distances [5][6]. By using Ansys Maxwell software to visualize the nature of coils and the field strengths created around them, simulation work to see this power transmission was limited [7].

One of the most important technologies in fifth-generation wireless networks is spectrum sharing for the Internet of Things (IoT) [8]. Spectrum sharing enables independent devices to acknowledge correspondences for IoT applications within the permitted range. The Internet of Things (IoT) is a concept that has been associated with a fantasy in which various actual objects, such as sensors, mobile phones, home appliances, medical devices, and even smart furniture, can be connected through a communication network to exchange information about themselves and their environment. IoT devices (IoDs) are any of these things that are connected to an organization from an interchanges point of view. For these self-governing things (electronic gadgets) to work together and form the Internet of Things (IoT), it is critical to attend to their correspondence parts [15]. The Internet of Things' features and capabilities are being exploited by numerous applications [13], [17], and [18] For example, instruments can cooperate with each other in modern offices and farms to work on the show and viability of assembling plant and residence exercises [21]. The standard procedure for setting up a WPT system is depicted in Fig. 1. On the transmitter side, a single main High Frequency Transforming unit feeds the primary coil; few frequency transistors or amplifiers were utilized for this purpose. On the other hand, depending on the application, the output voltage is controlled by a coil, rectifier, and regulator [3].
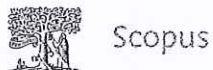
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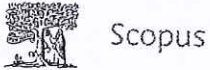
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Deep Learning Techniques for Speech Emotion Recognition

Bhavani R.[a] ✉ ;   Muni, T Vijay[b] ✉ ;   Tata, Ravi Kumar[c] ✉ ;   Narasimharao, Jonnadula[d] ✉ ;
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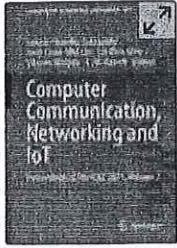
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Novel Technique for Identification of False Coconuts to Avoid Genetic Diseases Using Classifiers

K. Murali ✉, K. Prasuna & G. Aloy Anuja Mary

Abstract

Identification of true coconuts is one of the critical tasks in the applications of Image Processing. There are several methods in identification but out of them classifiers play an important role in identification. In this paper, classifiers are used to identify the true coconuts based on template matching. Genetic diseases can be identified using surveyed classifiers. Fast PCA classifier is the best classifier in identifying false coconuts.

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An In-Depth Analysis of Distributed Denial-of-Service Attacks, Their Varieties, and the Countermeasures Employed in the IoT Network

S.Ramya[1], G. Jyostna[1], A. Saipujitha[1], Y.V.K. Durga Bhavani[1,2]

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[2]Research Scholar, Department of Computer Science and Engineering, Basaveshwar Engineering College(A), Bagalkot, Karnataka.

ABSTRACT

In today's internet world, the Internet of Things (IoT) has its own importance. Along with some advantages, it also has some drawbacks. Through this review paper, we will talk about Distributed Denial of Service Attack (DDoS) in major flows of IoT like how it works, different types and mitigation methods.

KEYWORDS: DDoS, IoT, RFID, WSN, SYN

1.INTRODUCTION

The term "Internet of Things" (IoT) was introduced by Ashton in 1999. The primary function of IoT is to interconnect the daily usable devices to easily do the computational task in an accurate and managed way. IoT works with sensing devices, the internet, electronics devices, etc., to make the devices smart, just like Artificial Intelligence (AI). IoT makes devices smart because it connects devices to communicate, process, and analyze the data from algorithm/computer language, then send it and show the output. The interaction between IoT objects can be human to human, machine to machine and human to machine.

IoT is presently finding its application in many fields; some of them are described as follows:

- *Agriculture Sector:* The IoT in the agriculture sector is used to check the fertility of the soil, to give information about the climate and suitable seasons for crops, use of insecticides and fertilizers, and irrigation purposes to help the farmer so a farmer can earn more profit.
- *Health Sector:* IoT makes decisions using patient data in the health sector, i.e. taking medicine and checking the body's health through smart devices. IoT control city traffic, distributes water, manages sewage and other wastes, calculates pollution level, manages light on roads and streets, parking, etc.
- *Transport Sector:* In transport, IoT uses vehicle tracking, truck/trailer weight measurement, vehicle maintenance/services, insurance etc.

Techniques based on machine learning that determine which path offers the best routing for data packets in a local area network

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ABSTRACT

The application of machine learning touches all activities related to human behavior like computer networks and routing the packets in Local Area Network (LAN). In the field of our research here, finding the best path, such as the number of nodes in the path and the congestion on each path, in addition to the cache used for each node. The goal of the neural network proposed in this study is to minimize the network time delay within the optimization of the packet paths being addressed. The shortest path is considered as the major issue in routing algorithm that can be carried out with real time of path computations. This study aims to suggest an efficient algorithm that could help in selecting the shortest path to improve the existing methods using weights derived from packet ID and to change neural network iteration simultaneously.
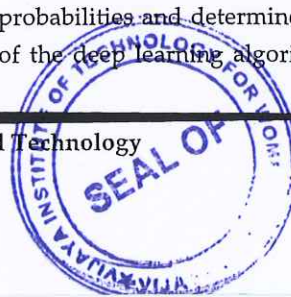
1.INTRODUCTION

Despite the development in communication technology, there are still some obstacles that are basically the main elements of data transmission throughout the network. The information sent from the source takes multiple paths according to the protocols assigned to the network and the strategies drawn to transfer the data. Given the large number of data and the traffic jam of the data through the network paths, whether wired or wireless, the data takes a different path, but the destination is the same. Multipath creates a problem with data flow times, especially when processing complex real-time data. So, managing this traffic is unavoidable.

There are few methods used to solve network congestion through the LAN or within complex networks. Solutions are there where few of the, are in the form of hardware and few in the form of software. The use of machine learning algorithms is based on learning the system by means of preknown results of experimental data, in order to solve the system in later of real data. Neural network algorithm is one of the worthy for solving such problem.

To increase the accuracy of choosing the path followed in the LAN, we need an algorithm that analyzes the most probabilities and determines the best one. And because of the deep learning algorithms, these algorithms have

Analysis of the Plant's Leaves for Signs of Disease

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ABSTRACT

The application of machine learning touches all activities related to human behavior like computer networks and routing the packets in Local Area Network (LAN). In the field of our research here, finding the best path, such as the number of nodes in the path and the congestion on each path, in addition to the cache used for each node. The goal of the neural network proposed in this study is to minimize the network time delay within the optimization of the packet paths being addressed. The shortest path is considered as the major issue in routing algorithm that can be carried out with real time of path computations. This study aims to suggest an efficient algorithm that could help in selecting the shortest path to improve the existing methods using weights derived from packet ID and to change neural network iteration simultaneously.

KEYWORDS: Routing, LAN, Machine Learning, Neural Network

1.INTRODUCTION

Despite the development in communication technology, there are still some obstacles that are basically the main elements of data transmission throughout the network. The information sent from the source takes multiple paths according to the protocols assigned to the network and the strategies drawn to transfer the data. Given the large number of data and the traffic jam of the data through the network paths, whether wired or wireless, the data takes a different path, but the destination is the same. Multipath creates a problem with data flow times, especially when processing complex real-time data. So, managing this traffic is unavoidable.

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To increase the accuracy of choosing the path followed in the LAN, we need an algorithm that analyzes the most probabilities and determines the best one. And because of the deep learning algorithms, these algorithms have taken the advantage of, and developed to fit, the features extracted from the given data. The nature of the features extracted in deep learning is computationally complex because of taking into consideration the outputs of each of the hidden layers and entering them as an input to the other layers, and it is called feed forwarding and backpropagation. The proposed method uses the perfect weights as features, and using powerful and suitable

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Recognizing the Feelings Behind Someone's Voice in Practice

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ABSTRACT

SPEECH EMOTION RECOGNITION is where emotions can be recognized from the speech. Speech is the most normal way to express yourself as human beings. Extending this means of communication to computer applications is only inevitable then. It describes speech emotion recognition (SER) systems as a set of methodologies that process and classify voice signals to detect the emotions embedded. It is used an MLP Classifier for this and made use of the sound file library to read the sound file, and the librosa library to extract features from it. Since emotions help us understand each other better, applying this understanding to computers is a natural outcome. Thanks to the smart mobile devices that are able to recognize and respond to voice commands with synthesized speech, speech recognition is already in our everyday lives. Recognition of speech emotions (SER) may also be used to enable them to detect our emotions.

KEYWORDS: Fear, anger,sadness,joy,Disgust

1.INTRODUCTION

Speech Emotion Recognition is software used to recognize the emotions of humans. Attributes of human voice such as pitch, timbre, loudness and tone make human voice versatile for communication. It can be observed that humans can convey their emotions, even by changing the specified characteristics. This helps the human emotion to be defined by speech analysis. Speech Emotion Recognition recognizes the various emotions like happy, sad, anger, and many more.

➤Fear: emotion comes with an unpleasant situation caused from pain, Anger or feeling afraid.

➤Anger: involves a strong feeling of aggravation, uncomfortable situation stress, displeasure, or hospitality.

➤Sadness: A feeling caused with disadvantage or loss due to anything.

➤Joy: feeling happy. Other words are happiness, gladness.

➤Disgust: A feeling with strong disapproval, nasty, dislike

➤Surprise: occurred with an unexpected event or shock. Picture (with "Float over text" unchecked). The tonal quality not only changes with different emotions and moods but the associated patterns of speech also shift. For example, when they are angry, people may tend to speak loudly and use shrill or high pitched voices while they are in an emotional state of fear or panic.

A Remarkable Structure to Ensure the Safety of Medical Documents while Allowing for Adaptable Access Control

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ABSTRACT

EMRs (electronic medical records) serve a critical purpose in healthcare systems. The EMR device must maintain patient privacy because these archives contain sensitive information about patients on a regular basis. Current policies normally allow an individual to look at another's EMR if and only if his or her role matches the criteria mentioned in the policy's entry to. The present systems, on the other hand, allow an adversary to link the identities of patients to their doctors. To prevent opponents from viewing the electronic medical records (EMRs) of patients, the classifications of their ailments are leaked. We have two unnamed schemes in place to address this issue. As a result, they've gained not only information secrecy, but also individual anonymity. The first strategy provides a decent level of security by allowing attackers to select their attack objectives prior to accessing EMR system data. After interacting with the EMR system, enemies are able to alter their attack plans based on their interactions with the EMR system. In order to demonstrate our systems' security and anonymity, we provide extensive documentation. EMR owners can use our method to find their own records in a nameless database. We use the online/offline approach to speed up record processing in order to provide a better user experience. EMR encapsulation and key technology have demonstrated experimentally that their time complexity may be reduced to milliseconds.

1.INTRODUCTION

The advanced data collected by businesses, open groups, and governments has made enormous open doors for information-based applications to be used in their systems. As a result of these benefits, the sharing and exchange of obtained information among multiple parties has gained popularity. The sensitive information about clients is usually kept in the earliest records, thus releasing it without first handling it would be a misuse of the protection. In order to secure sensitive information, archive redaction is a straightforward method of doing so. When it comes to protecting proprietary information from unintended or malicious leaks, record redaction is a go-to solution for many firms. Clinical information
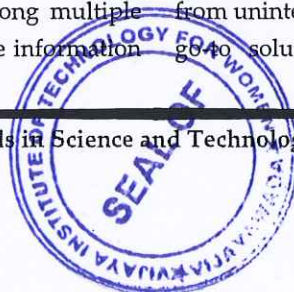
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Constructing an Image Caption Generator with the use of CNN and LSTM

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ABSTRACT

Image captioning means, it is a process of creating a short description of an input image. It essentially involves writing a statement that describes the visual picture. Typically, the image may consist of many objects. Some objects are focused more than compared to others. Identifying such tasks is carried out manually. Hence, it needs a huge contribution of people and time to automate this process. The challenge is that the machine must deeply learn from the given datasets only in order to identify the objects, its actions, and their locations. The fact that people can do it readily for small sets but fail when there are more photos which makes it a challenging problem of deep learning. The image caption generation task can be shortened with the use of deep neural networks.

KEYWORDS: Captions, CNN,LSTM, RNN

1.INTRODUCTION

Image Caption Generator isaprocess that generates a caption about the given image in natural language like English. The traditional retrieval and template-based approaches to captioning began with the detection of the Subject, Verb, and Objectindependently and then joining them using a sentence template. However, the introduction of Deep Learning and significant advances in Natural Language Processing has had an equal impact on captioning.

[13] Image Caption Generator has two approaches. Bottom-up approaches means it, combines [1] [2] [3] the input from different objects which are identified in an original input image.Top-down approaches, means, it uses CNN [4] [5] [6] as encoder to extract the features

from the image that are fed into decoders such as Long Short Term Memory (LSTM) and Recurrent Neural Networks (RNN).Our approach is based on top-down using CNN as encoder and LSTM as decoder. We use a deep Convolutional Neural Network (CNN) to extract important features of an image. Xception is used for image feature extraction. It is a CNN which has 71 layers deep.LSTM network uses this information and generate suitable captions. Figure 1 provides the model of CNN and LSTM.

CNN scans the image from top to bottom and left to right and extract some important features and combine the features. It is also responsible for image classification..It has three layers [7] they are Convolutional Layer, Pooling Layer and Fully Connected
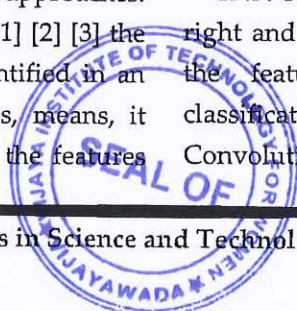
A Method for Estimating the Likelihood of Receiving a Loan Approval that is primarily based on the Machine Learning

Y. Lakshmi Durga, Dr.V.Suma Avani, M. Vijay Kumar, M. Lakshmi Prasanna

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ABSTRACT

Getting a loan from a bank has become a relatively normal occurrence these days. In the form of interest, banks benefit from the loans they make to their customers. Many variables should be considered by banks when accepting a loan, including credit history and score, the person's reputation, the location of the property, and the relationship with the bank. Many people seek for loans such as home loans, automobile loans, and other types of loans. On the basis of the aforementioned criteria, no one can be accepted. There are numerous instances where loan applications are denied by various financial institutions. For banks to maximise revenues, accurate forecasts about whether or not to issue a loan to a consumer are critical. The goal of this research is to apply machine learning techniques to forecast whether or not a customer will be able to obtain a loan from a bank.

KEYWORDS : Outlier, Prediction, Component, Training data, and Transform are all terms that can be used to describe a loan

1.INTRODUCTION

This study used data from prior clients of multiple banks who had loans approved based on a set of criteria. To generate reliable results, the machine learning model is trained on that record. The primary goal of this study is to anticipate the loan's safety [1][3]. Loan safety is estimated using the logistic regression method. The data is cleansed first to avoid missing values in the data collection. Our model was trained using 1500 examples with ten numerical and eight categorical parameters.

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 applies for a loan first, and then the Finance Company verifies the customer's eligibility for the loan. The applicants must fill out a form that includes information such as their marital status, gender, education, and number of dependents, as well as their income, loan amount, credit history, and other information. 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

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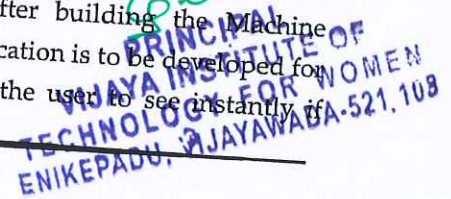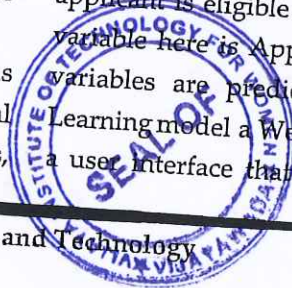
Effective Scanners for Identifying Malware on Android Devices

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ABSTRACT

The rapid spread of computer networks has changed people's perceptions of network security. Because computer networks are widely accessible, they are susceptible to a variety of hacking assaults. Network threats are innumerable and can be lamentable. Researchers have developed intrusion detection systems (IDS) that can detect attacks in a variety of situations. Various abuse and abnormal detection strategies have been used.Many of the existing technologies are complementary, as certain approaches perform better in specific settings than others. This survey came up with a new intrusion detection system (IDS). The classification method comprises of two parts: the detection theory of the intrusion detection system "IDS" and the operational components. This is part of our project.

KEYWORDS: RF, ANN.

1.INTRODUCTION

▸ **Machine Learning:**

In the context of statistics, machine learning is called an application of artificial intelligence where accessible data is processed or algorithmically assisted in the processing of statistical data.

Machine learning relies on automation, but it still requires human monitoring.

Machine learning requires a high degree of generalization to create a system that works well with data samples that have not yet been encountered.

Machine learning is a new discipline of computer science that incorporates a wide range of data processing techniques.

Some of these techniques include (for instance logistic regression and principal component analysis) are based on well-established statistical methods, whereas others are not.

Objective of Project:
▸ To avoid data loss.
▸ More throughputs.
▸ To reduce time consumption.
▸ Continuous energy check up of all data to avoid communication failure.
▸ To find the intruder at the early stage

Computer Network Security will show you how to detect malware. The basic idea is to reuse system
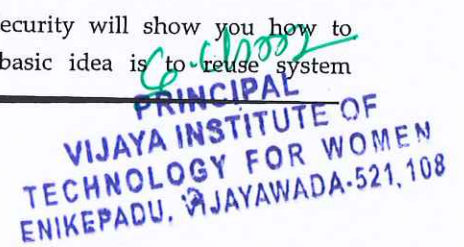
Investigation into a Management System for Key Combinations, Centered Around Identity Authentication

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ABSTRACT

Because of the high volume of enormous information, Cloud Computing is powerful solution for storing huge amounts of information in the cloud, as the cloud can reserve and handle a high volume of clients.ABE is a promising way to make sure that huge amounts of information in the cloud are safe. A minor execution gives the person who owns the information a chance to get it back, freeze it under the new access rules, and then send it back to the cloud. Additionally, we propose various strategy calculations for access strategies.Also, we suggest a smart and safe way for the people who own the data to check if the cloud server has updated the figure messages correctly

1.INTRODUCTION

The general and simple way of protecting cloud outsourced files is to encrypt data files before uploading them to cloud storage.Despite the fact that the data file encryption algorithms do seem to be publicly available, the data files seem to be secure since this key used only for encryption and decryption is kept under wraps. As an outcome, key generation & distribution were indeed crucial issues in cloud computing. The key should always be extremely safe so that nobody can reach the transmitted data files.Encryption of the entire cloud would also secure the data by encryption and decryption with a key. Still, it will only prevent a few limited people from access and it can't be secure if the private key is leaked to unwanted people who will lead to the disclosure of a secret file in the cloud.

[16]Cloud computing is where the owner of the data stores the large scale of data for subsequent processing.The data should be encrypted using the cryptographic method where owners need to maintain full authority over security keys.Using an encryption management tool before encrypting your data will help protect data from data loss.The encryption keys should be kept secret from cloud providers.

Key Management is in which data is encrypted and decrypted using the use of encrypted keys.Keys make sure the safe data transmission across the internet.Security requirements for key management are
1.Access: only authorized users can access encryption keys.
2.the data should be protected from swindling
3.Unintended use of keys: these keys should be used for
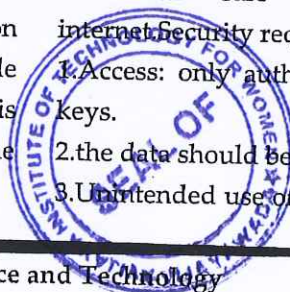
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Using Random Forest and the Cart algorithm to Detect Fraudulent Use of credit Cards

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To Cite this Article

Article Info

ABSTRACT

*In this research article, we emphasis on detecting credit score card theft actual conditions. In this situation, detecting credit card theft is totally dependent on fake money processing. Credit card theft will occur either virtually or physically, in general. However, internet fraud transaction activities are on the rise in today's climate. So, if you want to spot internet fraud, the present machine applies a range of strategies. In the suggested computer, we practice the RFA to locate counterfeit processings & determine their correctness. This method employs a supervised learning technique that employs decision trees for each dataset type. After categorising the dataset, a lattice of perplexity is generated. The lattice of perplexity is used to assess the Random Forest Algorithm's overall performance. The correctness of the findings obtained by processing the dataset is approximately 90%.*

KEYWORDS: *Credit Card Fraud Detection, Transactions, Organization Technique, RFA*

1.INTRODUCTION

Credit card fraud is on the rise. Both online and physical transactions can be used to commit credit card fraud. Physical cards are necessary in offline transactions, whereas virtual cards are required in online transactions for unlawful or fraudulent activity. As a result, credit card fraud may result in a large number of fraudulent transactions without the knowledge of the genuine customers. Fraudsters are looking for sensitive information such as credit card numbers, bank account numbers, and other user information that will be used to conduct transactions. In the case of offline transactions, fraudsters must steal the person's credit card to complete the transaction, whereas in the case of online transactions, fraudsters must steal the user's identity and online information to complete the transaction. As a result, credit card fraud has emerged as the most serious issue in today's modern world, which is plagued by problems with bank transactions. There are several ways for detecting fraud transactions based only on transaction behaviors, and these tactics can be classified as supervised mastery and unsupervised studying algorithms. As a result, credit card scam has appeared as most serious problem in today's modern creation, which is plagued by problems with bank transactions. There are several ways for sleuthing scam transactions constructed only on transaction behaviors, and these tactics can be classified as supervised mastery and unsupervised studying algorithms. Cluster Analysis, Prevision Vector Machine, Nave Bayer's Classifications and other
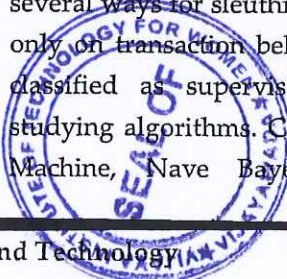
An Investigation on the Use of Machine Learning to Make Predictions Regarding Medical Records

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ABSTRACT

Critical Patient with Flexibility In developing countries like Bangladesh, caring devices are a major issue. Due to a lack of acceptable, simple, and scalable intelligent systems, most medical institutions in Bangladesh are unable to supply appropriate fitness providers. The goal of this project is to create a gadget that will allow hospitals to provide crucial patients with real-time feedback. In this study, we propose a time-tested architecture, related terminology, and a classification mannequin for monitoring critical patient fitness status using machine learning and IBM cloud computing as Platform as a Service (PaaS).The basic idea of this study is to estimate the patients' fitness using Machine Learning (ML). The platform for this query to shop and keep our information and ml models is IBM Cloud, IBM Watson Studio. We used Nave Bayes, Logistic Regression, KNeighbors Classifier, Decision Tree Classifier, Random Forest Classifier, Gradient Boosting Classifier, and MLP Classifier as Base Predictors for our ML models. The bagging strategy of ensemble getting to know was employed to improve the model's accuracy. Bagging Random Forest, Bagging Extra Trees, Bagging KNeighbors, Bagging SVC, and Bagging Ridge are the algorithms used for ensemble learning.For real-time statistics and record viewing, we created the "Critical Patient Management System - CPMS" cellular utility. The device structure is structured in such a manner that the ml models may educate and install in real-time by retrieving data from IBM Cloud, and the cloud records can also be retrieved through CPMS at a specified time period. The ml fashions will forecast a patient's situation to aid the physicians. If the prognosis based on the situation worsens, the CPMS will send an SMS to the responsible physician and nurse, requesting quick attention to the patient. The venture may also act as a smart healthcare solution when combined with the ml designs and cellular application.

1.INTRODUCTION

A Critical Patient Care or Monitoring System is a technique in which a doctor may always monitor more than one patient for more than one parameter at a time at a remote location and also have control over medicinal drug dose. These systems would greatly assist the development and evaluation of ICU decision-support frameworks. Devices like as vital sign monitors, mechanical ventilators, and dialysis devices, among others, are used to assist critical patients whose bodies require time to heal. The majority of the equipment are operated manually by monitoring the patient's condition and reviewing reports. As a result, we decided to use modern technology to automate the system and decision-making capabilities, like auto deployable computer learning trends and cloud computing.Machine learning methods can anticipate the patients' near-future situation, whether or not their situation will worsen or

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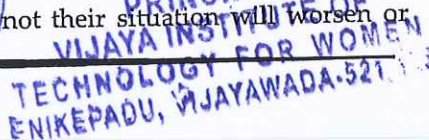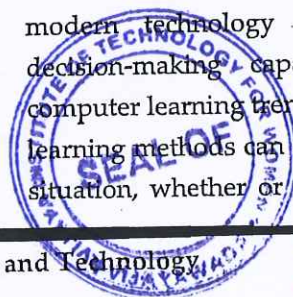
Enhanced behaviour of the Adaptive Neuro-Fuzzy Inference System (ANFIS) algorithm in comparison to Artificial Neural Networks (ANN) in the use of geoelectrical resistivity data

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**To Cite this Article**

Article Info

ABSTRACT

Soft computing techniques are widely used for many non- linear problems in the real world. Many Earth's nonlinear characteristics exhibit uncertainty problems that have to be interpreted with advanced soft computing tools. Ambiguity always presents in realistic processes. The efficiency of knowledge–based systems depends upon the algorithms, which are cumbersome as their implementations require extensive computational time. Here, we present a work about interpreting the subsurface parameters of the Earth from electrical resistivity data using the Artificial Neural Networks (ANN) and Adaptive Neuro-Fuzzy inference (ANFIS) techniques. We focus on the advantage of the hybrid neuro-fuzzy systems, compared with the Artificial Neural Networks (ANN), in efficiency in interpreting electrical resistivity data. Hybrid systems that fuse fuzzy systems and neural networks (NN) have been propounded for utilizing numerical data. It expected that ANFIS can be used in many nonlinear problems. The network model is successful in training with large number of self-generated synthetic data sets. The interpretation using the ANFIS technique gave promising results with better accuracy, compared with the ANN inversion. Problems with parameter estimation can be solved more efficiently with this ANFIS geoelectrical resistivity inversion algorithm.

KEYWORDS: Neuro-Fuzzy Inference System, Artificial Neural Networks, subsurface parameters, electrical resistivity inversion

1. INTRODUCTION

The Neuro-fuzzy approach is becoming one of the major areas of interest because it gets the benefits of neural networks as well as of fuzzy logic systems and it removes the individual disadvantages by combining them on the common features. Different architectures of neuro-fuzzy system have been investigated by number of researchers. These architectures have been applied in many applications including the interpretation of geoelectrical resistivity data. Neural Networks and fuzzy logic have some common features such as distributed representation of knowledge, model-free estimation, the ability to handle data with uncertainty and imprecision etc. Fuzzy logic has tolerance for imprecision of data, while neural networks have tolerance for noisy data. The most widely researched of all hybrid systems at the
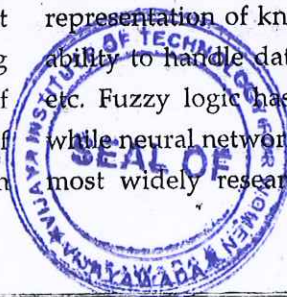
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Challenges and Opportunities Presented by the Application of Financial Mathematics to the Stock Market

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ABSTRACT

Financial mathematics in share market is the merchandise of applying mathematics to portfolio choice theory and option pricing theory. With the rapid development of the profitable situation, the products and derivatives of the financial industry are continuously optimized and innovative, and new financial goods and services are gradually increasing. The operation of financial markets, the blueprint and pricing of financial derivatives, and the analysis and supervision of risk become very imperative, and the research and development of financial mathematics is fetching more and more important. Therefore, it is of realistic significance to analyze the specific application of mathematics in the monetary field.

Financial mathematics, also called investigative finance, mathematical economics and mathematical finance, is an interdisciplinary focus of mathematics and finance that arose in the late 1980s and early 90s. Financial mathematics in share markets chiefly uses the modern mathematical theory and method (such as stochastic analysis, stochastic most advantageous control, portfolio analysis, nonlinear analysis, multivariate arithmetical analysis, mathematical programming, up to date computational methods etc.) of financial (including banking, speculation, bonds, funds, stocks, futures, options and other financial instruments and markets) analysis the number of theory and put into practice. The core problem is the selection theory of the optimal outlay strategy and the asset pricing theory under the doubtful condition. Financial mathematics not only have a direct effect on the novelty of financial instruments and financial markets in the share markets, drive efficiently, but also for the company's investment decision-making and assessment of project research and development (such as real options) and menace management in financial institutions has been extensively used.

KEYWORDS: financial, mathematics, share, market, challenges, model

1. INTRODUCTION

Applying arithmetics to the financial field is based on some financial or economic assumptions, and uses abstract mathematical methods to build mathematical models of how the financial mechanism works. Financial mathematics chiefly includes the basic concepts and methods of mathematics, the associated natural science methods and so on.[1,2]

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A Study of Mutual Funds with Prefernce for the Banking Sector (NSE)

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ABSTRACT

Mutual fund investment has lot of changes in the recent past, and investors mentality and their expectation are changing in the present scenario. Investors preference towards return, risk varies often. The investor should compare the risks and returns before investing in a particular fund. For this, he should get the advice from experts and consultants and distributors of mutual fund schemes. The investors can invest in the mutual fund and can be to get more benefits. Periodically checking up on how the mutual fund is doing is important, and there are lots of measures that the investor can use to perform the checking. A funds track record may be the single most important factor that an investor checks before opting for a mutual fund product. Hence evaluating funds is important before investing. But it is becoming increasingly important for investors to take note of other parameters too, while deciding between mutual funds. Of course, investors need to weigh the savings on expenses against the performance record before choosing a fund. Over the past decades mutual funds have grown intensely in popularity and have experienced a considerable growth rate. Mutual funds are popular because they make it easy for small investors to invest their money in a diversified pool of securities. As the mutual fund industry has evolved over the years, there have arisen many questions about the nature of operations and characteristics of these funds. Thus the fund evaluation process helps the investors to know more about the funds and its performance.

KEYWORDS: Asset Management Companies, Performance, Tax Saving Schemes.

1. INTRODUCTION

The **National Stock Exchange of India Ltd. (NSE)**, set up in the year 1993, is today the largest stock exchange in India and a preferred exchange for trading in equity, debt and derivatives instruments by investors. NSE has set up a sophisticated electronic trading, clearing and settlement platform and its infrastructure serves as a role model for the securities industry. The standards set by NSE in terms of market practices; products and technology have become industry benchmarks and are being replicated by many other market participants. NSE has four broad segments Wholesale Debt Market Segment (commenced in June 1994), Capital Market Segment (commenced in November 1994) Futures and Options Segment(commenced June 2000) and the Currency Derivatives segment (commenced in August 2008) Various products which are traded on the NSE include equity shares, bonds, debentures, warrants, exchange traded funds, mutual funds, government
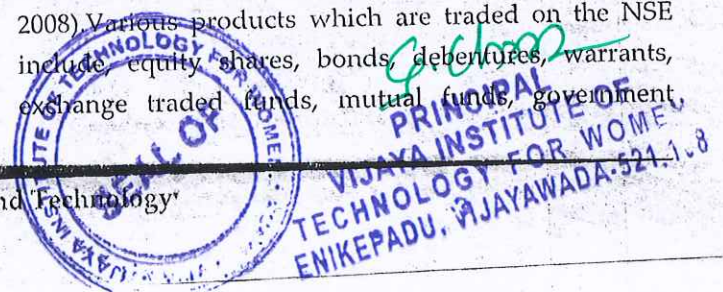
An Examination of the Volatality of the Equity Shares of chosen Cement Companies traded on the National Stock Exchange

K. Swaroop, Dr.G. Madhu Sri, T. Leela Bhanu, K. Sai Sowjanya

Department of Business Administration, Vijaya Institute of Technology for Women, Enikepadu, Vijayawada.

ABSTRACT

Volatility Equity shares helps the investors or players in the capital market to find out the buy and sell signals about shares on the basis of quantity of risk thereon. In this paper researchers examine the volatility in equity share prices of selected units under study. To measure the volatility, the prices (for the financial year 2014-2016) of Ambuja cement Ltd. ACC cement Ltd & Ultra Tech Cement ltd. were analyzed with the help of statistical tool like, Mean, Variance, Standard Deviation, Beta, T- Statistics. It was concluded that volatility analysis is a faithful analysis to measure the risk on financial assets and it also helpful to take short and long position in the market.

KEYWORDS: Short Position, Volatility, Security, Long Position, Market.

1. INTRODUCTION

Volatility measures the variability of changes in stock prices which helps to know the risk of a financial instrument. Prices of securities move positive and negative every day in the stock markets. Fluctuation in prices of a security comes from the unstable demand and supply of that security. If supply side is greater than its demand, the price would start to go down and if demand side of a security is greater than its supply, the price would start to go up. The relative rate of fluctuation at which price of a security moves up and down is called volatility. It means if volatility increases in the prices of a financial instrument, the risk also increases on that instrument. The volatility does not measure the direction of prices but it measures the desperation among the prices which helps to know the risk on an instrument. On the basis of risk on an instrument, investors can analyze their capacity to bear risk and also can make decisions relating to invest their excess fund in financial assets.

Volatility can be calculated by using standard deviation or variance between returns from that same security or market index. In back, instability (image σ) is the level of variety of an exchanging value arrangement after some time as measured by the standard deviation of logarithmic returns. Historic volatility is derived from time series of past market prices. An inferred instability is gotten from the market cost of a market exchanged subordinate (specifically an alternative).
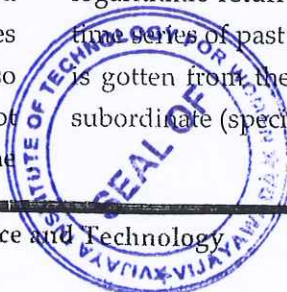
A Study on the Role of Finance in Logistics Management with reference to Tamilnadu State Road Transport of India

Dr. P. Subbaiah, Dr.G. Madhu Sri, K. Sai Sowjanya, K. Swaroop

Department of Business Administration, Vijaya Institute of Technology for Women, Enikepadu, Vijayawada.

ABSTRACT

Logistics is generally the detailed organization and implementation of a complex operation.In a general business sense, logistics is the management of the flow of things between thepoint of origin and the point of consumption in order to meet requirements of customers orcorporations. The results indicate that ttransporters are not happy with the approach of RSOofficials. They are facing issues with regard to the condition of vehicles during transit,availability of the drivers and retention of the drivers. The condition of vehicles receivedfrom distant locations is found to be bad

1. INTRODUCTION

Logistics, as a business concept, evolved only in the 1950s. This was mainly due to the increasing complexity of supplying one's business with materials, and shipping out products in an increasingly globalized supply chain. The experts in this field are called Supply Chain Logisticians. This can be defined as having the right item in the right quantity at the right time at the right place for the right price and to the right target customers or end-users and it is the science of process and has its presence in all the sectors of an industry. Logistics is concerned with getting or transmitting the products and services where they are needed or when they are desired. It is difficult to accomplish any marketing or manufacturing operation without logistical support. Logistics involves in the integration of information, transportation, inventory, warehousing, material handling, and packaging. The operating responsibility of logistics is the geographical repositioning of raw materials, work in process, and finished inventories where required at the lowest cost possible. Logistics management is that part of the supply chain which plans, implements and controls the efficient, effective, forward and backward (reverse) flow and storage of goods, services and information between the point of origin and the point of consumption in order to meet customers' requirements rather than the customers' delight. A professional working in the field of logistics management is called a Logistician. The primary objective of logistics management is to move effectively and efficiently, so as to extend the desired level of customer service at the least cost. Thus, logistics management starts with ascertaining customer's needs till their fulfillment through product supplies. Indian
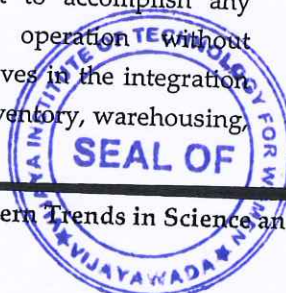
Employee Welfare Measures in Bharat Heavy Electronics Limited (BHEL) with reference to Ramachandrapuram, Hyderabad.

T. Leela Bhanu, Dr. P. Subbaiah, Dr.G. Madhu Sri, K. Sai Sowjanya

Department of Business Administration, Vijaya Institute of Technology for Women, Enikepadu, Vijayawada.

ABSTRACT

In this study the operation function in the human resource department are analyzed through contribution of employees and their opinion about the function performed by the employees and their opinion about the function performed by the HR department in Bharat Heavy Electricals Limited (BHEL), Ramchandrapuram, Hyderabad.

The employees in the organization are directly interviewed and related data's were collected through questionnaire. The study was conducted to know the impact of employee welfare facilities on employee work satisfaction. Welfare is the provision of a minimal level of well-being and social support for all citizens. Organization provides welfare facilities to their employees to keep their motivation levels high.

The primary objective of the study is to measure the levels of satisfaction of employees with regards to welfare facilities and to suggest some measures for improving welfare measures in organization. Researchers were supported by sampling 100 employees from various departments. Data was collected through the structured welfare measures questionnaire. The data's are analyzed through parentage analysis and correlation method.

KEYWORDS— Welfare measures, employee satisfaction, employee welfare facilities, organization

1. INTRODUCTION

Employee welfare means anything that can be done for the comfort and improvement, intellectual or social, of the employees over and above the wages paid which is not a necessity of the industry. Organization provides welfare facilities to their employees to keep their motivation levels high. The employee welfare measures are classified into two categories viz. statutory and non-statutory welfare measures. The statutory measures are those measures that are compulsory provide by an organization as compliance to the law governing employee health and safety, these includes: canteen facilities, drinking water, proper and sufficient lighting, facilities for sitting, changing rooms, first aid appliances, latrines and urinals, washing places, spittoons and rest rooms. Non statutory welfare measures may include: personal health care, flexi-time, employee assistance programs. The non-statutory measures differ from organization to organization and from industry to industry. Some of the facilities are

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Techniques for Converting Sign Language and Spoken Words into Text Using Raspberry Pi

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To Cite this Article
V.Devasahayam, P.Jashuva, Naveen Sagar, G.Anusha, M. Syamili and Md.Zaheer Fathima. Techniques for Converting Sign Language and Spoken Words into Text Using Raspberry Pi. International Journal for Modern Trends in Science and Technology 2022, 9(SI01), pp. 44-48. https://doi.org/10.46501/IJMTST09SI0108

Article Info

ABSTRACT

Every day we see many people facing illnesses like deaf, dumb, etc. They face difficulty to interact with others. Previously developed techniques are all sensors based and they didn't give a general solution. This work explains a new technique of virtual talking without sensors. Web Camera is used to take the image of different gestures and that will be used as input to the OpenCV with Python. The software will recognize the image and identifies the text output which is displayed on the screen. This work explains two-way communications between the deaf, dumb and normal people which means the proposed system is capable of converting sign language and speech into text.

Keywords: Raspberry pi, Sign language, Web Camera.

1. INTRODUCTION

With the rapid development of computer technologies, devices/techniques have become indispensable in our daily lives. Human-computer interactive (HCI) devices such as personal computers, consumer electronics, mobile devices, etc., have also dramatically altered our lifestyle. The ease with which an HCI device can be understood and operated by users has become one of the major considerations when selecting such a device. Therefore, researchers must develop advanced and user-friendly HCI technologies which can effortlessly translate users' intentions into corresponding commands without requiring users to learn or accommodate the device. Many technologies have been developed to intuitively express users' intentions, such as handwriting, human body language, and gestures to naturally control HCI devices. These technologies have many applications in the fields of remote control, virtual reality, sign language, signature authentication, sports science, health care, and medical rehabilitation.

Deaf and Dumb people depend on sign language for communication. A real-time Sign Language Recognition system was designed and implemented to recognize 26 hand signs from the Indian Sign Language (ISL) by hand gesture/sign recognition system for text generation. The hand gestures are captured by using a webcam. These signs are processed for feature extraction using some color models. The extracted features are compared by using a pattern-matching algorithm. To calculate the sign recognition, the features are compared with the testing database. Finally, a recognized gesture is converted into text. This system provides an opportunity for deaf-dumb people to communicate with those who cannot

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IoT-Based Parking Space Detection System Employing Android Software

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To Cite this Article
V. Deva Sahayam, S.Ratna Spandana, P.Silpa, E.Ravi Kumar and M.Kusuma Kumari. IoT-Based Parking Space Detection System Employing Android Software. International Journal for Modern Trends in Science and Technology 2022, 9(SI01), pp. 49-54. https://doi.org/10.46501/IJMTST09SI0108
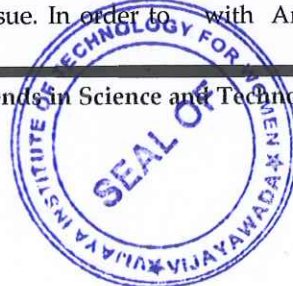
ABSTRACT

With the increase in extent of population in Urban and Metropolitan cities, the problem of parking the vehicles are increasing day by day and it has become a major task to identify the parking spaces in markets, malls and multiplex etc., which consumes the driver's time as well as fuel. If the driver is unable to find any parking space and parks the vehicle in a road side, then the problem of traffic arises. Further, the security of the vehicle is also a major issue. In order to overcome this aspect, in this study, an IOT based parking slot detection utilizing the android application is proposed and reported. Internet technology is utilized so as to connect the physical objects by using a mobile phone with Arduino UNO, sensor's, wi-fi module, cloud database to store the user data. The mobile application acts as an interface between the end user and the system. Infrared (IR) sensor is installed at the parking slot along with Arduino. The sensor is utilized to detect the occupancy or non-occupancy of the parking slot and is updated to the cloud by utilizing Wi-Fi based Internet service. The Arduino is utilized to track the number of vehicles that are parked in the parking area. With the help of this technology, the user can be able to check the availability of the parking space near to him and reserve the parking slot utilizing the mobile application.

Keywords: Arduino UNO, Infrared Sensor, RFID, Servomotor, Wi-Fi

1. INTRODUCTION

In general, every human visit certain places like cinema halls, malls, markets etc., and the one common problem for everyone is parking of vehicles. With the increase in extent of population in Urban or metropolitan cities, the problem of parking the vehicles are also increasing day by day. Identification of suitable parking space has become a tedious task for the vehicle drivers and it consumes more time and also fuel. If the driver is unable to find any parking space and parks the vehicle in a road side, then the problem of traffic arises [1]. Further, the security of the vehicle is also a major issue. In order to

solve the problem of parking in urban or metropolitan cities, a smart parking system should be developed and implemented by which the user/driver can be able to park their vehicles. In this study, an IOT based parking slot detection utilizing the android application is proposed and reported. Internet technology is utilized so as to connect the physical objects by using a mobile phone with Arduino UNO, sensor's, wi-fi module, cloud database to store the user data[2]. The mobile application acts as an interface between the end user and the system. Infrared (IR) sensor is installed at the parking slot along with Arduino. The sensor is utilized to detect the

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Machine Learning-Based Methods for the Detection and Prevention of Plant Diseases

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To Cite this Article
Dr.G.Chenchamma, M.Saranya, K.Raja Rajeswari and N.Naveen Sagar. Machine Learning-Based Methods for the Detection and Prevention of Plant Diseases. International Journal for Modern Trends in Science and Technology 2022, 9(SI01), pp. 55-59. https://doi.org/10.46501/IJMTST09SI0110

ABSTRACT

Nowadays, technology is advancing at a rapid pace, and farmers are employing a variety of techniques and technologies to better their farming operations. Plants are the most significant source, and when they are infected with illnesses, it results in food shortages and economic losses. The majority of illnesses are first noticed on the plant's leaves and stems. As a result, image processing and machine learning may help to identify ailments and recommend treatments for them. Using the image extraction process, image processing includes procedures such as image acquisition, image processing, image segmentation, and classification. As a result, the man's main goal is to figure out what is causing the disease in order to save the farmers money. Machine learning is a key component of artificial intelligence that produces outcomes without the need for human intervention. This can be done with Python programming we can get the output extremely accurately and quickly using this project.

KEYWORDS : Agriculture,artificial intelligence,image processing,image acquistion,image segmentation,extraction,machine learning.

1. INTRODUCTION

Agriculture is extremely important in today's society. Plant disease is the leading cause of economic food losses in the agriculture sector around the world. Food losses are caused by a variety of plant diseases, including bacteria, viruses, and fungi. We must take some precautions to reduce the risk of other diseases. It is taking less time to identify cures for those plant ailments these days. Because technology advances at a rapid pace. The most frequent plant disease was discovered by farmers have a lot of experience in agriculture, and they simply use a few basic treatments for those ailments.Farmers, on the other hand, are unable to treat some undiscovered ailments.As a result of these experiments, we can "identify and prevent plant disease using machine learning."Machine learning is the concept that a computer program can learn and adapt to new data without human intervention. Machine learning (ML) is the study of computer algorithms that can learn and develop on their own with experience and data. It is considered to be a component of artificial intelligence. Machine learning algorithms create a model based on training data in order to make predictions or judgments without having to actively do so.

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Tracking Your Location Using Your Node MCU Without Using A GPS Module

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ABSTRACT

The need for location tracing is vast. GPS (Global Positioning System) is most widely used for location tracing. The Current method of tracing has some issues due to the accuracy of GPS receiver. A GPS receiver needs a clear view of sky to receive information from GPS satellites and weak signal will not provide desired results. Another problem is the size and power consumption. In addition to these issues GPS trackers produce data traffic which adds cost and consume further. This work is based on the geo location API and node MCU ESP 12E board to find the location without GPS module. We propose using serial monitor of Arduino IDE to see the coordinates.

Key words: GPS, geolocation API, Node MCU, location tracking

1. INTRODUCTION

Geolocation is the process of finding, determining and getting the exact location of a computer, networking device or equipment. It helps us to view the device location based on geographical coordinates measurments. Geolocation commonly uses Global Positioning System (GPS) and other related technologies to assess and specify geographical locations. It provides the location of a device but is generally used in variety of applications to help locate human users. Geolocation is a technology that works through a pre-built GPS in a device that propagates the devices longitudinal and latitudinal coordinates. The coordinates are identified on a map to provide a complete address that usually includes a country, city ,town/colony ,building name and street address. In this project we will be using Breadboard Node MCU Google location API in order to track down the most precise geographical location of the entity. The Node MCU component makes the system extremely efficient and user-friendly to work with and implement. We can trace location any device without GPS module only using NodeMCU.

2. LITERATURE SURVEY

Manav Singhal1 , Anupam Shukla2[1]**Implementation of Location based Services in Android using GPS and Web Services** published in international journal of computer science ,from this paper we have learnt the location based services that are present in android through which we can get the location.This paper has working of geolocation API that id being adopted in the proposed design.It has all the location based services that are present in android.

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Cloud-based innovative agricultural service platform that makes use of LoRa

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ABSTRACT

The expeditious growth of the Internet and Internet of Things (IoTs), a variety of useful service applications are being deployed in a variety of industries. Innovative agriculture service system is a new agricultural information and communication Technology (ICT) that was developed in recent years to meet the needs of farmers for data gathering, signal processing, data analysis, and equipment control. This paper presents an innovative agriculture service platform based on LoRa Technology and a wireless sensor network. This study uses LoRa as a network transmission interface to solve the communication challenge while also conserving energy. To assist with environmental monitoring and to improve things, an innovative agriculture service platform tool was designed.

KEYWORDS: LoRa, Innovative Agriculture, Cloud, Wireless Sensors.

1. INTRODUCTION

Many people in our modern world make extensive use of technology, and as a result, they are doing their job soon and well. But still, many rural farmers cannot use technology more people are doing so. In addition, due to an increase in the world population, the need for food is increasing. IOT (Internet of Things) tends to create specific techniques in the meantime to increase food production in agriculture field. The farmers can also get useful information regarding the Ph, moisture, water level and soil requirements. So, we are designing this innovative agriculture service system for them.

Farmers can use this method to check the temperature, humidity, and soil moisture, PH value of their farm, which is done by various IOT sensors like Humidity,

Temperature, Soil moisture, as well as control various components, like motor, etc. This system is very easy and simple to use, it works wholly on wireless technology. To use this system the farmer has to place the transmitter module in different places in his field with the assistance of this system, and the receiver is placed in his home. Now, the farmer can monitor and operate the system by the website or mobile application.

As previously said, this system is built using wireless technology, which we are already familiar with wireless protocols like Bluetooth low energy, Wi Fi, and cellular, Many people in our modern world make extensive use of technology, and as a result, they are doing their job soon and well. But still, many rural farmers cannot use technology more people are doing so. In addition, due to

Micro strip Patch Antenna of 4.4 GHz Frequency Designed for Drone Application

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ABSTRACT

This paper proposes design of 4.4GHz Microstrip Patch Antenna (MPA). In the design, patches are mounted on Arlon AD270 (tm) substrate having dielectric permittivity. Microstrip Patch Antenna is designed by using edge feeding technique. The VSWR measurement becomes zero at 4.4GHz resonant frequency. The Bandwidth, Quality factor and some other parameters are more efficient compared to other techniques. This project helped us to achieve 95% of efficiency.

KEYWORDS: Microstrip Patch Antenna, 4.4GHz, Edge Feed, HFSS Simulation Software

1. INTRODUCTION

Antennas are key components of any wireless system . An antenna is a device that transmits and/or receives electromagnetic waves. Most antennas are resonant devices, which operate efficiently over a relatively narrow frequency band. An antenna must be tuned to the same frequency band that the radio system to which it is connected operates in, otherwise reception and/or transmission will be impaired. The receiving antenna as a part in the system is responsible of turning the electromagnetic waves into its original form (electrical signal in wire). The properties of the transmitting and receiving antennas are fully represented by Maxwell's equations. The dipole antenna was the first type of antenna to be ever used and the simplest one to study and understand, it is a straight wire fed from the center. To tune the wire to be effective to transmit and receive electromagnetic waves, the length of it should be half the wavelength of the operating frequency. We can say that antennas are the backbone and almost everything in the wireless communication without which the world could have not reached at this age of technology.

2. MICROSTRIP PATCH ANTENNA

Microstrip antenna (also known as a patch antenna) is one of the latest technologies in antennas and electromagnetic applications. It is widely used now days in the wireless communication system due to its simplicity and compatibility with printed circuit technology. Microstrip geometries which radiate electromagnetic waves were originally contemplated in the 1950s.

The concept of microstrip antenna was first proposed by Deschamps in the year 1953. Gutton and Baissinot presented a patent in on the microstrip in the year 1955.

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Deep learning for the purpose of speech and motion recognition

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ABSTRACT

Speech emotion recognition has progressed from a specialty to a critical component of Human-Computer Interaction(HCI). These systems strive to make natural human-machine contact easier by using direct voice interaction rather than standard devices as input to understand verbal information and make it simple for human listeners to react. Dialogue systems for spoken languages, such as cell center discussions, onboard car driving systems, and the use of emotion patterns from speech in medical applications are just a few examples. Numerous strategies have been used to extract emotions from signals in the literature of speech emotion recognition (SER), including many well-established speech analysis and classification techniques. The feature extraction and feature classification phases are the most important parts of the speech emotion recognition(SER) process. Researchers have derived several features such as prosodic features, vocal traction features and other hybrid features for speech processing. The second phase includes feature classification using deep learning techniques. These techniques are recently proposed as on alternative to traditional techniques in SER.

KEY WORDS: Feature extraction, prosodic features, vocal traction features, Feature classification, Deep Learning techniques.

1. INTRODUCTION

1.1 Brief information about the project:

The ability to notice, interrupt and respond tosocialinteractions, which is usually assessed through effective expressions is one of the corner stones of human communication understanding emotion expressions can increase the efficiency and complexity of human-machine interaction by improving the processing and responsiveness of automatic emotion detection system, such as robots or experted systems to natural human behavior. If a robot can recognize human emotion expressions, it can change how it interacts with its surroundings. It can increase its problem-solving abilities by incorporating these expressions into a decision-making process. Emotional expression recognition has been a frustratingly tough topic that has drawn a lot of attention in recent years. There is no unanimity intheliterature on how to define emotions, yet features, prosodic features, vocal traction factors and other hybrid features are all examples of hybrid features using linear and non-linear classifiers.

The second phase involves feature classification Bayesian networks (BN) or the maximum likelihood principle (MLP) and support vector machine (SVM) are two of the most often used linear classifiers for emotion reorganization. The voice signal is usually considered

Automatic speaker recognition that is not based on the presence of text utilizing machine learning

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ABSTRACT

In the past decades, security is the main for everyone, and processing of security by the voice control. In this condition, security is designed by speaker voice command and speaker recognition for a short duration of text speech samples. In speaker recognition systems, the processing by Gaussian mixed models is impaired by low quality and short duration of the speech. We are proposing this project for forensic-based voice and speaker recognition and that way we are taking the voice and comparing it with the recorded voice. The voice matched and speaker recognition by preprocessing and recognized by machine learning. In this project, a large number of best material selection criteria were described, suitable for the scoring stage in forensic automatic speaker recognition systems. An application of quality-based speaker features performs outperforms forensic speaker recognition systems that assume the uniform quality of speech during model training and scoring. The speech(or)speaker recognition was described by the combination of discrete wavelet transform (DWT) and Relative Spectral Perceptual Linear Prediction (RASTA-PLP) for feature extraction. This process of speaker recognition is enhancing the performance of more features from the speech signals and applying other computation techniques to lead to the improvement of recognition rate and computational technique if noisy speech signal is present, then separating/extracting the original by DWT and Mel-frequency cepstral coefficients (MFCCs)

Keywords: Speaker recognition, voice comparison, Gaussian mixture model, machine learning, discrete wavelet transform (DWT), MFCC

1. INTRODUCTION

In past years, an increasing interest in security systems has arisen. These systems are very useful as they allow managing security in a very efficient way, reducing human resources. Most security systems were implemented by an access control system. In this way, a vast number of security resources by voice commands and speaker recognition in this process of verifying people's identity by their voice. For security purposes, the voice recognition systems are used as a biometric system performance that will allow the control to access in fast response way and low intrusive way and reduced collaboration of people voice samples in comparison

The voice/sound generated by humans is peculiar or different from each other. the voices are generated by

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Human Emotion Recognition Based on EEG Signal Using Deep Learning Approach

Shaila S.G.[a] ✉ ; Sindhu A.[a]; Shivamma D.[a] ✉ ; Suma Avani V.[b]; Rajesh T.M.[a] ✉
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Abstract

Nowadays, emotion recognition and classification plays a vital role in the field of human–computer interaction (HCI). Emotions are being recognized through body behaviors such as facial expression, voice tone, and body movement. The present research considers electroencephalogram (EEG) as one of the foremost used modality to identify emotions. EEG measures the electrical activities of the brain through a bunch of electrodes placed on the scalp. This mechanism is used due to its high temporal resolution with no risks and less cost. Over the last decades, many researchers involved EEG signals in sequence to cope up with brain-computer interface (BCI) and to detect emotions. It includes removing

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In millimeter multi-input multi-output (MIMO) systems, signal processing is critical to support the detection and estimation of next generation millimeter wave communication channels. Due to the large number of antenna arrays used in transmitter and receiver, as well as mixed signal and radio frequency power limitations, new MIMO communication signal processing techniques are required. Two realistic millimeter waves can be seen as key targets. •The first is the massive MIMO channel matrix, which is necessary in millimeter wave systems because they require more displays at source and recipient to achieve adequate connection edge. •Another point is that the sum of RF manacles that can be used in the set of transmitters and receivers is limited due to power and cost limitations. From mmWave MIMO, this research provides an accurate two-stage channel valuation system. First we use basic Bayesian learning to get a rough estimate of the channel. By maximizing the probability function in the second stage, the performance of mmMIMO is improved in the second stage. Compared with competitors, the performance of the proposed system is significantly better, and the computational complexity is moderate.

A Cluster Based Framework-Improved Expectation Maximization for Identification of Somatic Gene Clusters

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Abstract. The early identification of the cancer disease is the key objective of this paper. Machine learning algorithms contribution is significant for early recognition of somatic mutations in cancer patients. So the study of classification and clustering places a vital role in predicting the somatic mutations. As the size of gene variants and somatic mutations in the tumor increases, it is essential and effective to predict the disease patterns using the machine learning models. In this proposed work, a novel framework is designed and implemented on the somatic cancer datasets. In this work somatic mutations are clustered using the related features of gene sequences by using the proposed Improved Expectation maximization (IEM) model. On each cluster, AdaBoost classifier is applied to classify somatic mutations.Experimental results proved that the proposed clustering algorithm IEM is better than the traditional approaches in terms of cluster quality rate. The overall classification accuracy for all the clusters is also satisfactory.

Keywords: Somatic Mutations, Improved Expectation Maximization, Classification and Clustering.

1. Introduction

Somatic mutations presence constitutes a major part in tumor cells. Somatic mutations association provides vision into the mechanism of mutation development consequences a cancer therapy. Cancer is caused by the combination of conservational, genetic and lifestyle aspects. The main work concentrated on the somatic mutations is to analyze the identification of tumor cells. The analysis of this data mainly focused on the identification of recurred mutated cells. For evaluating and bringing out the various types of cancer categories in analyzing the data is to group the associated data values into various clusters basing on their similarities. One among the machine learning's clustering method is Expectation Maximization (EM) [1] technique. It was developed by Rubin, Dempster and Laired. It is an un-supervised learning technique. The number of clusters to be projected configures the input. EM paths the repetitive structure in order to get the maximum probability of expected maximum likelihood of attributes. As it follows the iterative structure and performs the E-step [2] which approximates the likelihood of every point fitting to each and every cluster, and M- step[2], which re-estimates the parameter vector of the probability distribution of every class .This process will be repeated until the maximum saturation value reached beyond knowing the details of cluster formation. There by it maintains high computational cost. A variation of EM technique called Improved Expectation Maximization (IEM) technique is proposed in this paper which estimates the attributes of a data model and calculates the extreme probability estimates for the given data values without additional computational cost. In this study six different cancer datasets are considered and are merged to form one cancer dataset. For classification of somatic mutational data AdaBoost algorithm is considered in this paper.

2. Related works

Some of the clustering techniques which are applied on somatic mutations data are presented below.

In [3], the authors presented a model on mutational data which utilizes k-means algorithm. The K-means clustering algorithm is obtained with various values of K which can be taken from small to larger numbers. The significant value of K is selected by considering certain criterion measure. In this paper different number of clusters was tried and it was analyzed whether the results are biologically meaningful. To group the somatic mutations, K-means clustering algorithm was used for every cancer type in the dataset.

Compact Quad Band Radiator for Wireless Applications

V. Saritha, C. Chandrasekhar, and K. Murali

20-21 7ic

Abstract Currently available wireless technologies require antenna of compact size, less cost and weight for multiple band operation. In this paper, a planar ring antenna with dimensions of $34 \times 18 \times 1.6$ mm^3 is proposed that can operate in quad band centred at 2.5 GHz (Bluetooth), 3.5 GHz (WiMAX), 5.5 GHz (WLAN) and 8.0 GHz (SAT com). The proposed antenna comprises fork-shaped strip carved inside a rectangular ring, fed by a microstrip line, having a ground plane that is defected in structure with three small rectangular slots and a parasitic rectangular patch placed behind the fork-shaped strip. It is observed that simulated and experimental results are in very good agreement.

Keywords Quad band radiator · Fork-shaped strip · Parasitic rectangular patch and slots

1 Introduction

Of late, tremendous development has taken place due to continuous research in the field of wireless communication systems. Technologies like Wi-Fi, WiMAX and SAT com are deployed in portable wireless devices. These technologies demand multiband, multifunction antenna of low profile, less weight, low cost and easy in fabricating. To meet these requirements, various designs of multiband antenna have been reported in the literature [1–12] for WiMAX and WLAN applications.

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A Real-Time Audio Transmission and Reception Over Wireless Channel Using PXI System

M. Padmaja, K. Prasuna, and K. Murali

Abstract Audio signal transmission is a significant part of wireless communication. There has been a great interest in transmission and reception of audio/video signals over wireless links for future mobile radio communication. In this paper, a simple VI has been developed for both transmission and reception of audio signal over the wireless channel by using LabVIEW and PXI systems (PXI-1065). The proposed scheme is based on real-time modulation and demodulation of the audio signal with LabVIEW and configuration of PXI module in real time.

**Keywords** Audio transmission and reception · LabVIEW · PXI system

1 Introduction

Nowadays, the advance of communication technology has given growth to a massive demand on high-performance communication systems. Audio transmission is considered to be one of the important applications in recent communication trends. In the recent years, the quality of audio has gained importance in the increasing technologies. Transmission of audio over wireless channels has achieved wide challenges. Therefore, to meet the demands, it is necessary to develop and implement high-quality transmissions with the latest devices as required, to transmit audio complexity should be reduced.

The concept of power plays a vital role in decreasing the noise and enhancing the quality of audio transmission over wireless channels. The system model classically involves a device of measuring the excellence of the channel seen by the receiver and provided that such in sequence to the transmitter to adjust the amount of transmitted

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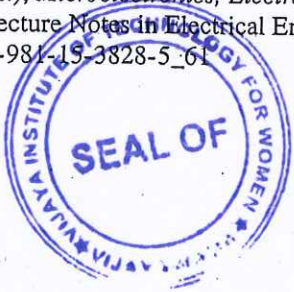
Chapter 5
AdaBoost with Feature Selection Using IoT to Bring the Paths for Somatic Mutations Evaluation in Cancer

Anuradha Chokka and K. Sandhya Rani

Abstract Nowadays, the research in bioinformatics helps in finding out numerous ways in storing, managing organic information, and developing and analyzing the computational tools for better understanding. So far, much of the research has been carried out to overcome the difficulties in experimental methods while storing vast amounts of the data in different sequencing projects. In this process, many of the computational methods and clustering algorithms were brought to light in the past to diminish blocks between newly sequenced gene and genotypes by applying identified jobs. The latest specific applications invented in bioinformatics are paving way for more advancement by adding developments in machine learning and data mining fields. Because of a large quantity of applications acquired by various feature encoding methods, the existing classification results remained inadequate. Hence, the present study is intended to create awareness among the readers on the various possibilities available in finding somatic mutations by using machine learning algorithm, AdaBoost with feature selection, a classification in various feature selection techniques with their applications, and detailed explanation on the distinct types of advanced bioinformatics applications. This study presents the statistical metric-based AdaBoost feature selection in detail and how it helps in decreasing the size of the selected feature vector, and it explains how the improvement can be attributed through some measurements using performance metrics: correctness, understanding, specificity, paths of mutations, etc. The present study suggests some IOT devices for early detection of breast cancer.

Keywords Bioinformatics · Somatic mutations · Machine learning · AdaBoost
Feature selection · IoT

5.1 Introduction

It is found in previous investigations that tumor samples in cancer patients display several types of genetic defects which have been infected to the mankind during somatic mutation developments from a normal cell condition. Somatic mutations are

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Block Consecutive Minimization Method with Wireless Energy Harvesting Relays

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Abstract-The main aim of this paper is to optimize power at the transmitting, receiving and Relays for harvesting energy.There are a number of non-convex optimization methods for maximization and minimization but which does not give the better performance as our proposed convex optimization method. The Proposed Convex optimization Method known as Block Consecutive Minimization (BCM) plays an important role in the converging throughput compared with the other methods.

Keywords —Convex optimization, multicell interference, resource allocation, Block Consecutive Minimization (BCM)), wireless energy harvesting.

I. INTRODUCTION

In this paper, an integrated convergence analysis to a general class of estimated descent method strategies in which an arrangement of inexact variants of the first issue are unravelled progressively. There are issues with nonsmooth and nonconvex target capacities. Two kinds of approximations are viewed as: one being a locally tight upper headed for the first target work, the other being a curved neighbourhood estimate of the goal work. By permitting inaccurate arrangement of sub problems, our work binds together and expands a few existing calculations and their joining investigation, including the distinction of arched capacities strategy, the required calculation, and in addition the rotating proximal minimization calculation [1-4].

II. LITERATURE SURVEY

Shimin Gong, Lingjie Duan , Natarajan Gautam Due to the relays' inability to harvest energy and transmit data simultaneously, the source needs to optimally schedule the relays' energy harvesting (EH) and data transmission. Proposed a thin optimal approach is considered along with relays to update power based source relay. The goal is to mutually enhance the transmit control at the BSs and the transfers and locate the ideal PS rule at the transfers. Our formulationsdirectly focus on the basic issue of multicell interference,while meeting the stringent imperatives on the accessible transmit control at the BSs and the transfers. Since the enhancement factors
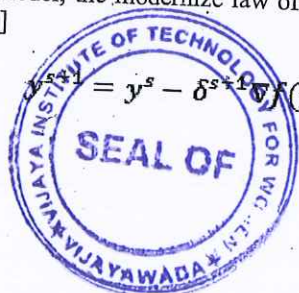
are unequivocally combined with numerous nonlinear cross duplicating terms, the figured issues are profoundly nonconvex[5].

To the best of our insight, there exists no functional technique that ensures genuine worldwide optimality in these testing problems.Then, we misuse the issue structure and receive the progressive arched estimation (SCA) strategy to change the exceptionally nonconvex issues into a progression of curved sub issues. Here, we particularly tailor the nonexclusive SCA structure by means of the utilizations of geometric programming (GP) and difference-of-curved capacity (DC) programming. At each progression in our proposed iterative calculations, we effectively take care of the subsequent curved issue by the inside point technique. We systematically demonstrate that our created calculations produce a grouping of enhanced plausible arrangements, which in the long run meet to a locally ideal arrangement fulfilling the Karush– Kuhn– Tucker (KKT) states of the first issues[6].

At long last, we demonstrate that the proposed SCA-based methodology can be stretched out to the more broad instance of variable timeslot lengths with DF transferring. Numerical precedents with reasonable system parameters affirm that our joint improvement arrangements altogether beat those where the radio asset parameters are exclusively streamlined [7-8]

III. BLOCK CONSECUTIVE ALGORITHM

One of the well-known strategy for advancement is the Gradient Descent Method. In light of this technique , Several upgraded strategies appeared like square organize drop strategy , lagrangian technique so on. In these strategies iterative methodology are to be taken which is a period postponing process in remote networks.To overawed such issues, one can change the Descent calculation by advancing a appropriate estimated type of the autonomous capacity at all repetition. The plummet technique can be viewed as a use of such approach.As a model, the modernize law of the drop strategy is[9-11]

$$y^{s+1} = y^s - \delta^{s+1} \nabla f(y^s) \quad (1)$$

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