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Modeling and optimization of quality parameters in EDM of Nimonic 90 using Evolutionary Techniques

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Abstract

Nickel superalloy is a material that belongs to the advanced category and is frequently used in a number of significant industries, including those of aerospace, automobiles, and missiles because of its exceptional mechanical, physical, and chemical qualities, it is used in a variety of applications. Such unique materials may now be machined due to the development of complex machining processes. Nowadays, one common AMP for machining nickel alloys is electrical discharge machining. Discharge current (I_p), pulse-on time (T_{on}), pulse-off time (T_{off}) and nano powder concentration were tested as process parameters in the present research work using EDM on a Nimonic 90. Surface roughness has been taken into consideration as an output parameter together with the rate of material removal and tool wear. Both the quality parameters and RSM have been developed. Single objective optimization of the quality parameters was then carried out using a TLBO and PSO approach in the RSM. It has been noted that TLBO produces superior outcomes to PSO.

Key words: MRR, SR, TWR, TLBO, PSO, RSM, Nimonic 90.

1. Introduction

EDM is a non-conventional electro-thermal machining process. Spark eroding, sometimes known as spark machining, is a type of machining that uses sparks. It's frequently used for machining hard, high-demand materials like titanium, superior hardened super alloy combinations, and other industrial applications. [1, 2]. According to a review of the literature, NPMEDM is a viable approach for resolving the limits of regular EDM machining methods. Despite substantial research in the field of powdered mixed EDM using various powders such as Titanium, Silicon, Graphite, and so on, it was found that NPMEDM was invented in the earlier centuries. One of the most essential and novel ways for overcoming EDM method constraints and expanding the EDM limit [3]. The use of nanoparticles such as aluminium powder and multiwalled carbon nanotube (CNT) powder into dielectric fluid has enhanced the MRR, TWR, and surface roughness of machined components (SR). A unique method known as nano powder mixed EDM is utilised to remove the found defects. The insulating strength of the dielectric is reduced when it is linked with powder, the process becomes more stable, and the spark gap between the tool material and the work material increases. MRR and SR will be high if the discharge parameters are optimized [4]. The effect of adding carbon nanotubes into the oil flux dielectric during the Ti-6Al-4V EDM process was examined by Shabgard and Khobragade et al. In this experiment, copper was employed as a tool. When carbon nanotubes were combined with dielectric, surface micro cracks were reduced. It was also discovered that combining CNT particles reduced MRR, TWR, and SR [5]. Kumar et al. studied the EDM technique's performance when cutting Inconel 825 with an Al_2O_3 nano particles blended dielectric. MRR and surface roughness improved considerably when nano particles were introduced to the shown water dielectric fluid. Machining tools made of copper were utilised. They discovered that low-cost Al_2O_3 powder may be employed in industrial applications successfully [6].

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Conference Paper

Multi objective prediction and optimization of process parameters in the NPMEDM of Nimonic 90 by using Taguchi-grey relational analysis

May 2022 · AIP Conference Proceedings 2418(1):050011

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Conference: INTERNATIONAL CONFERENCE ON RESEARCH IN SCIENCES, ENGINEERING & TECHNOLOGY

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Abstract

This work intends to improve peak current; multi walled carbon nano tube (MWCNT) and nano aluminium blended EDM of Nimonic 90 utilizing a multi-response optimization Grey Relational Analysis (GRA) approach rather than a single response optimization. A thorough investigation revealed that different combinations of EDM input parameters are necessary to provide a improved material MRR, lower TWR and SR for Nimonic 90 Nickel super alloy. Taguchi approach is used in this work to develop single objective optimization and optimum factor configurations for multi- objective output response optimization. Grey relational technique is used to investigate MRR, SR, and TWR simultaneously. The results showed that utilizing this method significantly enhanced machining performance. The confirmation tests were carried out at the ideal parameter set, and it was revealed that the predicted values of responses at the ideal combination of parameters are in excellent agreement with the confirmation research findings.

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RESEARCH ARTICLE

Mechanical, fracture toughness, and fatigue behavior of spinifex littoreus fiber on echinoidea-spike toughened epoxy composite

S. Senthil Kumar, T. CH Anil Kumar, Mohan Chokkalingam, S. Kallappan, S. Boopathi, Chidurata Srinivas, Pravin P. Patil

First published: 15 February 2022 | <https://doi.org/10.1002/pc.26543> | Citations: 9

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Abstract

Novel spinifex littoreus fiber-reinforced echinoidea spike particle dispersed epoxy resin hybrid composite has been prepared and characterized. The main objective of this research work was to prepare a new system of epoxy hybrid composite comprises of surface-treated novel spinifex littoreus fiber (SLF) and echinoidea spike powder (ESP) for sustainable material development. The fiber was treated with alkali and silane for effective adhesion with matrix. The composites were prepared using hand layup

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Md. Ahsan Halimi[✉], Taimoor Khan[✉], Daasari Surender[✉],
N. Nasimuddin[✉], and S. R. Rengarajan[✉]

Dielectric Resonator Antennas for RF Energy-Harvesting/Wireless Power Transmission Applications

A state-of-the-art review

This article presents an overview of dielectric resonator (DR)-based sensing elements and their applications in RF energy-harvesting (RFEH) and wireless power transmission (WPT) systems. With increased wireless applications, the demand for electrical energy goes up, thereby enabling the development of various energy sources. RF energy is widely available and the most efficient energy source. Although DR antennas (DRAs) have been studied extensively in the last few decades, they have not been employed in RFEH and WPT applications. The intention of the proposed article is 1) to provide an overview of the DRA for RFEH and WPT applications; 2) to accommodate various performance enhancement approaches for the DRA; and 3) to highlight the research gap

for developing a complete rectenna system that helps future researchers. We believe that this survey may help the DRA.

INTRODUCTION

The massive progress in electronic technology has yielded electronic devices with reduced power consumption. In applications such as the Internet of Things, millions of electronic devices are interconnected to provide various services to the citizens of a city in a faster way [1]. All these services are provided with the help of sensing elements. Since the lifetime of conventional batteries is limited [2], EH devices are suitable alternatives to conventional batteries. EH is a process of utilizing available ambient energy efficiently for powering small electronic gadgets. EH devices have used solar, acoustic, wind, mechanical, and RF sources, each having merits and demerits. However, with increasing wireless applications and with the

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A Deep Learning Model for Average Fuel Usage in Large Vehicles

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ABSTRACT

When it comes to creating unique machine learning models for fuel consumption, this research recommends adopting a data summary strategy based on distance as opposed to the conventional time period. This method is used with seven variables obtained from vehicle speed and road grade to create a highly predictive neural network model for typical fuel usage in heavy vehicles. The proposed approach can be readily designed and implemented for each vehicle in a fleet to maximise fuel efficiency. All of the model's predictors are averaged across predetermined time intervals. For routes that incorporate both city and highway duty cycle segments, a 1 km window is able to estimate fuel consumption with a 0.91 coefficient of determination and mean absolute peak-to-peak percent error less than 4%.

Keywords: Vehicle modeling, neural networks, average fuel consumption, KNN, data summarization, fleet management, statistical models, FNN

1. INTRODUCTION

Manufacturers, regulators, and customers are all interested in fuel economy models. They are required during the whole car ownership experience. In this study, we focus on predicting typical fuel use during maintenance and operation for heavy trucks. In general, there are three types of methods used for creating models of fuel consumption: • Models that are grounded in the physical sciences and built from a thorough comprehension of the system's dynamics. These models employ elaborate mathematical equations to describe the motion of the vehicle's parts at each time step [1, 2]. Machine learning models [3, 4], which are data-driven and reflect an abstract mapping from an input space consisting of a specified collection of predictors to an output space representing the goal outcome, in this case average fuel consumption. • Statistical models, which are similarly data-driven and create a relationship between a collection of predictors and a result of interest [5], [6].

The Cost and accuracy, relative to the needs of intended application, are two primary areas where the methods diverge.

Here, we offer a simple model that may be applied to any fleet of heavy trucks. A fleet manager's ability to optimise route planning for all vehicles based on each vehicle's estimated fuel consumption is greatly aided by having accurate models of all cars in the fleet at his disposal. Goods transportation [7], public transportation [3], construction [8] and garbage collection [9] all use fleets of vehicles. In order to be useful for any fleet, the technique must be generalizable to a wide range of vehicle technologies (current and future) and configurations without requiring in-depth familiarity with each vehicle's unique physical attributes and measurable parameters. After weighing the benefits of more precision against the costs associated with creating and tailoring a model for each vehicle in the fleet, machine learning emerges as the method of choice.

Existing work

Existing model that can be easily developed for individual heavy trucks in a big fleet is proposed for

If a fleet manager has reliable models of all the cars in the fleet, he or she may optimise route planning for the entire fleet based on the expected fuel consumption of each individual vehicle, guaranteeing that the route assignments are optimised to reduce fuel consumption across the board.

This method is used with seven variables obtained from vehicle speed and road grade to create a highly predictive neural network model for typical fuel usage in heavy vehicles.

For routes that incorporate both city and highway duty cycle segments, a 1 km window is able to estimate fuel consumption with a 0.91 coefficient of determination and mean absolute peak-to-peak percent error less than 4%.

Present work

As was previously noted, digital models of complex systems are frequently developed using artificial neural networks (ANN). Some of the challenges that machine learning models encounter when the input and output are in separate domains are brought to light by the models suggested in [15]. The input


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Textile Products Recommendation System in Online Using Deep Learning

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ABSTRACT_ The popularity of recommendation systems has increased in recent years as a means of guaranteeing customer satisfaction and driving revenue growth. The goal of these technologies is to let customers make decisions more quickly. These recommendation systems are particularly important in the realm of online retail. This research proposes a Convolutional Neural Network-based deep learning online recommendation device (CNN). Users and designers of the CNN have collaborated to determine which classes of special patterns should be implemented inside the network's architecture. The in-depth learning model suggests color-balanced layouts for tangible goods. In order to train and test the proposed model, we used our own sample dataset consisting of 12000 images.

1.INTRODUCTION

Online shopping has been increasing in popularity recently because of the way internet technology is evolving.

The majority of shoppers who purchase new products do so because they like the way the colour or sample looks with their existing inventory. Shopping online is convenient, but it can be time-consuming to look for similar items. Discovering the many patterns that clients are interested in can be expedited by using an automated advising structure. Suggestion systems are becoming popular because they allow shoppers to quickly sort through a wide range of available online products and zero down on the ones that best suit their needs [1]. Researchers have taken notice of recommendation structures, leading to the introduction of domain-specific recommendation structures in fields including film [2], video [3], music [4], fashion [5, 6, 7], and so on.

2.LITERATURE SURVEY

While the construction of recommendation systems is not new, there have been some previous works on the topic.

PROTECTION FOR YOUR PURCHASE PREFERENCES WITH DIFFERENTIAL PRIVACY

7-8

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ABSTRACT

Internet banking can be done to uncover customers' buying habits as the conclusion to various attempts. Before actually transferring it on-line, monetary institutions with contrasting statutes of darkness. Every buyer can disrupt their local business connection before transferring it to online banks, due to divergent security. However, the adoption of differential security in web-based foundations will be problematic because popular differential protection plans do not involve the issue of the concussion limit. Similarly, we manage an academic test above and below to show that our projects are able to meet the standard of differential protection. Finally, in order to decide on sustainability, we place our diets on trial in the mobile initiation trial. The importance of aggregate usage and online banking. Total amount decreased significantly, and the protection errors for common data are less than 0.5, which is consistent with the test findings.

KEYWORDS: Differential Privacy, Noise Boundary, Online Bank, Shopping Preference Protection.

INTRODUCTION

Online banks have precisely the new growth popularized for the distribution of financial services [1]. Online banks, in their separate phase, are defenseless in the face of outside and intermediary attempts. Brutal violations of the commandments are contained in violations for shipwrecked persons [2], social phishing and transferred violations. Data improperly processed by persons with authorized access shall be treated as an intermediate offence. Clients' financial data may exist collected by foreign aggressors in order to conclude individual buying preferences [3], operational designs, or credit collection. Shoppers can accept advice [4],



RAB(REVOCABLE ATTRIBUTE BASED) DATA STORAGE IN MOBILE CLOUDS

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Abstract : Users may now upload data to the cloud via their mobile devices, which is a trend that is gaining popularity. To protect the confidentiality and privacy of user data, cloud storage systems commonly use attribute-based encryption (ABE). One of the main inefficiencies of ABE is the large processing overheads at mobile devices during user revocation and file access. We propose a RADS system with a number of desirable properties to address this issue. Beginning with a fine-grained access control mechanism, our RADS solution enables owners of outsourced files to examine them without having to individually invite only people they trust. Additionally, our RADS technique enables mobile users to authorize the CSP to share costly computations in file access without revealing the contents of the files.

Index Terms – Fine Grained System, Distributed System, Information Security, ABE(Attribute Based Encryption)

1.INTRODUCTION

Because of enhancements in specialized strategies and the expansion of convenient electronic contraptions, an ever- increasing number of individuals are progressing from fixed to portable distributed computing [1]. Information saved in the cloud can be gotten to from any area utilizing a client's cell phone (e.g., a cell phone or tablet) in the versatile distributed storage frameworks [2], [3]. Clients can utilize portable capacity arrangements like Dropbox or I Cloud to back up their pictures, films, and different records, making it conceivable to recover this data from any place. Information security and protection concerns might be the best hindrance to the far and wide reception of versatile distributed storage frameworks. Information put away in the cloud ought to be encoded involving cryptography as a typical practice. In any case, in ordinary encryption frameworks, document proprietors should know the personalities of all approved clients to unscramble their records; this is in some cases unfeasible in distributed computing. To take into account more versatile access control, distributed storage frameworks have started utilizing characteristic- based encryption (ABE) [4, [5,] [6, 7]. In these arrangements, rather of requiring a foreordained rundown of supported clients, the record's proprietor can rather characterize an entrance strategy, and just clients who consent to that arrangement will be conceded admittance to the document. The confined assets of cell phones make it improbable that versatile clients will actually want to help ABE, in spite of the way that ABE gives an adaptable method for protecting re-appropriated information. By and large, cell phones like cell phones have restricted computational capacity and power supply, and the broad cryptographic estimations expected to unscramble ABE plans (e.g., [8], [9], [10]) would cause a lot of force utilization. In this manner, while using ABE to get the fine-grained admittance control in versatile distributed storage frameworks, it is expected to diminish the estimations of cell phones in the record access technique. What's more, a successful disavowal component is expected to keep unapproved clients from getting to information that has been rethought with regards to portable cloud executions of ABE. Due to their transient nature and



Analysis of Women Safety using Machine Learning Techniques on Tweets

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ABSTRACT

Women and girls have been experiencing a lot of violence and harassment in public places in various cities starting from stalking and leading to sexual harassment or sexual assault. This research paper basically focuses on the role of social media in promoting the safety of women in Indian cities with special reference to the role of social media websites and applications including Twitter platform Facebook and Instagram. This paper also focuses on how a sense of responsibility on part of Indian society can be developed the common Indian people so that we should focus on the safety of women surrounding them. Tweets on Twitter which usually contains images and text and also written messages and quotes which focus on the safety of women in Indian cities can be used to read a message amongst the Indian Youth Culture and educate people to take strict action and punish those who harass the women. Twitter and other Twitter handles which include hash tag messages that are widely spread across the whole globe sir as a platform for women to express their views about how they feel while we go out for work or travel in a public transport and what is the state of their mind when they are surrounded by unknown men and whether these women feels safe or not?

Keywords: Machine learning, Sexual Harrasment, Sentimental analysis, Safety, Women

Introduction

Twitter in this modern era has emerged as a ultimate microblogging social network consisting over hundred million users and generate over five hundred million messages known as 'Tweets' every day. Twitter with such a massive audience has magnetized users to emit their perspective and judgemental about every existing issue and topic of internet, therefore twitter is an informative source for all the zones like institutions, companies and organizations. On the twitter, users will share their opinions and perspective in the tweets section. This tweet can only contain 140 characters, thus making the users to compact their messages with the help of abbreviations, slang, shot forms, emoticons, etc. In addition to this, many people express their opinions by using polysemy and sarcasm also. Hence twitter language can be termed as the unstructured. From the tweet, the sentiment behind the message is extracted. This extraction is done by using the sentimental analysis procedure. Results of the sentimental analysis can be used in many areas like sentiments regarding a particular brand or release of a product, analyzing public opinions on the government policies, people thoughts on women, etc. In order to perform classification of tweets and analyze the outcome, a lot of study has been done on the data obtained by the twitter. We also review some studies on machine learning in this paper and research on how to perform sentimental analysis using that domain on twitter data. The paper scope is restricted to machine learning algorithm and models. Staring at women and passing comments can be certain types of violence and harassments and these practices, which are unacceptable, are usually normal especially on the part of urban life. Many researches that have been conducted in India shows that women have reported sexual harassment and other practices as stated above. Such studies have also shown that in popular metropolitan cities like Delhi, Pune, Chennai and Mumbai, most women feel they are unsafe when surrounded by unknown people. On social media, people can freely express what they feel about the Indian politics, society and many other thoughts. Similarly, women can also share their experiences if they have faced any violence or sexual harassment and this brings innocent people together in order to stand up against such incidents. From the analysis of tweets text collection obtained by the twitter, it includes names of people who has harassed the women and also names of women or innocent people who have stood against such violent acts or unethical behaviour of men and thus making them uncomfortable to walk freely in public.

Existing work

People often express their views freely on social media about what they feel about the Indian society and the politicians that claim that Indian cities are safe for women. On social media websites people can freely Express their view point and women can share their experiences where they have faced abuse harassment or where we would have fight back against the abuse harassment that was imposed on them . The tweets about safety of women and stories of standing up against abuse harassment further motivates other women data on the same social media website or application like Twitter. Other women share these messages and tweets which further motivates other 5 men or 10 women to stand up and raise a voice against people who have made Indian cities and unsafe place for the women. In the recent years a large number of people have been attracted towards social media platforms like Facebook, . It is a common practice to extract the information from the data that is available on social networking through procedures of data extraction, data analysis

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A Secure Keyword Search Mechanism for Data Sharing in Cloud Computing

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ABSTRACT

Hardware and software expenses in computer infrastructure have been greatly lowered because to the advent of cloud infrastructure. To ensure security, the data is normally encrypted before it's outsourced to the cloud. Unlike searching and sharing the plain data, it is tough to search and share the data after encryption. Nevertheless, it is a key responsibility for the cloud service provider as the users expect the cloud to do a speedy search and return the result without sacrificing data confidentiality. To tackle these challenges, we propose a ciphertext-policy attribute-based mechanism with keyword search and data sharing (CPAB-KSDS) for encrypted cloud data. The suggested system not only provides attribute-based keyword search but also enables attribute-based data sharing at the same time, which is in contrast to the existing solutions that only support either one of two aspects. Additionally, the keyword in our scheme can be modified throughout the sharing phase without interacting with the PKG. In this paper, we discuss the notion of CPAB-KSDS as well as its security model. As an added bonus, we provide a concrete strategy and show that it is secure in the random oracle model against both the chosen ciphertext attack and the chosen keyword assault. Finally, the comparison of performance and properties shows that the proposed structure is both practical and efficient.

KEYWORDS: Cloud Computing, Ciphertext-Policy Attribute Based Mechanism with Keyword Search and Data Sharing (CPAB-KSDS), PKG, Encryption, Attribute Based Encryption.

1. INTRODUCTION

1.1. BACKGROUND WORK

As a term, "cloud computing" encompasses both the software and the underlying infrastructure of remote servers and networks that are used to provide on-demand access to shared resources over the internet. Historically, "Services" have been referred to as "Computer Code as a Service" (SaaS). The Cloud is the collective noun for the software and infrastructure of data centres. The term "Public Cloud" is used to describe a Cloud that is made available to the public on a pay-per-use basis. Utility Computing is the product being offered. Amazon Web Services, Google App Engine, and Microsoft Azure are all examples of utility computing that are available right now. When referring to internal datacenters of a company or other organisation, the term "private Cloud" is typically used. This means that Cloud Computing encompasses both SaaS and Utility Computing but typically excludes private Clouds. The word "cloud computing" is used interchangeably; it should be replaced only if necessary for clarification. Fig. The diagram in 1.1 illustrates how people participate in Cloud Computing as either consumers or providers.

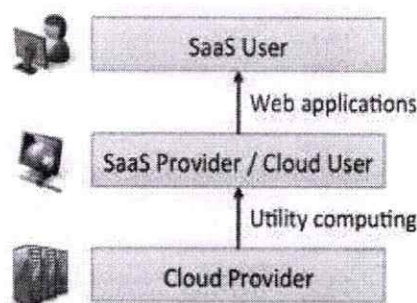


Fig: 1.1. User and Providers of Cloud Computing

To improve a networking infrastructure that incorporates all types of resources, usage areas, etc., falls under the purview of future Internet research and development. Cloud-based technology research is, thus, crucial to the long-term success of the Internet. Like the clever consequence of the re-marking

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Cartooning of an Image/Video Using Opencv and Python

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ABSTRACT

To cartoonize images and different objects and blend them accordingly as we require. Our aim is to create a cartoon which doesn't look like a filter applied on an image but, is actually a cartoonic view of an input image. The bilateral filter and an edge detection mechanism are all that's needed to create a rough cartoon impression. We can access this cartoon images through an application where you can also save them and make changes.

KEYWORDS : Cartooning, cartoon, cartoonpictures, cartoonify, imageconverting, imageformat, animation, generative adversarial network (GAN), image processing and sharp image.

1. INTRODUCTION

Problem statement:

Image processing is a technique used to modify an image in some way, such as by improving it or by eliminating unnecessary functional data. are located in less busy lanes. Cartooning of an image is an interesting project under image processing where it takes an input image, processes it and produces an output as a cartoon.

Motivation:

Cartoons are often sardonic, biting, and slant their opinions on a subject. However, it is not simple to draw cartoons. True mastery of this art form requires years of formal training and the natural talent of a select few. Several breakthrough technologies have emerged in recent years that make this now a realistic goal. to create cartoons entirely on the computer. This can be recreating and helps one to have a cartoonic view of everything..

Objective:

To develop an application to cartoonize humans, other objects and images Make it possible to blend as many cartoons as possible Save the cartoons in the application if needed.

Literature Review

M. Sweet, "Traffic Congestion's Economic Impacts: Evidence from US Metropolitan Regions," *Urban Studies*, vol. 51, no. 10, pp. 2088–2110, Oct. 2013

Traffic congestion alleviation has long been a common core transport policy objective, but it remains unclear under which conditions this universal byproduct of urban life also impedes the economy. Using panel data for 88 US metropolitan statistical areas, this study estimates congestion's drag on employment growth (1993 to 2008) and productivity growth per worker (2001 to 2007).

Md. Munir Hasan, Gobinda Saha, Aminul Hoque and Md. Badruddoja Majumder, "Smart Traffic Control System with Application of Image Processing Techniques," in 3rd International Conference on Informatic Electronics & Vision, Dhaka, May 2014.

In this paper we propose a method for determining traffic congestion on roads using image processing techniques and a model for controlling traffic signals based on information received from images of roads taken by video camera. We extract traffic density which corresponds to total area occupied by vehicles on the road in terms of total amount of pixels in a video frame instead of calculating number of vehicles. We set two parameters as output, variable traffic cycle and weighted time for each road based on traffic density and control traffic lights in a sequential manner.

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Road Pothole Detection using Convolutional Neural Networks

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ABSTRACT

One of the leading causes of both vehicle breakdowns and accidents on the road is the prevalence of potholes. A rise in both vehicle traffic and pollution has led to an increase in both large and small potholes on roads across the country. Here, we introduce a Convolutional Neural Network for classifying road potholes using the Tensor Flow and Keras libraries. The proposed system uses images of potholes in the road to categorise them using convolutional neural networks. In order to find potholes, the system employs a convolutional neural network model. If the CNN method is bolstered by additional feature extraction strategies, it is expected that the resulting pothole classification accuracy will improve. Using deep convolutional neural networks, we have shown their utility and potential for analysing images of potholes. With the goal of releasing this model on the Django framework running on a local host.

Keywords: Road Pothole, Deep Learning, Tensor Flow, Keras, CNN

1. INTRODUCTION

1.1 Introduction of project

Specifically, we propose employing Deep CNN (convolutional neural network) for deep learning on the problem of road potholes. As a novel approach to this problem space, we have adopted the CNN approach to deep learning after collecting a sufficient amount of data containing images of potholes under different conditions and weather. Moreover, a contrast was made between the custom-made convolutional neural model and some of the pre-trained models.

This project proposes a method for detecting potholes in roads by training a Deep Learning algorithm suitable for such a classification problem. Implementing Convolutional Neural Networks in Tensor Flow.

To help engineers devise a classification strategy for avoiding potholes in roads, we proposed using a dataset informed by deep learning (dl). The research employed Convolutional neural networks, a type of deep learning (CNN). If the CNN approach is bolstered by additional feature extraction methods, it is expected that roadpothole classification accuracy will improve.

2. LITERATURE SURVEY

A literature review is a piece of writing that summarises the most important findings and methods related to a specific topic. Secondary sources are those that discuss previously published data and knowledge in a specific field and, in some cases, time frame.

The purpose of a literature review is to bring the reader up to speed on the state of the art in a given field, but it also lays the groundwork for other endeavours, such as potential future research in the field, and thus precedes a research proposal. It typically follows a specific structure and combines elements of summary and synthesis.

Outline of The Project:

- Define a problem
- Gathering image data set
- Evaluating algorithms
- Detecting results

The steps involved in Building the data model is depicted below.

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Using Machine Learning Models to Predict Growth of Plant and Output in Greenhouse Environments

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ABSTRACT

Accurately forecasting how plants will develop and what kind of harvest they will produce is a crucial issue for greenhouse growers and farmers are general. In order to control the environmental improve higher production, match supply and market demand, and reduce costs, producers could benefit from the development of models that can properly model growth and yield. Recent advancements in ML, and especially Deep Learning (DL), can give potent analytical tools are new. This proposed research makes use of Machine Learning(ML) and DL methods to estimate production and plant growth variance in two greenhouse settings: tomato yield forecasting and Ficus benjamina stem growth. To improve upon traditional methods of making predictions, we make use of a brand new, state-of-the-art deep Recurrent Neural Network (RNN) based on the Long Short-Term Memory (LSTM) neuron model. The RNN design takes into account both the historical values for yield, growth, and stem diameter, as well as the microclimate circumstances, while modelling the desired growth parameters. In order to assess the efficacy of various ML techniques, such as Support Vector Regression and Random Forest Regression, a comparative analysis is presented that use the mean square error criterion. Extremely encouraging findings are given based on information collected from two greenhouses in Belgium and the United Kingdom as part of the EU Interreg SMARTGREEN project (2017-2021).

Keywords: Deep Learning(DL), Ficus Benjamina, Support Vector Regression, Random Forest Regression, Machine Learning(ML), Recurrent Neural Network(RNN), Long Short-Term Memory(LSTM).

1. INTRODUCTION

In this paper author is predicting ficus plant growth/crop yield by evaluating performance of various machine learning algorithms such as SVR (Support Vector Regression), Random Forest Regression (RF), and LSTM(Long Short-Term Memory) deep neural network algorithm. SVR and RF are the traditional old algorithms whose performance of prediction will be low due to unavailable of deep learning technique. To overcome from this problem author is using LSTM deep neural network algorithm to predict plant growth.

Deep learning extends classical ML by adding more "deep" (complexity) into the model, as well as transforming the data using various functions that create data representations in a hierarchical way, through several levels of abstraction. A strong advantage of DL is feature learning, i.e., automatic feature lower level features. DL can solve complex problems particularly well and fast, due to the more complex models used, which also allow massive parallelization. These complex models employed in DL can increase classification accuracy, DL includes different components, such as convolutions, pooling layers, fully connected layers, gates, memory cells, activation functions, encoding/decoding schemes, depending on the network architecture used, e.g., Convolutional Neural Networks, Recurrent Neural Networks and Unsupervised Networks.

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Ad Sherlock Efficient Deployable Click Fraud Detection for Mobile Applications

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ABSTRACT

Without mobile advertising, there would be no mobile app ecosystem. It's clear that click fraud, where ads are clicked on by malicious code or bots, poses a serious threat to the sustainability of this ecosystem. Click fraud can now be detected by server-side analysis of advertising requests. Due to the simplicity with which the detection can be avoided, for example when the clicks are disguised behind proxies or are geographically separated, such methods may produce a large number of false negatives. In this paper, we provide AdSherlock, an efficient and deployable client-side (within-app) solution to click fraud detection in mobile apps. AdSherlock divides the computationally intensive phases of recognising click requests into an offline and an online procedure. AdSherlock uses a probabilistic pattern-creation approach based on URL (Uniform Resource Locator) tokenization that operates in an offline mode. These patterns, in conjunction with an ad request tree model, are used to identify click requests in real time, thereby detecting click fraud. AdSherlock was put through its paces by creating a prototype and testing it with real-world applications. The online detector is built into the executable bundle of the programme through binary instrumentation. When compared to other methods for detecting click fraud, AdSherlock performs better while practically never affecting system performance.

KEYWORDS: Click fraud detection, mobile advertising, adrequests identification.

1. INTRODUCTION

A mobile app ecosystem would not exist without mobile advertising. It has been estimated that by 2020, the global market for mobile advertising would be worth \$247.4 billion.

- [1]. Third-party mobile ad providers like AdMob
 - [2] provide ad libraries that app developers incorporate into their apps in order to integrate advertisements. The embedded ad library retrieves ad content from the network and presents it to the user when the user is on a mobile device running the app. PPC (Pay-Per-Click)
 - [3] is the most popular style of monetization, in which the developer and the ad supplier are paid by the advertiser when a user clicks on the ad. Click fraud.
 - [4] is a significant challenge for the long-term health of this ecosystem since it involves fraudulent clicks (or touch events on mobile devices) on advertisements. These clicks are typically generated by malicious code or automated bots. Generally speaking, the various click fraud techniques can be broken down into two categories: in-app frauds, which involve inserting malicious code into the app to generate forged ad clicks, and bots-driven frauds, which involve using bot programmes (such as a fraudulent app) to automatically click on advertisements. Recent work MAdFraud
 - [5] conducts a large-scale measurement of ad fraud in real-world applications, allowing for a quantification of inapp ad fraud. Ad requests are made by around 30% of apps in a sample of about 130K Android apps, according to MAdFraud.
- Another recent piece of study examines bot-driven click fraud by employing the automated click generation programme ClickDroid [4] to conduct real-world click fraud attacks against eight of the most popular ad networks. Based on the data [4], it seems that six of the eight ad networks are susceptible to these kinds of attacks. An easy method for spotting click fraud in mobile apps is to use a server-side detection method based on a predetermined threshold. Clicks from the same device identifier (for example, IP address) on an ad server within a short time frame may be suspicious and blocked. However, when clicks are hidden behind proxies or geographically dispersed, this simplistic strategy may produce a large number of false negatives.

2. OVERVIEW OF

AdSherlock is designed to be used by app stores. Before an app is released for download, the app store can use AdSherlock to analyze the app and instrument the online fraud detector into the app for click fraud detection at runtime. Only app binaries (e.g., APKs (Android application package)) are needed, and AdSherlock does not assume any developer input.

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Analysis of the Efficiency of Machine Learning Methods for Disease Prediction

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ABSTRACT

Machine learning aids in the diagnosis and treatment of a wide variety of diseases. Improved disease prognosis and patient care can be achieved through the use of predictive analysis, which benefits from the application of powerful multiple machine learning algorithms. Disease prediction may be done quickly and accurately using machine learning techniques. These clinical characteristics are used in conjunction with machine learning algorithms for disease classification. In the end, we use a graph to compare the outcomes of various machine learning classification techniques.

KEYWORDS: Machine learning, classification, KNN, Data mining, Naviee bayes

1. INTRODUCTION

Keeping a patient healthy is a constant challenge due to the fact that each sickness has its own unique set of symptoms. Traditional medical practise assigns relative importance to each symptom in order to predict the presence of a disease and aid in the diagnosis process. The symptom with the greatest impact on the condition is given the most weight. Data mining supplements and replaces conventional medical expertise in aiding in the diagnosis and prognosis of disease. By using this strategy, we are able to extract previously unseen patterns, relationships, and knowledge that would have been inaccessible using more conventional statistical methods. Privilege and correct conclusion are ever-present contributors to the effective treatment. Data mining concepts are flexible enough to uncover hidden numbers, relationships within a database, and machine learning approaches to further assess a patient's case based on the documented clinical information. Machine learning algorithms are used to forecast a wide range of diseases and to develop effective regimens for improved health while minimizing the risks of excessive cost, slow recovery, and incorrect treatment. Thankfully, machine learning algorithms prove effective at disease prediction, and there are still a plethora of untapped methods to investigate. In this paper, we proposed a graphical user interface (GUI) application that makes use of machine learning methods for a disease prediction system, mining on the symptoms of the disease, and finally detecting the disease by comparing the performance or accuracy of different techniques in doing so. To get there, we'll use machine learning categorization techniques like Naive Bayes, Decision Tree, Support Vector Machines, and Random Forest, which can reliably predict the outcome of each new insertion.

2. RELATED WORK

One area where machine learning can be used is in the prediction of cardiovascular disease. The flexibility and adaptability of optimization algorithms make them well suited for handling difficult, non-linear issues. In order to enhance the quality of heart disease classification, we used the Fast Correlation-Based Feature Selection (FCBF) technique to eliminate redundant information. Then, we use a Multilayer Perception | Artificial Neural Network optimised with Particle Swarm Optimization (PSO) and Ant Colony Optimization (ACO) methods to perform a classification based on various classification algorithms like K-Nearest Neighbor, Support Vector Machine, Naive Bayes, Random Forest, and others. Applying the suggested hybrid method to the heart disease dataset, the results show the method's efficacy and robustness in processing different types of data for disease classification. Therefore, this research evaluates the outcomes of several machine learning algorithms based on a variety of metrics (such as accuracy, precision, recall, f1-score, etc.). Through the use of the proposed optimised model by FCBF, PSO, and ACO, we achieve a maximum accuracy of 99.65% in our classifications. The outcomes demonstrate that the proposed system outperforms the previously stated categorization method.

3. ARCHITECTURE

A system architecture or systems architecture is the conceptual model that architecture is the conceptual model that defines the structure, behavior and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system. System architecture can comprise system components, the externally visible properties of those components, the relationships between them.

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Image Security by Using Artificial Neural Networks

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ABSTRACT

Concern for one's own safety has been universal for quite some time. The possibility of a security breach in a private area is now one that everyone wants to eradicate. When a breach in the conventional security system is detected, alarms are sounded. However, a significant improvement in security can be achieved by the use of image processing in conjunction with deep learning via convolution neural networks for picture identification and classification. This is because it is able to extract intricate details from photographs with the use of sophisticated and accurate face and body detection algorithms. Transitions in machine learning, especially deep learning, are occurring at a rapid pace. There would be significant strides made in every area of science and technology if this kind of technology were used to improve upon present systems and models. It's the same with computerised visual perception. This study intends to do the same by demonstrating how these two may be combined and put to use in the realm of security to accomplish far more than was previously thought possible.

Keywords –Image procurement, Image segmentation, compression, decompression, neural networks

Introduction

Neural network [1] is used to refer to artificial neural network [2], while has been used to refer to biological neural network [3]. The biological neural network is a network of biological neurons, which is in relation with nervous system. The artificial neural network is composed of artificial neurons, which is the simulation of biological neural network. According to the learning ability, artificial neural network has been used in artificial intelligence [4]. For example, it is used to guide the robot to play chess, it is used in pattern recognition [5,6], such as pattern classification or object recognition, it is used in function approximation [7], such as time series prediction or modeling, and it is also used in data processing [8,9], such as filtering, clustering, blind signal separation, and compression. The proposed multimedia content authentication scheme is shown in Fig. 6. Here, the media data, original authentication code and key are used to feed a neural network, which produces a secret parameter. Compared with media data, the secret parameter is of small size. Then, the secret parameter and the key are stored or transmitted in a secure way, while the media data are distributed freely. During distribution, media data may be tampered maliciously. In authentication, the received media data, secret parameter and key are used to feed the same neural network, which produces the computed authentication code. By comparing the original authentication code and the computed one, the authentication result is produced. That is, if there is only slight difference between them, then the multimedia data are not tampered, otherwise, they are tampered. To authenticate multimedia data successfully, two conditions are required. Firstly, the secret parameter and key are correct. Secondly, the received media data are same to or not very different from the original media data

Existing Work

As e-commerce and financial dealings have moved online, protecting user information has become more crucial than ever. Information is protected across all platforms and applications thanks to data security measures including encryption, hashing, tokenization, and key management. The security of photos during network transmission or when stored in the cloud, however, has received very little attention.

Disadvantages:

Previous studies lacked efficient algorithms for image compression, and current systems made the encryption and decryption of images a cumbersome procedure.

Proposed Work

This project encrypts and decrypts photos using an artificial neural network, and the author also uses an artificial neural network to minimise the size of the images so they may be transferred more quickly across the network. After being trained on a dataset of photos, a model used for Autoencoder and Decoder can produce an output image that is worse in quality than the input image but is also less in file size and thus transfers more quickly over a

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Enhancing Cloud Technology Privacy And Security Through Feature Data Sharing

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ABSTRACT

Storage and retrieval of data can be done remotely via the internet, thanks to cloud computing. Problems with data privacy and access control arise, however, when information is stored on a cloud server that cannot be verified. Due to their inflexibility and lack of fine-grained access control, existing encryption systems like symmetric and asymmetric schemes are unsuitable to provide the access control. Attribute-based encryption is one of the most well-known cryptographic methods for ensuring confidentiality and enabling granular permissions in cloud storage. In this paper, we take a close look at the wide range of access structure and multi-authority ciphertext policy attribute-based encryption schemes currently in use. Additionally, this overview delves deeper into many facets of ciphertext policy attribute-based encryption, including hidden policy, proxy re-encryption, revocation mechanism, and hierarchical attribute-based encryption. Moreover, this research evaluates and contrasts several ABE schemes with regard to their capabilities, safety, and performance. The applicability of attribute-based encryption is also determined in this work. In conclusion, this work compares and contrasts several ABE schemes in order to identify areas of future study and problems that still need to be solved in the field of attribute-based encryption.

KEYWORDS: Cloud Computing, Data privacy, Privacy, Encryption, Access control, Attribute-based encryption (ABE), authority verification, hidden access policy, privacy preserving.

1. INTRODUCTION

cloud computing:

The term cloud computing refers to the practise of renting out access to various forms of digital infrastructure (including programmes and servers) over the World Wide Web (typically the Internet).

Complex architecture is represented in system diagrams by a cloud-shaped symbol. Data, programmes, and processing are all sent to external services in cloud computing. Cloud computing refers to the use of remotely hosted servers and software applications. Many of these businesses give their customers access to sophisticated server infrastructures and cutting-edge application suites.

There are consumer-oriented uses for super computing power that were previous for the military and academic institutions. Examples of these include financial portfolios, customize information, data storage, and massively immersive computer games. These application scan perform trillions of calculations per second.

To divide data processing tasks, the cloud computing uses large groups of computers, often running low-cost consumer PC technology with specialized networking. In today world, the majority of computers are part of a vast network of interconnected devices. Virtualization techniques are routinely used to unlock the full potential of cloud computing.

It includes: Features and service models:

Consider these elements of cloud computing, according to NIST definition:

Rather than dealing with the service providers directly, customers can self-provision computer resources such as server time and network storage as needed.

Using standard protocols, any client system no matter how thin or thick, can access network capabilities (e.g., mobile phones, laptops, and PDAs).

Multi-tenant models allow the providers resources to be pooled to serve many clients, with unique physical and virtual resources dynamically assigned and reassigned according to the demands of the consumers. it is common for customers to be unable or unwilling to know exactly where their purchased goods are located, but may have the option of specifying location at a more abstract level of abstraction (e.g., country, state, or data center). Resources include virtual machines, storage, processing, and network bandwidth.

The ability to automatically provision and release capabilities in specific situation rapid scaling Out and scaling in. In terms of provision in Clients have seemingly count option to pick from, and they may buy as many as they want any time they want.

A metering capability at a level of abstraction appropriate to the type of service is used to

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EFFICIENT RESOURCE ALLOCATION FOR ON DEMAND MOBILE EDGE CLOUD COMPUTING

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ABSTRACT: Mobile-edge cloud computing is a new paradigm to provide cloud computing capabilities at the edge of pervasive radio access networks in close proximity to mobile users. Aiming at provisioning flexible on-demand mobile-edge cloud service, in this paper we propose a comprehensive framework consisting of a resource-efficient computation offloading mechanism for users and a joint communication and computation (JCC) resource allocation mechanism for network operator. Specifically, we first study the resource-efficient computation offloading problem for a user, in order to reduce user's resource occupation by determining its optimal communication and computation resource profile with minimum resource occupation and meanwhile satisfying the QoS constraint. We then tackle the critical problem of user admission control for JCC resource allocation, in order to properly select the set of users for resource demand satisfaction. We show the admission control problem is NP-hard, and hence develop an efficient approximation solution of a low complexity by carefully designing the user ranking criteria and rigorously derive its performance guarantee. To prevent the manipulation that some users may untruthfully report their valuations in acquiring mobile-edge cloud service, we further resort to the powerful tool of critical value approach to design truthful pricing scheme for JCC resource allocation. Extensive performance evaluation demonstrates that the proposed schemes can achieve superior performance for on-demand mobile-edge cloud computing.

Keywords – Computation offloading, edge computing, joint communication and computation optimization, on-demand resource allocation.

1. INTRODUCTION

As smartphones are gaining enormous popularity, more and more new mobile applications such as face recognition, natural language processing, interactive gaming, and augmented reality are emerging and attract great attention [1]–[3]. This kind of mobile applications are typically resource-hungry, demanding intensive computation and real-time responsiveness. Due to the physical size constraint, however, mobile devices are in general resource-constrained, having limited computation resources. The tension between resource-hungry applications and resource-constrained mobile devices hence poses a significant challenge for the future mobile platform development. Mobile cloud computing is envisioned as a promising approach to address such a challenge. By offloading the computation via wireless access to the resource-rich cloud infrastructure, mobile cloud computing can augment the capabilities of mobile devices for resource-hungry applications. Currently, one common approach for mobile cloud computing is to offload the computation-intensive tasks to the remote public cloud infrastructure (e.g., Amazon EC2 and Windows Azure), in order to utilize the powerful computing and processing capabilities by the public clouds. As a matter of fact, the current public cloud architecture - built around static Internet-based installments of cloud resources not integrated with wireless networks - is already starting to show its limits in terms of computation-intensive mobile application support, since mobile users would experience long latency for data exchange with the public cloud through the wide area network (WAN), which risks to become the major impediment in satisfying the real-time interactive response requirement of mobile applications.

**ENHANCED PERFORMANCE IN LOCALIZATION OF SENSOR NODES WITH IDTN
ALGORITHM IN WIRELESS SENSOR NETWORKS**

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ABSTRACT:

In this paper we introduce a Triangulation (IDTN) algorithm which produces the lowest mean-distance error as compared with other existing algorithms. In this algorithm we formed a triangulation with nearby sensor nodes in which anchor nodes and target nodes are in the deployed in the network area and the unknown nodes whose location to be estimated. Triangulation method proves better localization algorithm compared with other methods. Anchor nodes measures the RSSI of nearest neighbouring nodes, based on RSSI values IDTN method approximates the nearest neighbouring nodes and DT triangles are formed.

KEYWORDS:

RSSI (Received Signal Strength Indicator), Improved Dynamic Triangulation (IDTN), Wireless Sensor Nodes.

I. INTRODUCTION:

The position of the sensor node is practically unidentified in the real time environment applications in WSN. Mobile user's position estimation plays a vital role in wireless sensor network, for both indoor and outdoor environments. The creation of an amount of node localisation protocols in recent years has reflected the importance of physical space for sensor networks. However, the majority of these methods were created for "traditional" sensor networks, and they only cover a tiny part of the design space. We'll identify a critical area of the design space that is currently underutilized by existing techniques. Re-executing the localization algorithm on a regular basis is the easiest way to keep up-to-date location estimates. The most effective approach is calculated by a number of device parameters, including node mobility, tolerance for sketchiness, and the frequency at which a node desires a location estimate. *Wireless sensor networks (WSN)* differentiate themselves from other wireless or wired networks through sensor and actuator based on interaction with the environment (Wang et al., 2003). Many algorithms were proposed to approximate the accurate Location of sensor nodes but when the nodes are in motion, most of the algorithms failed to estimate the precise Position of Target nodes [1],[2],[3],[4].

We proposed triangulation method to find the accurate Location of unknown nodes, whose location is frequently changing, with this scenario it is highly problematic for the anchor nodes to estimate the exact location of targeted nodes, we addressed this problem and provided an optimal solution for the Localization of WSNs to identify its neighbouring mobile nodes frequently and updates the status of mobile nodes time to time.

The paper presented in following sections such as: in Section-II we discussed about distance measurement based on RSSI model, which estimates the received signal strength from anchor nodes, Section-III describes about proposed IDTN algorithm, and in Section-IV Simulation Results.

II. Distance Measurement based on RSSI model

The most widely used wireless network models are FSP model, Hata Model, LDPL model, TRGR model, Log-Normal Shadowing Model, etc [2]. As in paper [1],[2] LNS model is best suited for RSSI measurement in wireless environment and the RSSI based Localization model not require any Hardware modules for the measurement of the localization, rather it only depends on the distance of nodes by using the P_t the transmitter power, P_r receiver signal power, the PL Exponent and the Path Loss Co-efficient which is in expressed in equations (1 & 2).

$$A_{RSS} = -10n \log_{10}(d_0) \quad (1)$$

Analysis of Facet-Loaded Rectangular DR-Rectenna Designs for Multisource RF Energy-Harvesting Applications

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Abstract—In this article, the characteristics of four spiral-facet structures are studied for RF energy-harvesting (RFEH) applications for increasing the harvesting power from the surrounding atmosphere. A rectangular dielectric resonance antenna (RDRA) is selected and placed above an FR4-epoxy substrate. Metallic rectangular spirals are then placed on the dielectric resonator (DR) surface to create resonances with insensitive polarization characteristics. The proposed spirals help provide wideband/multiband characteristics at 4.85, 5.0, 5.5, 5.8, and 6.25 GHz that covers 5G 4.9, WLAN 5.0, WLAN 5.5, Wi-Fi 5.8, and Wi-Fi 6E bands, respectively. The minimum gain achieved is 5 dBi in all possible configurations. A broadband rectifier circuit (4.67–7.0 GHz) with a staircase multistage transmission line matching network (MN) covering all resonant frequencies in various facet-loaded antenna configurations is proposed for RF-to-dc conversion purposes. The rectifier's maximum power conversion efficiency (PCE) is achieved as 77.3% at a 13.5 dBm input power level, and the corresponding output voltage is 4.92 V.

Index Terms—Broadband rectifier, circular polarization (CP), multiband, power conversion efficiency (PCE), radio frequency energy harvesting (RFEH), spiral facet.

I. INTRODUCTION

RADIO frequency energy harvesting (RFEH) is a promising approach for better alternatives for power sources that can mitigate the dependence on conventional batteries. The available power density in the ambient environment is low. However, the RFEH technique has grabbed significant

attention over other harvesting techniques due to increasing its signal availability even in the indoor environment and the small size of the harvesting system [1]. In the RFEH approach, the electromagnetic (EM) energy available in the surrounding environment is utilized and processed as suitable for powering low-power electronic devices, which is possible by a suitable harvesting system, named a rectenna or rectifying antenna. The performance of this rectenna system solely relies on the antenna and the rectifier circuit efficiency. Also, increasing the harvesting power by the antenna increases the rectenna output [2].

Nowadays, printed antenna configurations are more popular due to their ease of fabrication and compact size. Several planar and nonplanar antenna configurations have been reported for wideband/multiresonance characteristics. Various planar antenna configurations, viz., single-band [3], [4], broadband [5], and multiband [6] characteristics, have been investigated. Nonplanar antennas, such as dielectric resonator antennas (DRAs), have advantages such as high efficiency, large power handling capability, and 3-D design flexibility over traditional antennas. Hence, the DRA configurations are promising solutions for replacing conventional planar antennas. Besides, the DRAs have remarkable properties of broad bandwidth, high gain, and compatibility with planar antenna feeding techniques [7]. The antennas with a large effective aperture can collect more RF energy from the ambient environment. Therefore, high-gain characteristics in antennas are highly desired to ensure the maximum collection of RF energy from the surroundings.

Furthermore, the concept of a high-gain antenna in energy-harvesting applications has been well studied in [8]. The high-gain antennas are suitable if the incident direction of the received signal is known. However, for the unknown direction of the incident wave, an omnidirectional radiation feature, ensuring the significant receiving of RF energy in the receiver terminal, is desired. Also, the ambient energy is randomly polarized. Hence, the receiving antenna with circular polarization (CP) characteristics is essentially required to receive both linear and circularly polarized waves, which minimizes the polarization mismatch loss between transmitting and receiving antennas. A dual-polarized antenna with both

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Low Light Image Enhancement

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ABSTRACT

Each day, countless photographs are shot using the cameras on a wide variety of mobile devices. Even though advancements in image sensor technology have greatly enhanced the clarity of such obtained images, the visual quality is by no means guaranteed under varied illumination conditions. An original and straightforward strategy for improving images in dim conditions is provided in this work. The suggested method's central idea is to use several diffusion spaces to estimate the illumination component, which is likely to appear as the bright pixel even under the low-light scenario. By choosing the maximum value at each pixel position of those diffusion spaces, the illumination component can be correctly isolated from the scene reflectance and fine-tuned separately for improved visual quality. So, since the iterative diffusion process has a tendency to disclose previously hidden lighting components with brilliant intensities, we propose adopting the maximal value among diffused intensities at a specific pixel point, so-called maximal diffusion value, as the illumination component. The suggested method enhances image quality without major distortion while effectively suppressing the problem of noise amplification, in contrast to prior approaches that still face difficulties to balance between over-saturated and conservative restorations. Results from experiments conducted on reference datasets demonstrate the effectiveness and robustness of the suggested strategy in comparison to previously introduced methods in the literature.

KEYWORDS: Low-light image enhancement; deep learning; retinex; YCbCr.

1. INTRODUCTION

The low-light condition in everyday photographs is typically the result of a combination of circumstances, such as the time of day, the quality of the available light, and the presence of deliberate shadows. As a result, important details are lost and the scene's underlying structures take on a different appearance on the surface, thus diminishing the image quality and user experience. Many computer vision algorithms, including those for object detection [1], recognition [2], stereo matching [3], etc., suffer significantly when presented with such distorted inputs. Despite the fact that modern mobile devices, especially smartphones, contain camera modules that have the applicable solution, its usefulness is still constrained. Several techniques have been developed to effectively enhance the visual quality of low-light photographs. Historically, the most common method for this task has been to use the statistical information of the original input image to directly boost the hidden structure so that it becomes visible. However, the restoration outputs of those algorithms have a tendency to oversaturate relatively bright sections, making the textural qualities of the associated region likely unnoticeable. In order to alleviate this issue, histogram equalisation and its derivatives [4, 5] can slightly flatten the distribution of pixel intensities across the whole range. Additionally, they may be easily integrated with a number of optimization approaches, which greatly aid in adaptively adjusting the dynamic range by normalising the histogram of the original image. However, most histogram-based algorithms primarily focus on enhancing the contrast, rather than estimating the illumination component in an image, and therefore they typically fail to moderately restore the underlying structure that is buried in the shadows (e.g., under- or over-enhanced in uneven illuminations). Low-light image enhancement has instead made extensive use of the Retinex theory's [6] underlying assumption that the image may be divided into scene reflectance and its illumination. A large body of research in this domain, known as the decomposition-based method, has focused on isolating the lighting component from the reflectance component in an effort to get an improved early result. Over-highlights of edge-like regions generate aesthetically odd effects in the enhanced result, despite the fact that textural features are properly disclosed in the reflectance component. Furthermore, such an overemphasis frequently results in defects of halo artefacts around edge structures. In this work, we suggest a new, straightforward strategy for improving images shot in dim conditions. The proposed method is based on our realisation that the diffusion process provides a clear indication of the bright-light attribute present in the illumination component even in the shadowed area. Accordingly, we suggest using the highest value at each pixel position across various diffusion spaces as the lighting factor. Comparing the results of illumination estimate using this scheme with those using the maximal value among RGB channels or the association with neighbour pixels, as shown in Fig. 1(c) and (d), demonstrates a striking difference. It's worth noting that our pixel-wise pooling procedure has a good capacity to decrease the blur artefact caused by aggregation in the local window, which is commonly recognised for the local consistency of lighting in prior methods [7], [8]. Color inconsistency is avoided by choosing the highest diffusion value in the intensity channel alone throughout the enhancement process. It should be kept in mind that the predicted illumination component is modified in accordance with both global and local stretching techniques, as done in earlier methods [9], [10]. Here is a brief overview of the paper's most important findings: • The proposed method makes an effort to implement the idea that lights will typically show up brightest in the dark [6, 11]. To this purpose, we suggest using the highest value across all pixels in a set of diffusion spaces for the illumination. To

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E-Agri Kit: Agricultural Aid Using Deep Learning

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Abstract- This project showcases an agricultural aid app that was built and designed to assist farmers by employing Image Processing, Machine Learning, and Deep Learning. Features like early detection of plant disease are available in our application and are implemented in a number of ways. It was determined that Convolutional Neural Network was superior for detecting plant diseases with a high degree of accuracy. The farmer can use the weather forecast to plan out agricultural tasks like harvesting and plucking at the optimal time. A crop-specific fertilizer calculator is in the works to determine how much urea, diammonium phosphate, and muriate of potash should be applied to a given area to prevent the recurrence of disease caused by depleted soil minerals

Keywords- Deep learning, Techniques, Agriculture, Remote sensing, e-Agriculture, Image Processing, Plant Disease Detection.

I. INTRODUCTION

A research by the Associated Chambers of Commerce and Industry of India [1] estimates that annual agricultural losses due to pests and diseases amount to Rs.50,000 crore (\$500 billion). It's as if at least 200 million people in this country go to bed hungry every night. Because of its significance, agriculture is the main source of income for most of the rural people in low-income countries. Huge amounts of money are wasted because of unforeseen pest invasions and unfavorable weather conditions that damage crops. A simple agro android app system can make a big difference in the quality of life for people in rural areas. When plant infections spread, they can cause a wide range of issues, including crop failures and food scarcity.

In order to help farmers deal with this problem, we conducted a thorough literature analysis [5] and created an android app called Agricultural Aid that employs machine learning to detect plant diseases. In order to provide services such as a 7-day weather forecast, a fertilizer calculator, and language translation into up to four different languages, we have integrated this detection with an Android app developed with Android Studio and its APIs.

With the use of Machine Learning and Deep Learning models, we were able to use images to categories diseases. The first method is called "Image Processing," and it entails a string of preprocessing procedures to zero in on the damaged region. These stages include filtering, colour space conversion, thresholding, and contouring. Using these methods in tandem with principles from Machine Learning enables the classification of affected areas. However, this type of method has a low degree of accuracy.

The "GrabCut" Algorithm can be used in place of these processes; it is an effective method of foreground extraction that can be used to get rid of background noise with minimal human involvement [4]. Although this method could improve the application's background removal and classification accuracy, it is not being used at this time.

The second strategy, called Deep Learning, employs a deep neural network to train and test leaf image databases for illness categorization. The results of numerous Deep Learning Models, such as CNN, ResNet-152, and Inception v3, are compared in this work. As part of our agriculture support, we use pictures of healthy and diseased plant leaves to train and shape a CNN Model into an automated plant disease system.

A Novel Implementation of Robust CT scan Based Brain Diagnosis Process Using CNN GB Technique

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Abstract- While existing methods for detecting shilling attacks in online recommender systems are effective at identifying individual attackers, they are not as effective at detecting group shilling assaults, in which a group of attackers cooperate to influence the output of the system by injecting bogus profiles. This article presents a method for detecting shilling attacks as a group, using the bisecting K-means clustering algorithm. We begin by separating each items rating track and subdividing those into potential groups based on a predetermined amount of time. In the second place, we propose using the degree of item attention and user activity to determine the suspiciousness of candidate groups. In the end, we use the bisecting K-means algorithm to cluster the candidate groups according to their suspicious degrees and obtain the attack groups. Experiments conducted on the Netflix and Amazon data sets validate the superiority of the suggested strategy over the gold standards the second place, we propose using the degree of item attention and user activity to determine the suspiciousness of candidate groups. In the end, we use the bisecting K-means algorithm to cluster the candidate groups according to their suspicious degrees and obtain the attack groups. Experiments conducted on the Netflix and Amazon data sets validate the superiority of the suggested strategy over the gold standards.

Keywords- Detection, Shilling Attacks, Bisecting clustering, recommender systems, accuracy.

I. INTRODUCTION

The brain tumor of CT scan images cannot be identified if any noise over imposed on object. The CT scan-based brain tumor detection system gives the better diagnosis process [1].

For any medical image processing techniques follows the three categories of operation those are pre-processing feature extraction and classification. Preprocessing stage is offering segmentation, transformation, and filtration. In this research work adaptive median filtration is taken as pre-processor.

CNN and GBML are selected for classification, feature extraction; therefore, getting output is a disease location of brain image. The CT scan is a primary imaging tool, which can scan the human brain and giving the diagnosis disorders.

This decision-making process can help the fast and accurate disease identification and classification [11-12]. The recent technologies giving the hidden information about selected medical image.

Image pattern recognition and human interaction are the computer applications in image recognition mechanism. These types of tools are developing the data acquisition from x-ray, MRI, CT and various medical imaging techniques [13-15]. The diagnosis center lab technicians and researchers are using this application they can diagnosis the process simple.

II. LITERATURE SURVEY

[1] Bengio, Y., Lamblin, P., Popovici, D., Larochelle, H.: Greedy layer-wise coaching of deep networks. Advances in Neural Information Processing Systems 19 (NIPS), 153-160 (2007). Complexity concept of circuits strongly suggests that deep architectures can be an awful lot extra



DM (DATA MINING) & FEATURE ANALYSIS OF COLLEGE STUDENTS' CAMPUS NETWORK BEHAVIOUR. 29

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ABSTRACT:-

Data Mining, Student Network Activity

There has been a shift in the management of student affairs from anecdotal, qualitative knowledge to scientific, quantitative analysis, thanks in large part to the rise and promotion of big data methods that allow teachers to understand the behaviour patterns of students in a timely and accurate manner, especially to find the groups of students that need to be focused on in a timely manner. With a total of 23.843 million Internet access records spanning 4 years, this paper uses the clustering method of data mining to analyse the campus network behaviour of 3,245 students at a specific B university. In the end, we see that there are four distinct categories of students in terms of their Internet access, and that 350 of them are heavy network users. These students' academic outcomes and general performance are impacted. Data mining was performed on student campus network behaviour in this study, which can be used as a real-world example of how data mining can be put to use in the field of student affairs management. This work provides useful information that can be used to further the professionalisation and rigour of the field.

Index Terms - Data -Mining, Qunatitative, Analysis, Big Data, Network Acitivity, Digital Campus

1.Introduction

Management issues in student affairs are exacerbated by the tension between the limited time and resources of student counsellors and the wide range of student behaviours. This makes it more difficult to identify and reach out to students who may need help before their problems become more serious. Student counsellors have been able to conduct quantitative analysis of student behaviours at school since the turn of the 21st century thanks to the rapid development of information technology in education and the construction of digital campuses, allowing them to identify and intervene with students who may be experiencing difficulties early on.

Modern college students are the first generation to grow up with the Internet, and its pervasive presence permeates every aspect of their lives, from socialising to academics to general thought processes. As a result, we have the opportunity to utilise big data techniques to learn about the habits of their campus network. Existing student counsellors face a challenge and an important opportunity in the explosive growth of data categories and data scales: how to mine useful information for student counsellors.

Using a combination of big data thinking and big data mining techniques, the authors of this study set out to examine the characteristics of college students' network behaviour rules and identify those students who should be monitored closely due to their heavy use of the campus network, all while beginning with real-world work problems. Data mining in this study could also serve as a real-world example for other students to learn from.

AN EFFICIENT IOT BASED PLATFORM FOR REMOTE REAL TIME CARDIAC ACTIVITY MONITORING

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ABSTRACT: In this article, a novel and an efficient methodology is presented for real-time monitoring of ECG signals. The method involves fast Fourier transform (FFT) based discrete wavelet transform (DWT) for extracting the features from the heartbeats which involves less computational complexity in terms of additions and multiplications operations for higher order filter lengths. These features extracted are recognized using particle swarm optimization (PSO) tuned twin support vector machines (TSVM) classifier. The TSVM classifier is four times faster than the standard SVM while the PSO technique is employed to gradually tune the classifier parameters to achieve more accuracy. The proposed methodology is implemented on IoT based microcontroller platform and validated on the benchmark Physionet data to classify 16 categories of ECG signals. Once an abnormality is detected, the platform generates a pop-up message as a warning and sends the information to a remote platform allowing hospitals to take preventive measures. The platform reported a higher overall accuracy of 95.68% than the existing studies. Further, such implementation can be utilized as a warning system in both homecare as well as tele-monitoring applications to continuously monitor the cardiac condition of a subject anywhere to the state-of-art heart disease diagnosis.

Keywords – Electrocardiogram (ECG), feature extraction, machine learning, microcontroller platform, wifi-module.

1. INTRODUCTION

Smart healthcare has emerged as a growing sector due to increased health awareness among consumers and rapid technological advancements [1]–[4]. As a result, various advanced devices or gadgets are developed, those will serve an estimate of 808.9 million users by the end of 2020 to improve the healthcare technology [1]. These devices are widely used to serve different purposes including but not limited to continuously monitor the biomedical signals like electrocardiography (ECG). These devices facilitate automatic efficient diagnosis of cardiac diseases by processing longer duration ECG recordings which is done by an experienced cardiologist and hence, they reduce the time required for analysis. These devices are developed considering the following key points like i) saving large quantity of biomedical data ii) developing devices having features offering low-energy consumption, higher computation capable, i.e., working at higher speed, battery operated, and long life iii) tele-medicine services using up-to-date smartphones based technology [3], [4]. Due to enhanced health care and increased patient compliance, usage of such devices have reported significant growth in the market [3], [4]. These devices/systems typically monitor the subject's condition which include blood pressure, essential indications and ECG [6].

AN EFFICIENT SPAM DETECTION TECHNIQUE FOR IOT DEVICES USING MACHINE LEARNING

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ABSTRACT: The Internet of Things (IoT) is a group of millions of devices having sensors and actuators linked over wired or wireless channel for data transmission. IoT has grown rapidly over the past decade with more than 25 billion devices are expected to be connected by 2020. The volume of data released from these devices will increase many-fold in the years to come. In addition to an increased volume, the IoT devices produces a large amount of data with a number of different modalities having varying data quality defined by its speed in terms of time and position dependency. In such an environment, machine learning algorithms can play an important role in ensuring security and authorization based on biotechnology, anomalous detection to improve the usability and security of IoT systems. On the other hand, attackers often view learning algorithms to exploit the vulnerabilities in smart IoT-based systems. Motivated from these, in this paper, we propose the security of the IoT devices by detecting spam using machine learning. To achieve this objective, Spam Detection in IoT using Machine Learning framework is proposed. In this framework, five machine learning models are evaluated using various metrics with a large collection of inputs features sets. Each model computes a spam score by considering the refined input features. This score depicts the trustworthiness of IoT device under various parameters. REFIT Smart Home dataset is used for the validation of proposed technique. The results obtained proves the effectiveness of the proposed scheme in comparison to the other existing schemes.

Keywords – IOT systems, machine learning and smart home datasets

1. INTRODUCTION

Internet of Things (IoT) enables convergence and implementations between the real-world objects irrespective of their geographical locations. Implementation of such network management and control make privacy and protection strategies utmost important and challenging in such an environment. IoT applications need to protect data privacy to fix security issues such as intrusions, spoofing attacks, DoS attacks, DoS attacks, jamming, eavesdropping, spam, and malware. The safety measures of IoT devices depends upon the size and type of organization in which it is imposed. The behavior of users forces the security gateways to cooperate. In other words, we can say that the location, nature, application of IoT devices decides the security measures [1]. For instance, the smart IoT security cameras in the smart organization can capture the different parameters for analysis and intelligent decision making [2]. The maximum care to be taken is with web-based devices as maximum number of IoT devices are web dependent. It is common at the workplace that the IoT devices installed in an organization can be used to implement security and privacy features efficiently. For example, wearable devices collect and send user's health data to a connected smartphone should prevent leakage of information to ensure privacy. It has been found in the market that 25-30% of working employees connect their personal IoT devices with the organizational network. The expanding nature of IoT attracts both the audience, i.e., the users and the attackers. However, with the emergence of ML in various attacks scenarios, IoT devices choose a defensive strategy and decide the key parameters in the security protocols for trade-off between security, privacy and computation. This job is challenging as it is usually difficult for an IoT system with limited resources to estimate the current network and timely attack status.

A DATA SHARING PROTOCOL TO MINIMIZE SECURITY AND PRIVACY RISKS OF CLOUD STORAGE IN BIG DATA ERA

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ABSTRACT: A cloud-based big data sharing system utilizes a storage facility from a cloud service provider to share data with legitimate users. In contrast to traditional solutions, cloud provider stores the shared data in the large data centers outside the trust domain of the data owner, which may trigger the problem of data confidentiality. This paper proposes a secret sharing group key management protocol (SSGK) to protect the communication process and shared data from unauthorized access. Different from the prior works, a group key is used to encrypt the shared data and a secret sharing scheme is used to distribute the group key in SSGK. The extensive security and performance analyses indicate that our protocol highly minimizes the security and privacy risks of sharing data in cloud storage and saves about 12% of storage space.

Keywords – Big data, security and privacy, cloud storage, data sharing

1. INTRODUCTION

The emerging technologies about big data such as Cloud Computing [1], Business Intelligence [2], Data Mining [3], Industrial Information Integration Engineering (IIIE) [4] and Internet-of-Things [5] have opened a new era for future Enterprise Systems(ES) [6]. Cloud computing is a new computing model, in which all resource on Internet form a cloud resource pool and can be allocated to different applications and services dynamically. Compared with traditional distribute system, a considerable amount of investment saved and it brings exceptional elasticity, scalability and efficiency for task execution. By utilizing Cloud Computing services, the numerous enterprise investments in building and maintaining a supercomputing or grid computing environment for smart applications can be effectively reduced. Despite these advantages, security requirements dramatically rise when storing personal identifiable on cloud environment [7], [8]. This raise regulatory compliance issues since migrate the sensitive data from federate domain to distribute domain. To take the benefit enabled by big data technologies, security and privacy issues [9], [10] must be addressed firstly. Building security mechanism for cloud storage is not an easy task. Because shared data on the cloud is outside the control domain of legitimate participants, making the shared data usable upon the demand of the legitimate users should be solved. Additionally, increasing number of parties, devices and applications involved in the cloud leads to the explosive growth of numbers of access points, which makes it more difficult to take proper access control. Lastly, shared data on the cloud are vulnerable to lost or incorrectly modified by the cloud provider or network attackers. Protecting shared data from unauthorized deletion, modification and fabrication is a difficult task. Conventionally, there are two separate methods to promote the security of sharing system. One is access control, in which only authorized user recorded in the access control table has the access privilege of the shared data.

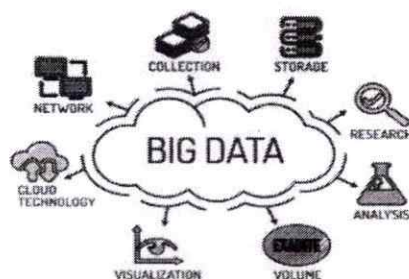


Fig.1: Example figure

DETECTING MALICIOUS SOCIAL BOTS BASED ON CLICK STREAM SEQUENCES

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ABSTRACT: With the significant increase in the volume, velocity, and variety of user data (e.g., user generated data) in online social networks, there have been attempts to design new ways of collecting and analyzing such big data. For example, social bots have been used to perform automated analytical services and provide users with improved quality of service. However, malicious social bots have also been used to disseminate false information (e.g., fake news), and this can result in real-world consequences. Therefore, detecting and removing malicious social bots in online social networks is crucial. The most existing detection methods of malicious social bots analyze the quantitative features of their behavior. These features are easily imitated by social bots; thereby resulting in low accuracy of the analysis. A novel method of detecting malicious social bots, including both features selection based on the transition probability of clickstream sequences and semi-supervised clustering, is presented in this paper. This method not only analyzes transition probability of user behavior clickstreams but also considers the time feature of behavior. Findings from our experiments on real online social network platforms demonstrate that the detection accuracy for different types of malicious social bots by the detection method of malicious social bots based on transition probability of user behavior clickstreams increases by an average of 12.8%, in comparison to the detection method based on quantitative analysis of user behavior.

Keywords – Online social network, social bots, user behavior, semi-supervised clustering.

1. INTRODUCTION

In online social networks, social bots are social accounts controlled by automated programs that can perform corresponding operations based on a set of procedures [1]. The increasing use of mobile devices (e.g., Android and iOS devices) also contributed to an increase in the frequency and nature of user interaction via social networks. It is evidenced by the significant volume, velocity and variety of data generated from the large online social network user base. Social bots have been widely deployed to enhance the quality and efficiency of collecting and analyzing data from social network services. For example, the social bot SF QuakeBot [2] is designed to generate earthquake reports in the San Francisco Bay, and it can analyze earthquake related information in social networks in real-time. However, public opinion about social networks and massive user data can also be mined or disseminated for malicious or nefarious purpose [3]. In online social networks, automatic social bots cannot represent the real desires and intentions of normal human beings, so they are usually looked upon malicious ones.

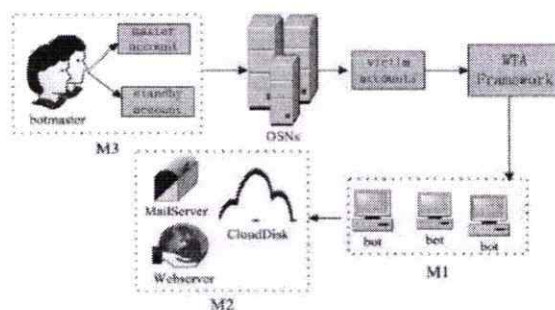


Fig.1: Example

SCALABLE AND SECURE BIG DATA IOT SYSTEM BASED ON MULTIFACTOR AUTHENTICATION AND LIGHTWEIGHT CRYPTOGRAPHY

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ABSTRACT: Organizations share an evolving interest in adopting a cloud computing approach for Internet of Things (IoT) applications. Integrating IoT devices and cloud computing technology is considered as an effective approach to storing and managing the enormous amount of data generated by various devices. However, big data security of these organizations presents a challenge in the IoT-cloud architecture. To overcome security issues, we propose a cloud-enabled IoT environment supported by multifactor authentication and lightweight cryptography encryption schemes to protect big data system. The proposed hybrid cloud environment is aimed at protecting organizations' data in a highly secure manner. The hybrid cloud environment is a combination of private and public cloud. Our IoT devices are divided into sensitive and nonsensitive devices. Sensitive devices generate sensitive data, such as healthcare data; whereas nonsensitive devices generate nonsensitive data, such as home appliance data. IoT devices send their data to the cloud via a gateway device. Herein, sensitive data are split into two parts: one part of the data is encrypted using RC6, and the other part is encrypted using the Fiestel encryption scheme. Nonsensitive data are encrypted using the Advanced Encryption Standard (AES) encryption scheme. Sensitive and nonsensitive data are respectively stored in private and public cloud to ensure high security. The use of multifactor authentication to access the data stored in the cloud is also proposed. During login, data users send their registered credentials to the Trusted Authority (TA). The TA provides three levels of authentication to access the stored data: first-level authentication - read file, second-level authentication - download file, and third-level authentication - download file from the hybrid cloud. We implement the proposed cloud-IoT architecture in the NS3 network simulator. We evaluated the performance of the proposed architecture using metrics such as computational time, security strength, encryption time, and decryption time.

Keywords – Big data, cloud computing, Internet of Things, multilevel authentication, lightweight cryptography

1. INTRODUCTION

In accordance with the advancement and wide use of Internet of Things (IoT) applications and with the emergence of wireless communication and mobile technologies, IoT and cloud computing have become important concepts. IoT aim to provide connectivity for anything with minimum storage and computing capabilities [1], [2]. Security is a major issue in cloud-integrated IoT, and the user data stored in the cloud requires secure protection [3]. A lightweight multifactor secured smart card-based user authentication is introduced in cloud-IoT applications [4]. Figure 1 shows the architecture for cloud-integrated IoT, which consists of the hybrid cloud, IoT devices, and users.

PROTECTING USER DATA IN PROFILE MATCHING SOCIAL NETWORKS

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ABSTRACT: In this paper, we consider a scenario where a user queries a user profile database, maintained by a social networking service provider, to identify users whose profiles match the profile specified by the querying user. A typical example of this application is online dating. Most recently, an online dating website, Ashley Madison, was hacked, which results in disclosure of a large number of dating user profiles. This data breach has urged researchers to explore practical privacy protection for user profiles in a social network. In this paper, we propose a privacy-preserving solution for profile matching in social networks by using multiple servers. Our solution is built on homomorphic encryption and allows a user to find out matching users with the help of multiple servers without revealing to anyone the query and the queried user profiles in clear. Our solution achieves user profile privacy and user query privacy as long as at least one of the multiple servers is honest. Our experiments demonstrate that our solution is practical.

Keywords – User profile matching, data privacy protection, ElGamal encryption, Paillier encryption, homomorphic encryption.

1. INTRODUCTION

Matching two or more users with related interests is an important and general problem, applicable to a wide range of scenarios including job hunting, friend finding, and dating services. Existing on-line matching services require participants to trust a third party server with their preferences. The matching server has thus full knowledge of the users' preferences, which raises privacy issues, as the server may leak (either intentionally, or accidentally) users' profiles. When signing up for an online matching service, a user creates a "profile" that others can browse. The user may be asked to reveal details, such as age, sex, education, profession, number of children, religion, geographic location, sexual proclivities, drinking behavior, hobbies, income, religion, ethnicity, drug use, home and work addresses, favorite places. Even after an account is canceled, most online matching sites may retain such information. Users' personal information may be re-disclosed not only to prospective matches, but also to advertisers and, ultimately, to data aggregators who use the data for purposes unrelated to online matching and without customer consent. In addition, there are risks such as scammers, sexual predators, and reputational damage that come along with using online matching services. Many online matching sites take shortcuts with respect to safeguarding the privacy and security of their customers. Often they use counterintuitive "privacy" settings, and their data management systems have serious security flaws. In July 2015, "The Impact Team" group stole user data from Ashley Madison, a commercial website billed as enabling extramarital affairs.

SECURE DATA TRANSFER AND DELETION USING COUNTER BLOOMING FILTER BY CLOUD COMPUTING

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ABSTRACT: With the rapid development of cloud storage, an increasing number of data owners prefer to outsource their data to the cloud server, which can greatly reduce the local storage overhead. Because different cloud service providers offer distinct quality of data storage service, e.g., security, reliability, access speed and prices, cloud data transfer has become a fundamental requirement of the data owner to change the cloud service providers. Hence, how to securely migrate the data from one cloud to another and permanently delete the transferred data from the original cloud becomes a primary concern of data owners. To solve this problem, we construct a new counting Bloom filter-based scheme in this paper. The proposed scheme not only can achieve secure data transfer but also can realize permanent data deletion. Additionally, the proposed scheme can satisfy the public verifiability without requiring any trusted third party. Finally, we also develop a simulation implementation that demonstrates the practicality and efficiency of our proposal.

Keywords – Cloud storage, Data deletion, Data transfer, Counting Bloom filter, Public verifiability

1. INTRODUCTION

Cloud computing, an emerging and very promising computing paradigm, connects large-scale distributed storage resources, computing resources and network bandwidths together[1,2]. By using these resources, it can provide tenants with plenty of high-quality cloud services. Due to the attractive advantages, the services (especially cloud storage service) have been widely applied[3,4], by which the resource-constraint data owners can outsource their data to the cloud server, which can greatly reduce the data owners' local storage overhead[5,6]. According to the report of Cisco[7], the number of Internet consumers will reach about 3.6 billion in 2019, and about 55 percent of them will employ cloud storage service. Because of the promising market prospect, an increasing number of companies (e.g., Microsoft, Amazon, Alibaba) offer data owners cloud storage service with different prices, security, access speed, etc. To enjoy more suitable cloud storage service, the data owners might change the cloud storage service providers. Hence, they might migrate their outsourced data from one cloud to another, and then delete the transferred data from the original cloud. According to Cisco[7], the cloud traffic is expected to be 95% of the total traffic by the end of 2021, and almost 14% of the total cloud traffic will be the traffic between different cloud data centers. Foreseeably, the outsourced data transfer will become a fundamental requirement from the data owners' point of view.

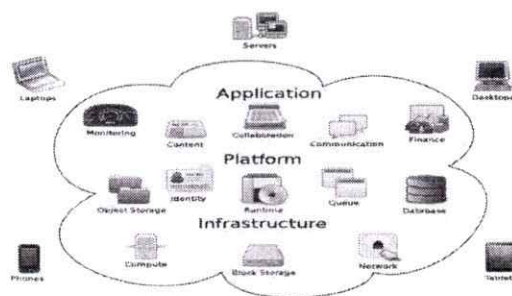


Fig.1: Example figure

P-MOD: SECURE PRIVILEGE-BASED MULTILEVEL ORGANIZATIONAL DATA-SHARING IN CLOUD COMPUTING

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ABSTRACT: Cloud computing has changed the way enterprises store, access and share data. Big data sets are constantly being uploaded to the cloud and shared within a hierarchy of many different individuals with different access privileges. With more data storage needs turning over to the cloud, finding a secure and efficient data access structure has become a major research issue. In this paper, a Privilege-based Multilevel Organizational Data-sharing scheme (P-MOD) is proposed that incorporates a privilege-based access structure into an attributebased encryption mechanism to handle the management and sharing of big data sets. Our proposed privilege-based access structure helps reduce the complexity of defining hierarchies as the number of users grows, which makes managing healthcare records using mobile healthcare devices feasible. It can also facilitate organizations in applying big data analytics to understand populations in a holistic way. Security analysis shows that P-MOD is secure against adaptively chosen plaintext attack assuming the DBDH assumption holds. The comprehensive performance and simulation analyses using the real U.S. Census Income data set demonstrate that P-MOD is more efficient in computational complexity and storage space than the existing schemes.

Keywords – Cloud computing, big data, hierarchy, privilege-based access, sensitive data, attribute-based encryption, mobile healthcare.

1. INTRODUCTION

IT was estimated that data breaches cost the United States' healthcare industry approximately \$6.2 billion in 2016 alone [1]. To mitigate financial loss and implications on the reputation associated with data breaches, large multilevel organizations, such as healthcare networks, government agencies, banking institutions, commercial enterprises and etc., began allocating resources into data security research to develop and improve accessibility and storage of highly sensitive data. One major way that large enterprises are adapting to increased sensitive data management is the utilization of the cloud environment. It was reported that more than half of all U.S. businesses have turned over to the cloud for their business data management needs [2]. The on-demand cloud access and data sharing can greatly reduce data management cost, storage flexibility, and capacity [3]. However, data owners have deep concerns when sharing data on the cloud due to security issues. Once uploaded and shared, the data owner inevitably loses control over the data, opening the door to unauthorized data access. A critical issue for data owners is how to efficiently and securely grant privilege level-based access rights to a set of data. Data owners are becoming more interested in selectively sharing information with data users based on different levels of granted privileges. The desire to grant level-based access results in higher computational complexity and complicates the methods in which data is shared on the cloud. Research in this field focuses on finding enhanced schemes that can securely, efficiently and intelligently share data on the cloud among users according to granted access levels.

2. LITERATURE REVIEW

Ciphertext-policy attributebased encryption

In several distributed systems a user should only be able to access data if a user possesses a certain set of credentials or attributes. Currently, the only method for enforcing such policies is to employ a trusted server to store the data and mediate access control. However, if any server storing the data is compromised, then the confidentiality of the data will be compromised. In this paper we present a system for realizing complex access control on encrypted data that we call ciphertext-policy attribute-based encryption. By using our techniques encrypted data can be kept

INTELLIGENT IOT SERVICES BASED ON ARTIFICIAL AND MACHIN LEARNING TECHNOLOGY

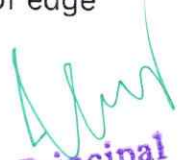
Dr. Altaf C, Vijayakumar Sajjan, Dr.Srikanth Reddy E, Srikanth
Parikibandla

DOI: 10.14704/nq.2022.20.10.NQ55355

Abstract

The development of the Internet of Things (IoT) continues at a rapid rate. Although the Internet of Things (IoT) has come a long way since its introduction in the late 1990s, there are still significant hurdles to overcome, particularly in the areas of security and privacy. Due to their limited resources, edge devices provide unique challenges for security, especially in the areas of authentication and authorization. A number of approaches have been proposed to address these issues in the past, but the vast majority of them revolve around boosting the processing speed, storage space, and/or power of edge devices. However, such solutions are impractical since they are either not practicable owing to the limited size of IoT edge devices or too expensive to be widely adopted. The use of lightweight cryptographic primitives has also been proposed as a solution. Same, however, are impractical because not all edge devices have the resources to implement these solutions. In order to solve the problems with authentication and authorization in edge devices, this study proposes to employ AI/machine learning. The proposed solution utilises a fog computing paradigm within the context of a smart home, but it does not rely on the processing speed, memory, or battery life of edge devices in any way.

Keywords


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IOT Based Indoor And Outdoor Air Pollution Monitoring System Using Raspberry Pi

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Abstract

Living in a healthy surroundings is a want for every person whether indoor or out of doors. However, pollutions occur everywhere and most human beings are merely conscious of the significance of getting clean outside air to breathe and aren't worried approximately the indoor air great. Indoor air pleasant refers to the fine in the constructing, and pertains to the health and comfort of the building occupants. Dangerous debris exist in the outside air, pollute the indoor environment and bring risky conditions because the polluted air travels into the residence or constructing through home windows or doorways. There fore, a wi-fi Internet of Things-primarily based totally air satisfactory tool is advanced to display the air incredible in the indoor environment. The proposed gadget integrates a low-price air great sensor, temperature and humidity sensors, a unmarried-board laptop (Raspberry Pi 2 microprocessor) and cloud storage. The tool gives actual-time air remarkable studying, transfers the information via a wi-fi network to the Internet and displays the facts in dedicated website. Further more, it shops statistics in cloud storage and sends e-mail notification message to the individual at the same time as bad scenario is met. The study has a giant impact on promoting cheaper and transportable clever pollution tracking system as the development of the tool the use of low-fee and off-the-shelf additives.

Keywords: IOT, WSN, Raspberry PI, Etc.

1. INTRODUCTION

Most of the people they are worried is secure to eat or the water wholesome lifestyles is the air approximately their health, whether or not or now not the meals is straightforward to drink. The maximum essential issue in exceptional which most human beings pay little interest to there surroundings. The air pollutants is frequently occurring in Malaysia because of many sources inclusive of open-fire, gas combustion from automobiles, and factories waste. These activities launch harmful gases and one of the examples is nitrogen oxide (NOX) that's the number one component of acid rain formation. Harmful gases affect our wellness and can set off lung most cancers or chronic coronary coronary heart disease even though in indoor environments. This is due to the truth the polluted out of doors air come into the indoor environment via windows and doors. Thus, a device which detects the air

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5G/Millimeter-Wave Rectenna Systems for Radio-Frequency Energy Harvesting/Wireless Power Transmission Applications

An overview.

XXXXX

In this article, we present an overview of the 5G rectifying antenna and its primary elements for applications in millimeter-wave (mm-wave) energy harvesting (EH) and wireless power transmission (WPT). The wide spectrum available for 5G communication bands have attracted significant attention for extensive applications. The power received by the harvesting antenna relies on the size of the antenna. Hence, the realization of antenna and rectenna systems with good efficiency at 5G mm-wave is a challenge. This review article highlights the recent advances in 5G rectenna systems for different applications at the component and structure levels. The primary objectives of the article are 1) to explore the potential advances of mm-wave rectenna systems and the feasibility of

their designs to attain desired characteristics and 2) to present a comparative assessment of performance parameters of existing rectenna systems.

INTRODUCTION

Demands for extremely high data rates, large network capacity, and flawless connectivity have increased globally as wireless technologies, such as 5G cellular systems, the Internet of things (IoT), and machine-to-machine, machine-to-human, and human-to-machine communications, have advanced. 5G communication has been considered an appealing approach for meeting energy demands. The prime objective of 5G communication systems is to supply cellular consumers with higher data rates, lower power consumption, and better quality of services consistently. The frequency spectrum of 5G communication has been divided into several bands, including lower-band 5G

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41-43

AN ACCURATE DESIGNING AND DEVELOPING OF ANTI-MALWARE SYSTEMS TO ENSURE THE IDENTIFIED THREAT USING LSTM

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ABSTRACT

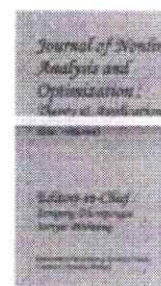
Due to the widespread use of information and communication technology (ICT) applications in daily life, malicious software threats and their detection are becoming a more important sub domain of information security. The identification of all malware is one of the most difficult problems in the design and development of anti-malware systems. Dynamic analytic algorithms' development, which allows for quick detection of polymorphic and metamorphic malware, is crucial. We present a technique for detecting malicious code by analyzing run trace data using Long Short-Term Memory (LSTM) (LSTM). Malicious and benign Portable Executable (PE) files' execution traces were modeled. Beginning with run trace outputs gathered through dynamic analysis of PE files, we built our first dataset. With a dataset that includes both benign and harmful applications, the proposed method was shown to have an accuracy rate of more than 98 percent after undertaking thorough testing.

Keywords: LSTM, malware, deep learning, classification

INTRODUCTION

Malware is software that has been created to do damaging actions including stealing confidential information, gaining root access, and incapacitating targeted computers. Meanwhile, a wide range of malware has emerged as a result of the Internet's and the software industry's fast expansion. The total amount of malware samples has increased by almost 34% over the last three quarters, reaching more than 774 million samples. Malicious software (also known as malware) has been increasing over time. Hence, malware detection is a topic that is constantly intriguing and important. How to recognize malware has been the subject of extensive research. Because they have a limited ability to detect new threats, static signature-based anti-viruses are frequently utilized to identify malware. New malware may easily avoid signature-based security measures detection if it was encrypted, obfuscated, or packed to avoid detection. This detection method may be circumvented by zero-day malware. Analyzing a system in real-time In contrast to code obfuscation strategies, lurenjie17@mails.ucas.ac.cn is a more effective malware detection tool. A safe and regulated environment, such as a virtual machine, simulator, sandbox, etc., is often required for dynamic behavior-based malware detection approaches [4] [5]. In the next step, behavioral analysis is carried out utilizing information gathered from interactions with the environment, such as API calls and DLL calls. Though extensively explored, these methods are inefficient when used on big datasets [6]. It takes a lot of time and effort to safeguard the operating environment from being tainted by dynamic behavior-based malware detection approaches. Malware detection strategies that use machine learning have been presented in the last several years. A malware detection approach based on data mining was initially published in reference [7]. It uses three kinds of static features: the PE header, a text sequence, and a byte sequence to identify malware. Using n-grams instead of byte sequences, Kolter and Maloof [8] examined the performance of naïve Bayes, decision trees, and support vector machines for virus detection. An artificial neural network [9] was also employed for malware detection in the later years [9,10]. There are also new approaches to detecting malware. Malware may be detected

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44-46

SYNTHETIC FIBER INCLUDING POLYPROPYLENE AND POLYESTER CONCRETE for MECHANICAL PROPERTIES RESEARCH

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ABSTRACT

Concrete constructed with regular Portland cement had certain characteristics. Concrete is known to be brittle and weak in tension yet robust in compression. Cracks that appear as soon as concrete is poured and before it has fully set are another important flaw in concrete. These fissures are the root of concrete's fragility, especially in big worksite applications, which results in a lack of durability as well as later fracture and failure. The failures can be fixed by adding enough fibres to make up for the absences. Many studies on various fibre combinations, such as Polypropylene and Polyester, are now being conducted in an effort to achieve high tensile strength and appropriate dispersion in M25 grade concrete. The fibres are utilized in this experimental inquiry by addition with different proportions of (0%,0.25%,0.5%,0.75%,1%) with addition of optimum dosages of Synthetic fibre reinforced concrete. The specimens were fabricated cubes, cylinders, beams were cast and cured for 28 days. Compressive strength, Split tensile strength, flexural strength tests were performed to know the behavior of Synthetic fibre reinforced concrete. In this study, the strength performance of concrete with polypropylene (PP) and polyester(P) fibres are studied. The use of polypropylene and polyester fibres increasing the properties of concrete such as compressive strength, tensile strength, flexural strength. Fibres provide support to concrete in all direction by equally distributed throughout the matrix. It also prevents the problem of corrosion. For this purpose, polypropylene (PP) and polyester (P) fibre is added in varying volume fraction (V) of 0.25%, 0.5%, 0.75%, 1% of M25 grade concrete. The concrete was cast with Ordinary Port-land Cement, M-Sand, with and without fibres.

Keywords : Synthetic fibre, Polypropylene and Polyester, compression test, split tensile test, flexural test.

INTRODUCTION

Originally, cement, fine aggregate, coarse aggregate, and water are combined to create concrete, which is most frequently used as a construction material. A certain percentage of plastics can be recycled as a result of the change in lifestyle and rise in population, which has led to a considerable growth in the use of plastics. Many investigations into the various types of fibres led to a significant amount of material reuse. Many benefits may be derived from a healthy and extensive reuse of these materials. a test on the reinforced concrete with synthetic fibre addition in M25 grade concrete. The ability of a structure to withstand weathering, chemical assault, abrasion, and other activities that lead to degradation during the course of its service life is equally important as the capacity of a structure to resist the loads applied on it. Although concrete offers many advantages regarding mechanical characteristics and economic aspects of the construction, the brittle behavior of the material remains a larger handicap for the seismic and other applications where flexible behavior is essentially required. Recently, however the development of SFRC has provided a technical basis for improving these deficiencies. PP fibres affects the various properties of

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EXCELLENT PROTECTION FROM NETWORK ASSAULTS ON EFFECTIVE DEVELOPMENT OF ORGANIZATION SAFETY CONCERNS

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Abstract

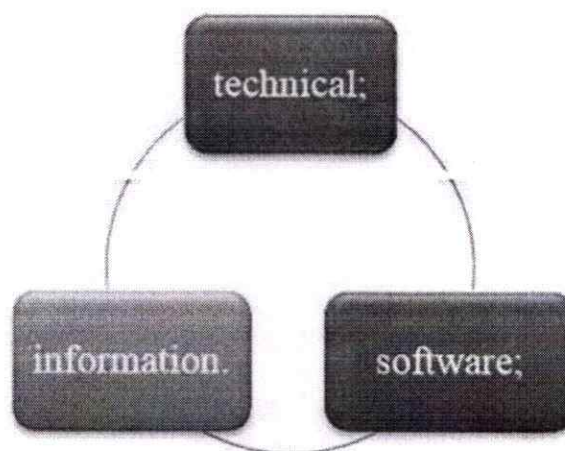
An effective defense against port control attacks The expected result is provided by the successful use of firewall show innovation. By implementing a special standard on the firewall to respond to requests to actively examine all ports concurrently, an attack may be prevented.

Introduction

The page provides a general overview of the organization, information on the current work of the global organization, and a succinct description of the many attacks against the organization. Also, it discusses problems that could arise as a result of various attacks on the organization and how to solve them. The paper also illustrates effective methods for ensuring network security.

Key words: Port scanning, IPsec, VPN, IDS, Firewall technology, protocol, Eavesdropping, Transmitting information, Denial of service.

The Internet is a complex system for self-improvement and self-management that consists of three essential components:



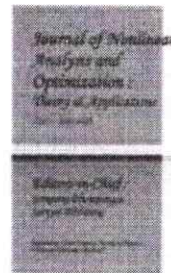
The maintenance of the Internet consists of various types of computers, communication channels (telephone, satellite, fiber-optic and other types of network channels) and a set of network hardware. Internet network software (software) programs that allow different computers and network devices connected to the network to work on a single standard (in a single language).

Internet information support consists of a set of information available on the Internet in the form of various electronic documents, graphics, audio recordings, video images, websites, etc. Naturally, as the global network spreads around the world, its security problems and the need to find effective ways to protect the network against attacks. The use of computer and information technologies, telecommunications, data transmission networks, Internet services, which are included in the priorities of our country's policy, is developing and modernizing.

The widespread introduction of modern information technologies in all spheres of our society in our

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EVALUATING THE ARCHITECTURE AND APPLICATION OF A MULTIBIT DIGITAL COMPARATOR USING CMOS SEMICONDUCTOR TECHNOLOGY

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ABSTRACT

This paper presents the creation and analysis of various comparators like EXOR/EXNOR. The comparator's structure can be divided into two techniques or modules. The Comparison Evaluation Module (CEM) is the first technique/module, while the Final Module is the second technique/module (FM). The parallel prefix tree structure used by the Comparison Evaluation Module (CEM) is designed to execute a bitwise comparison of two N-bit operands, A and B. Based on the output of the Comparison Evaluation Module, the Ultimate Module (FM) is meant to provide the final outcome (CEM). To obtain the results of multiple comparators utilising the 45 nm complementary metal oxide semiconductor (CMOS) technology, simulation results are evaluated using the LTspice software. The performance of the multiple comparators like EXOR/EXNOR is analyzed by calculating the total delay, number of transistors in the comparator, power dissipation and current value.

Keywords: Comparators, AND Gates, NAND Gates, NOR Gates, EXOR Gates, EXNOR Gates.

1. Introduction

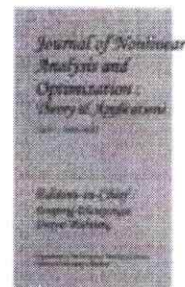
The key design component for applications in which the comparison of the outputs of a comparison evaluation module yields the final results is a digital comparator.

Scientific applications include digital image processing, pattern recognition/matching, data compression, digital neural network and test circuit applications, among many more. The memory addressing logic, queue buffers, and test circuits in computer architecture are all developed using the digital comparator design as a major component. The more the comparator's logic is used in various computation-based designs, the more area, power, and speed may be optimized. Some comparators are designed using dynamic logic to achieve low power consumption, but the low speed and low noise margin make the design difficult. The digital comparator logic structure is designed using various logic gates. A logic gate is a device that acts as building block for digital circuits. There are seven basic logic gates such as, AND gate, OR gate, NAND gate, NOR gate, EXOR gate, EXNOR gate and NOT gate. The digital comparator structure uses the NAND, NOR, AND, EXOR and EXNOR logic gates. To perform digital comparator the logic gates EXOR and EXNOR plays an important role. There are many applications of EXOR gate such as it is used in Arithmetic operations, Parity Checker, Controlled Inverter, Binary to grey conversion, Combinational logic circuits minimisation and digital comparator. The performance of digital comparators is analyzed by using different EXOR and EXNOR logic gates in digital comparator. Based on the performance the area efficient, power efficient and delay efficient digital comparator is identified. The different EXOR and EXNOR based circuits used in the digital comparator consists of pass transistor logic and CMOS logic to get the better results. The improvement of the scalability and reduction of the delay has been achieved by using the prefix tree structure-based comparator that is composed by using 2-bit comparators in each level. For the wide input operands, the comparator

structures are prohibitive due to large delay and power consumption arising from comparison levels. To improve the limiting factors of parallel prefix tree structure such as area and power can be achieved by using two input multiplexers at each level and it generates propagate logic at the first level. Most of the comparators use the pipelining and power down approaches for improvement of speed and power consumption reduction. For improving the operating speed an alternate structure that uses

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THE EVALUATION OF THE FLAT SURFACE AND HEAT TRANSMISSION OF A SOLAR COLLECTOR WITH A PARABOLIC SHAPE

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ABSTRACT

An energy balance between the solar energy received by the collector and the thermal energy released or lost from the collector may be thought of as a solar thermal energy collector. The collector receiver heat loss must match the solar energy collected if no other method of thermal energy removal is offered. This study uses CATIA design software to simulate flat plate and parabolic trough solar collectors, as well as thermal and CFD analyses using various fluids (air, water). Thermal study was conducted on a solar collector made of a variety of materials (aluminum & copper). These numbers are from a CFD study. Furthermore, CFD analysis to determine the heat transfer coefficient, heat transfer rate, mass flow rate, pressure drop and thermal analysis to determine the temperature distribution, heat flux with different materials.

INTRODUCTION

Via the absorption of sunlight, a solar thermal collector gathers heat. Often, the word "solar collector" refers to a device that uses solar energy to heat water, but it may also apply to huge power generation facilities like solar parabolic troughs and solar towers, as well as non-water heating equipment like solar air heaters.

There are two types of solar thermal collectors: non-concentrating and concentrating. The aperture area, or the region that receives solar radiation, is generally equal to the absorber area in non-concentrating collectors (i.e., the area absorbing the radiation). Apart for the collection itself, this kind has no other components. Just the direct component of sunlight is harvested by concentrating collectors, which have a significantly larger aperture than their absorber area (additional mirrors focus sunlight on the absorber). Non-concentrating collectors are typically used in residential and commercial buildings for space heating while concentrating collectors in concentrated solar power plants generate electricity by heating a heat-transfer fluid to drive a turbine connected to an electrical generator.

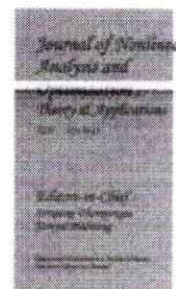
FLAT PLATE COLLECTORS

Flat-plate collectors are the most common solar thermal technology in Europe.[6] They consist of a (1) enclosure containing (2) a dark-colored absorber plate with fluid circulation passageways, and (3) a transparent cover to allow transmission of solar energy into the enclosure. The sides and back of the enclosure are typically insulated to reduce heat loss to the ambient. A heat transfer fluid is circulated through the absorber's fluid passageways to remove heat from the solar collector.

PARABOLIC TROUGH

<http://doi.org/10.36893/JNAO.2022.V13I1.924-927>

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A DISSERTATION TO IMPROVE CLOUD ENVIRONMENT SAFETY BY UTILIZING KEY SHARING AND TWO-FACTOR AUTHENTICATION MECHANISMS

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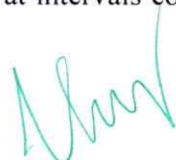
ABSTRACT

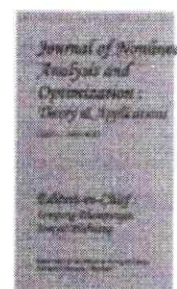
In this study, two-factor authentication is suggested for cloud storage of data with revocability risk. With our approach, the sender uses a cloud server to transmit an encrypted message to the recipient. The sender should just recognize the recipient's identity and not any further information, such as a public key or certificate. The receiver must be forced to have a combination of items in order to rewrite a cypher text. The first is the receiver's secret key, which is stored throughout the system, and the second is some additional, unique hardware that is attached to the computer. In contrast to not having these a combination of characteristics, cypher text cannot be deciphered nonetheless, if the physical component, such as a USB stick or pen drive, is lost or taken, then cipher text can ne'er be deciphered and this hardware device is off to rewrite any cipher text. Our system is secure additionally as good. We have got abent to face live ready to use a innovative hardware device to rewrite the cipher text onwith the key.

INTRODUCTION

Cloud computing is the ability to use the internet to access a collection of computer resources that are carefully controlled and managed by a certain sure party. It is a delivery method for computer resources that is backed by established technologies like server virtualization. In order for users to access infrastructures, computing power, applications, and services on demand that are independent of locations, the "cloud" comprises of hardware, storage, networks, interfaces, and services. Information is sent, stored, and processed via the infrastructure of "providers" using cloud computing, which is not covered by the contained management policy. In several industries, cloud computing has received a lot of attention and support. Several services, like resource trading, application hosting, and maintenance outsourcing, are on demand inside the cloud computing environment among the IT field. .e.g. Amazon's EC2, Amazon's S3, Google App Engine and Microsoft's Azure etc; Cloud computing can supply versatile computing capabilities, trim costs and capital expenditures and charge in step with usage. the thought Cloud Computing is coupled closely with those of information as a Service (IaaS), Platform as a Service (PaaS), package as a Service (SaaS). Here comes the first advantage of the Cloud Computing i.e. it reduces the price of hardware that will are used at user finish. Asthere is not any got to store knowledge at user's finish as a results of it's already at another location. thus instead of shoppingfor the infrastructure required to run the processes and Save bulk of data that. You're merely dealing the assets in step along with your desires. The similar got wind of is for all cloud networks. It uses remote services through a network victimization varied resources. it's primarily meant to gift most with the minimum resources i.e. the user hasthe minimum hardware demand but can use the utmost capability of computing. this might be potential solely through this technology that wishes and utilizes its resources. In cloud computing, clients store their insight documents in cloud workers. Accordingly, it's urgent to prevent unapproved admittance to those assets and see secure asset sharing. In ancient access management methods, we've got a bent to tend to tend to generally assume informationhouse owners therefore the storage serverare at intervals constant

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AN INNOVATIVE APPROACH FOR CREATING A HIGH SPEED AND MEMORY EFFECTIVE MKS MULTIPLIER

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ABSTRACT

This study develops the design and implementation of an MKS multiplier with great speed and memory efficiency. In several of these applications, including digital signal processing, multipliers serve as essential arithmetic circuits (DSP). The carry propagation of this multiplier design employing a modified kosgge stone is constrained. To propagate and create signals, partial products are employed. Sequential logic uses pipeline registers to accelerate performance. As a result, this project effectively shortens the wait time and quickens the pace.

Key Words: Modified Brent Kung Adder, VLSI, Digital signal processing (DSP), Partial Products.

INTRODUCTION

Essentially, finite fields are most frequently utilized in communication systems like error-correcting codes and encryption. The field elements are used for arithmetic operations. Normal basis and polynomial basis are the two basic types typically utilized to design a system. The hardware is implemented on a regular basis, and low cost squaring procedures are carried out. The programmed is implemented using polynomial basis, and in a similar manner, this also executes the low cost squaring operations [1]. In the majority of modern applications, such as image processing and identification, accuracy may be compromised to a certain amount. The fundamental building component of these applications, which entail a lot of mathematical computation, is the multiplier. This leads to a win-win balancing between the energy consumed by the circuit and the required accuracy directly proportional to the multiplication accuracy of those systems. If a system requires high accuracy then it consumes more energy and vice versa. Also, there could be section or module of those systems which needs lesser accuracy than other parts of the system. If the accuracy is kept constant across all such modules it greatly increases the amount of energy consumed by the overall system. However, if the accuracy of the multiplier is characterized to change as per the need of that particular module or section of the entire system, this would have a great impact in reducing the amount of energy consumed by the system [2]. This method of configuring and adjusting the accuracy of a multiplier based on the requirement of the system or application is achieved using different adder sub module of the multiplier module to characterize the accuracy based on the approximation technique. There should be reconfigurable multipliers in various program stages or applications [3]. So, in this paper we designed a multiplier which has an accuracy decided on the go based on the requirement of the application. Montgomery's multiplier is classified into three types, they are bit-serial, bit-parallel, and digit serial architectures. Bit-parallel shape is rapid; however it's far steeply-priced in phrases of vicinity. Bit-serial structure is region efficient, but it's far too sluggish for plenty packages. The digit-serial structure is flexible which may change the space and velocity, consequently, it achieves a moderate pace, reasonable price of implementation and hence it is most appropriate for practical use. Montgomery presented a technique for figuring modular multiplication productively. He introduced to

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62-674

AN ASSESSMENT ON THE EFFECTIVENESS AND PRECISION OF MANY MACHINE LEARNING TECHNIQUES FOR THE NAIVE BAYES ALGORITHM-BASED PICTURE CLASSIFICATION

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ABSTRACT

The rapid evolution of computer applications from straightforward data processing to machine learning is driven by the accessibility and availability of vast amounts of data gathered from sensors and the internet. This study demonstrates that machines may learn about themselves and develop after receiving the proper instruction. For manual categorization of pictures to be effective, image analysis and the use of various approaches are more difficult tasks. Because of this complexity, we now need to automate in order to get high accuracy. The suggested research seeks to conduct a comparative analysis of the effectiveness and precision of several machine learning algorithms for image categorization. Logistic regression model, Naive Bayes classifier model, Support Vector model, and Random Forest classifier algorithms used to test with UC Merced dataset, initiates with preprocessing and training followed by testing of data set. From this point investigation prompts towards best pick algorithm by observing the calculated accuracies among tested algorithms.

Keywords—Image Processing; Machine Learning, Logistic regression model; Naïve Bayes classifier model; Support Vector model; Random Forest classifier model

INTRODUCTION

Many pictures are constantly being produced, necessitating categorization in order to organize and analyze them more quickly. Despite the difficulty of image analysis and classification, it is crucial to demonstrate resolutions in many applications that rely on pictures. Because manual categorization takes too long and requires too much precision, it fails. Researchers concluded that the image's complexity Analysis of a picture becomes more complex when more things are present. With the help of highly accurate results, a variety of classifiers are being used to automate processes that minimize the amount of human effort.

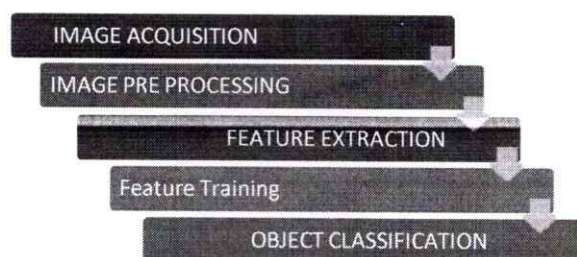
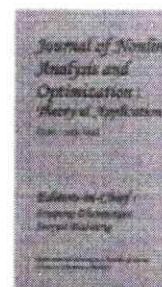


Fig 1.1: Image Classification Flow.

The Machine Learning research came forward to adopt the capabilities of human to computers to learn by sensing and understand so that to take action based on previous and current positive and negative outcomes [1]. Machine learning provides number of well formed algorithms for prediction and analysis that fall under three different categories (a) Supervised Classification that considers image as a labeled data points and a known group of pixels which requires more training Unsupervised classification

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65-67

OPTIMIZATION TECHNIQUES ASSESSED TO HIGHER-ORDER SYSTEMS TO ENHANCE SYSTEM PERFORMANCE WITH MINIMUM FAULTS.

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ABSTRACT

This project's goal is to create a BLDC motor speed controller utilizing a PI and fuzzy logic controller combo (FLC). Due to its high efficiency, small size, noiseless operation, strong dynamic response, dependability, and minimal maintenance requirements, BLDC motors are utilized in industrial automation, medical equipment, aerospace applications, household appliances, and other applications. However, there is less widespread usage of BLDC motor drives in industries as a result of drawbacks including greater cost and complicated electronic speed controllers. In order to get accurate and exact results in simulation, the speed of the BLDC motor is controlled by a hybrid PI and fuzzy logic controller in this research. This study uses MATLAB/Simulink to create fuzzy logic (FLC) controllers and explore their benefits over traditional approaches proposed techniques for optimization could also be applied for higher-order systems to provide better system performance with minimum errors. The performance indices in terms of rising time and percentage overshoot of the controller are computed and compared.

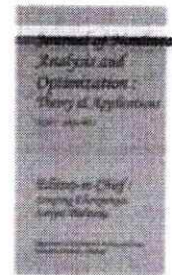
Keywords – FLC, PI, BLDC motor, MOSFET switches, PWM

INTRODUCTION

A brushless DC motor (BLDC) is a synchronous electric motor that uses an electronically controlled commutation system rather than a mechanical commutation system based on brushes. It is powered by direct current energy (DC). In such motors, the relationships between current, torque, and voltage are linear. There are two subtypes of BLDC motors that are employed: the Reluctance Motor and the Stepper Motor type, the latter of which may have additional poles on the stator. BLDC motors are thought to be more effective than brushed DC motors. At the same input power, a BLDC motor will convert more electrical power into mechanical power than a brushed motor due to the absence of brush friction. The no-load and low-load conditions have the biggest efficiency improvements region of the motor's performance curve. Under high mechanical loads, BLDC motors and high quality brushed motors are comparable in efficiency. In the applications involving precise speed control, Brushless DC motors are commonly used. A brushless DC motor has many applications in industrial automation equipment's and instrumentation due to their gaining characteristics such as ability to operate at high speed, high efficiency and high dynamic response which is useful for reliable operation of industries. In DC motor, commutation is carried out by brush and slip ring arrangement. But brushless DC motors are electronically commutated instead of using brush. Conventional brushed DC motor cannot be used for high speed applications due to their disadvantages such as periodic replacement of brushes and continuous maintenance of commutates. Thus instead of DC motors, squirrel cage induction motors were used widely in industries but induction motor also has the disadvantages of low power factor and low starting torque. Considering the disadvantages of conventional DC motor and induction motor, brushless dc motor is found to be gaining more popularity in industries. In BLDC motor due to the absence of brush, maintenance required is less

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68-70

SUBSEQUENT PLANNING AND PROFESSIONAL ADVANCEMENT: AN APPROACH TO THE EXPANSION OF PROFESSIONAL TALENTS IN ORGANIZATIONS

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ABSTRACT

Professional growth and succession planning should guarantee that employees are passionate about the company and provide them the chance to enhance their professional skills, gain work experience, and become more interested in working there. Corporate succession planning is to ensure that the organization has enough human resources to achieve its long-term objectives for a select number of positions. Being flexible in one's career is becoming more and more important. Due to organizational changes, the company's survival, the organisation and its employees, insolvency, and other factors, professionals' workspaces are under danger; as a result, they must assume responsibility for their own professional development.

Keywords: Professional development; career progression; strategic planning; human resources development

INTRODUCTION

Why should we consider professional development?

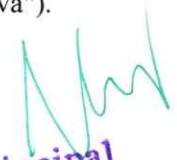
Planning might be characterised as people's particular capacity to manage the future. Career planning is crucial for finding the suitable position in the sector and for answering important life issues like "What or who do I want to be in life?" Even if we are happy in our present position, career planning is a good idea since it will make us more prepared if we ever need to resign, and we won't give in to fear or confusion because we will know better. While attempting to locate a work, it is important to consider their leisure interests. Showcase our strengths, talents, and so on. The first step to gaining more work contentment is developing a perfect professional image. Changes brought on by life's dynamism and variety resulted in a shift in power toward the individual, who now bears primary responsibility for career planning and evaluation. In the end, "the career plan is only a product of the self- assessment process, the setting of professional objectives and the conditions for their realization by the person" ("Kachanakova, 2003").

It is in the employer's best interest to help their workers grow and develop as individuals (company). Several strategic goals may be achieved via career planning on the part of the firm. "Individual career development programmes and general arrangements for management development, consulting, and mentoring of career" are created using all of the information gathered from the company's requirements, work performance and potential evaluation, and succession plans for managerial positions". ("Armstrong, 2007"). "Career advancement is simply the result of interactions between individuals who choose what best fits their ideas and the company that offers options that meet their goals. Career development, career planning, and career management all have a dual purpose in mind" ("Chvostaova, 2015").

It is important to note that both the individual and the organization define what constitutes a successful career. Professional planning is defining and implementing the activities and processes needed to attain a person's career objectives. Additionally, "career management involves selecting, evaluating, and developing people who will create a prospective qualified talent to satisfy the company's demands and guarantee its competitiveness. This process is a part of career planning". ("Bielikova").

What is a career, and how does one plan one?

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71-73

A UNIQUE WAY OF IMAGE PROCESSING TO CLEAN THE ORIGINAL IMAGE BY USING CNN FOR BACKGROUND SUBTRACTION

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ABSTRACT

The most widely used real-time application in the modern world is video surveillance. As machine learning has advanced, several methods for multi-object detection have been created. Several firms need real-time monitoring systems for security reasons; hence this area of study is crucial. This study suggests a fresh approach to identifying moving things. A transportable system is necessary for a number of applications, including operational robots and military surveillance systems. These real-time monitoring technologies are more advantageous for a range of individual needs, security issues, and information gathering. Many techniques are employed for this job, and substantial research is done to automate and secure this system. In the proposed method the clean original image and the CNN is used to subtract the background.

Keywords— multi-object detection, CNN, video surveillance

INTRODUCTION

A video is overlay in time with several pictures in the field of image analysis, which is closely related to video analytics. In addition to tasks specifically related to video, including object tracking (identifying objects over numerous frames), prediction of trajectory (estimating object trajectories), and activity detection, similar problems like video classification and object identification in video were also tackled (classifying actions in a video sequence). For these tasks, CNS produced excellent results, such as in the photo analysis. [1, 2].

The Gaussian Mixture Modeling approach (GMM) is utilized for motion modeling and its modifications are applied to the calculation of motion descriptors throughout the tracking process. Video streams are initially transformed to several frames and optical flow calculations are done on the frame extracted.

Various essential applications of huge significance in the real-time environment that give outstanding security employing video data in locations like theatres and shopping malls. Patients' quality of life is also improved as a result of medical care. For added security, video abstraction is available. During video analysis, traffic management professionals typically examine traffic flow and use video editing to create futuristic video effects. Various studies are used in video surveillance to detect objects in real time. Navigation, object detection and tracking, and finally object recognition and surveillance are all steps that must be included in most studies. Object detection is accomplished by segmenting images into foreground and background objects. Object tracking establishes the correlation between the objects in successive frames of a video stream.

LITERATURE SURVEY

Detecting all objects of a specific type in an image is the aim of object detection, as the name suggests. Alternatively, there may be several classes where each object needs to be accurately classified. An image is fed into an object detector, and the result is a list of bounding boxes, complete with labels if there are multiple classes. The pixel coordinates of the top-left and bottom-right corners of the bounding box, as well as the width and height of the box, are commonly used to depict a bounding box.

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INTERPRETING CONVENTIONAL METHODS WITHOUT ACCOUNTING FOR THE AMOUNT OF TRAFFIC ON A PARTICULAR ROAD, WHICH CAUSES SIGNIFICANT DELAYS IN RED LIGHTS

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ABSTRACT

This project tries to reduce traffic congestion brought on by antiquated, inefficient traffic management technologies that operate on a countdown. Traditional methods assign timings regardless of the actual traffic density on a given road, leading to significant red-light delays. The solution we provide guarantees that traffic lights react to actual traffic levels, allowing for efficient time and resource management. This is done by first calculating the traffic density, which is done by combining ultrasonic sensors and image processing methods. A Raspberry Pi processes this data, and the Raspberry Pi in turn manages the traffic light indicators. Moreover, the information gathered is uploaded to the cloud, where it may be utilized to monitor traffic flow at periodic intervals. In case of sensor system failure, the values stored in the cloud will also be useful in predicting the density of traffic based on long term periodic analysis

Due to the current significant increase in population and, consequently, to traffic congestion in most of the world's metropolitan cities, the design of an intelligent traffic management system (ITMS) to detect the road in the shortest possible time. Travel is critical for emergency, health, and courier services. The objective of this thesis study was to develop a theoretical traffic detection system capable of estimating the travel time associated with each segment of the street based on the traffic data updated every 20 seconds, which successively finds the way with the Shortest travel time on the net by using a dynamic programming technique. In addition, in this study we modeled the travel time associated with each street segment based on historical and real-time data considering that the speed of traffic on each road segment is constant by parts.

These traditional systems allot timings irrespective of the actual density in traffic on a specific road thereby causing large red light delays. The system we propose ensures traffic lights respond to real time values of traffic, thereby allowing proper management of time and resources. In order to do this, we first calculate the density of traffic which is determined using a combination of ultrasonic sensors and image processing techniques. This information is processed by a Raspberry Pi, which in turn controls the traffic light indicators. In addition to that, the data that is collected is sent to the cloud, and can be used to monitor traffic flow at periodic intervals. In case of sensor system failure, the values stored in the cloud will also be useful in predicting the density of traffic based on long term periodic analysis

INTRODUCTION

The main means of transportation in India is through road, which is crucial for the movement of persons and commodities as well as for connecting the hubs of production, consumption, and distribution. The road network transports more than 56% of the nation's freight traffic, according to statistics from 2007–2008 [1].

The demand for road transportation and individualized modes of transportation (cars and two-wheelers), in particular, has increased due to persistent economic expansion, rising disposable income, and expanding urbanization [2]. With a growth rate of 9.9%, the total number of registered motor vehicles climbed from 55 million in 2001 to 141.8 million in 2011. Yet, the country's road system has

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ANALYSIS ON POZZOLANIC MATERIAL'S FIRE RESILIENT CONCRETE, HIGH COMPRESSIVE STRENGTH, AND LOW MAINTENANCE AND ITS ADVANTAGES

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ABSTRACT

From ancient times, concrete has been employed extensively in construction projects. Without a doubt, concrete is a crucial component of all construction structures. It is the most ecologically friendly building material available, providing both stability and design freedom for all building constructions. The use of concrete in building is appealing because concrete has several benefits, including built-in fire protection, great compressive strength, and minimal maintenance requirements. As concrete is now used practically everywhere due to the rapid expansion of infrastructure, one of the primary materials needed to make it is cement. When cement is used more often, the heat of hydration increases, which will result to the formation of cracks in concrete accompanied by shrinkage effect. In order to control this, palm oil fuel ash, an agro waste which contains some amount of silica act as a pozzolanic material is being used as cement replacement and its strength is compared with conventional concrete of grade M25. In this study cement is being replaced with palm oil fuel ash by 5%, 7.5%, 10%, 12.5%, 15%, 17.5% and the strength tests like compressive strength test, tensile strength test, flexural strength test, Sorptivity and RCPT are performed and are compared with the results of conventional concrete of grade.

Keywords: Palm Oil Fuel Ash (POFA), Ordinary Portland Cement (OPC).

INTRODUCTION

From ancient times, concrete has been employed extensively in construction projects. Without a doubt, concrete is a crucial component of all construction structures. Environmentally friendly building materials are essential because they provide all building structures with stability and design flexibility. Construction materials made of concrete are appealing. As concrete has several benefits, including excellent fire resistance built right in, both low maintenance and compressive strength. Yet, concrete also has a drawback in that it is a naturally fragile substance. Contrarily, one of the main issues with concrete is that its tensile strength is far lower than its compressive strength. Because of that, many new technologies of concrete and some modern concrete specifications approach were introduced. There have been many experimental works conducted by introducing a new material or recycled material as a replacement to aggregate or cement in concrete.

In India, the manufacturing of Portland cement was commenced around the year 1912. The beginning was not very promising and growth of cement industry was very slow. At the time of independence in 1947, the installed capacity of cement plants in India was approximately 4.5 million tons and actual production around 3.2 million tons per year. The large construction activity undertaken during the various 5 years plans mainly during the necessitated the growth of cement industry. However, the five-year plans envisaged for multipurpose projects and also for rapid industrial growth remained stunted due to the complete control exercised by the Government over the cement industry. As the infrastructure sector was developing during 1980s prompted the various industrial organizations were interested for setup new cement plants in the country. The full liberalization on cement industry in 1988 further provided rapid expansion for the growth.

The installed capacity in the 1982 was nearly 30 million tons, which has now, increase to nearly 262.6 million tons during a period of 30 years. Today India is second largest country after China in production

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A UNIQUE METHOD FOR THE DESIGN, OPTIMIZATION, AND CFD ANALYSIS OF RADIAL INFLOW MICROGAS TURBINE BLADES

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ABSTRACT

The gas turbine generates its power by passing through a few rings with both fixed and movable sharp edges, using the gas that is used as fuel and the air that is heated and heavy. The blower is linked to the turbine shaft because the turbine drives it. If a turbine were to release functioning fluid under pressure, and assuming that there were no setbacks in either one or the other part, the impact made by the turbine could then be increased by increasing the volume of working fluid at constant weight, which would obviously mean increasing the load at a dependable volume.

In this undertaking, turbine sharp edge is organized and shown in 3D showing programming CREO. The arrangement is changed by changing the foundation of the sharp edge to grow the cooling viability. Since the arrangement of super mechanical assembly is astounding, and efficiency is honestly related to material execution, material decision is of prime importance. The present moment, materials are considered for turbine edge titanium composite and nickel combination. Progression is done by changing the materials Titanium mix and Super Compound by performing coupled field assessment(thermal+structural) on the turbine edge for both the designs.

INTRODUCTION

Miniature Gas Turbine (MGT) motors have recently made significant breakthroughs in commercial aviation and the leisure industry. They are used in modern aeroplanes as assistant power units (APUs) and on autonomous elevated vehicles (UAVs). MGTs are also used in applications for small power plants and crossover electric cars. Due to their excellent ability to weight ratio, multi-fuel capability, and simplicity of design, they are suitable for such applications. These motors' interconnected, nonlinear components exhibit nonlinear characteristics. The showing of the specific motor component enhances the broader motor presentation. This motivates experts to design and plan incredibly effective MGT components. As a result, thorough research has focused on enhancing the presentation of the blower and turbine phases of the Baird Miniature Turbine (BMT 120 KS) motor at Stellenbosch College's Division of Mechanical and Mechatronic Designing. This venture explores part matching of the BMT motor and the adjusted blower and turbine stages. Scientific and mathematical investigations are utilized to survey the BMT thermodynamic cycle through a point by point evaluation of the motor's past hypothetical and exploratory assessments. This fills in as a reason for further developed part matching of the motor.

GAS TURBINE THERMODYNAMIC CYCLE

The standard Brayton outside cycle is the thermodynamic portrayal of a gas turbine motor. The cycle is depicted with the T-s and p-v graphs portrayed in Figure 2.2. Preferably, the cycle has isentropic air pressure, steady strain heat expansion, isentropic gas extension and consistent tension intensity dismissal. By and by, the pressure, heat expansion, development and intensity dismissal processes are not isentropic. The cycle can either be an open or shut cycle. In the shut cycle, the motor working liquid is kept in the framework in that the motor fumes gas temperature is cooled and reused in the cycle. For the open cycle, the motor working liquid leaves the cycle after extension in the turbine. The functioning liquid is thought



INTEGRATING N-BUTANOL AND GASOLINE FEATURES OF PERFORMANCE TO REDUCE CO AND HC EMISSIONS IN SI ENGINES

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ABSTRACT

Due to a lack of fossil fuels and worries about global warming, the use of oxygen-fuelled fuel in spark ignition engines (SIEs) has recently drawn more attention, especially when it comes from renewable sources. The primary fuel source at the moment is ethanol, which will reduce CO and HC emissions in the future but has a number of drawbacks, including low temperature values and high hygroscopic proportions, which lead to high fuel consumption and corrosion issues, respectively. In contrast to other methods, the n-butanol used in this study had better ethanol conversion characteristics thanks to its higher temperature and reduced hygroscopic tendency. On the other hand, ethanol replaces commercial chemicals like n-butanol in the experimental matrix used for this investigation and on the other hand, either ethanol or gasoline substituting n butanol for E85 mixture (85% ethanol-15% fuel by volume). The results show that substituting n-butanol with ethanol presents a series of benefits such as higher temperature and greater exchange with fuel compared to ethanol, which makes n-butanol promising SIE fuel for commercial mixtures. However, the use of n-butanol in the E85 combined includes another gasoline or ethanol can cause cold problems due to low pressure of n-butanol vapour. Because for this reason, it is proposed to combine n-butanol in both gasoline and ethanol to N-butanol can be used without any side effects.

INTRODUCTION

The utilization of bio fuels in internal combustion engines has increased as a result of the slow reduction in mineral oil and worries about global warming (ICEs) Bio-alcohol is one of the many biofuels being researched as an alternative engine oil since it can enhance engine efficiency while lowering emissions. Due to their biological processes, bio-alcohols like ethanol and butanol can reduce the rate of life cycle greenhouse emissions. In reality, ethanol is frequently utilized in fuel-returning spark ignition engines (SIEs). These two alcoholic drinks are mentioned. It has also been used to the idea of using combustion engines (CIEs) in place of diesel. The primary bio-alcohol employed in this paper's discussion of alcohol usage in SIEs is ethanol, which is commercially available in many nations. The main advantage of this fuel is the reduction of CO and the release of HC when used in SIEs as a substitute for fuel. In particular, ethanol has always been present proven to reduce the excess emissions of CO and HC during cold temperatures in relation to temperature engine conditions. Of the SIEs injected directly, they have been gaining prominence over the past few for years, ethanol has been shown to reduce NOx emissions slightly and PM emissions significantly. The low temperature of ethanol is much lower than that of petroleum, which creates higher fuel use. However, the efficiency of thermal brakes has been shown in small increases. Ethanol can also indicate rust problems in the injection system due to its hydroscopic tendency. Ethanol and it produces less lubrication, which can cause problems for engines injected directly into the fuel. Finally, according to Rodríguez-Antón et al. ethanol supplementation increases the vapor pressure of only mix up to 35% by volume. High ethanol content can reduce lead-induced vapor pressure starting problems. N-butanol is considered to be the most promising bio-alcohol because of its many more benefits short-chain alcohol (methanol and ethanol in particular), including high-energy (low-energy) high temperature and hardness), low viscosity, and high softness. Additionally, n-butanol is much less



A EVALUATION OF MACHINE LEARNING FOR PREDICTING THE RISK FOR ACQUIRING A CHRONIC DISEASE SYSTEM

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ABSTRACT

In most cases, it is hard to foresee chronic diseases before they impact a person. As a consequence, we employ Machine Learning to create a model that allows us to calculate the likelihood that an individual would have a condition like diabetes, chronic kidney cancer, or a heart attack based on information about their health like their haemoglobin and glucose levels. You or a loved one may have thought on multiple occasions that you or they need emergency medical help, but for a number of reasons, they are unable to provide it.

A project called the Chronic Disease Prediction application aims to offer online counseling and end-user assistance. In this article, we propose a web tool that enables users to predict their risk of developing a disease, whether it be typical or extraordinary and to obtain fast details of an expert for help. The programmed is provided with information about chronic diseases such as heart disease. The user can input health parameters for prediction in this programmed. At this point, certain subtle elements are formed for the client to look for various ailments that may be related to him. Here we use some clever information mining techniques to find the first precise disease that can be related to the patient's interests. Depending on the result, they can similarly contact a specialist for further treatment. The frame allows the client to see the doctor's points of interest as well.

INTRODUCTION

The objectives of "Recognize chronic diseases through machine learning" are:

- Chronic diseases generally cannot be predicted before they affect humans. So we are using machine learning to create a model that will help us predict the probability that will contract a disease such as a heart attack.
- To reduce the risk of sudden health attacks from a chronic disease.
- Sometimes you or someone needs immediate medical attention, but not the right guidance to counseling. Therefore, it also suggests the specialist along with the details of the hospital.

Developer Responsibilities

- Install the software on the client hardware and configure the software as required by the client.
- Undertake any user training that may be necessary in the use of this system.
- System maintenance over a period of time.

Existing System

Although the current system is manual and file-based. We understand that the system that we are going to build must provide solutions to the loss of time and space that affects the efficiency of day-to-day activities in the hospital. We are all patients at some point and we all want good health care. Assume that doctors are medical experts and that there is good research behind every decision. But it predicts diseases before the person is affected by the disease. The physician's need for in-depth research that goes beyond medical practice.

The current hands system has a lot of work on paper and does not take care of the prediction of the data.



A COMPARATIVE STUDY OF CMOS LOGIC CIRCUIT FOR LOW POWER USING STACK ONOFIC TECHNIQUES

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ABSTRACT

Power dissipation is now one of the issues with CMOS VLSI circuit design. In battery-operated applications, excessive power dissipation affects factors like dependability, cooling costs, etc. and reduces battery life. High power dissipation is not recommended since it reduces battery life. One of the most crucial difficulties in CMOS VLSI design nowadays is leakage power dissipation. Leakage-free CMOS circuit design is a difficult challenge. There are some efficient methods for lowering CMOS VLSI circuits' power dissipation. In this work, we have proposed a circuit called stack ONOFIC technique to mitigate the leakage power in CMOS logic circuits. We have used various CMOS logic circuits like NAND, inverter, NOR to show the effect of the proposed technique in these circuits. In this paper, we have compared the various reduction techniques with our proposed technique to show the comparative reduction in power dissipation and delay. We have used traditional (conventional), LECTOR, LCNT reduction techniques with the proposed technique and calculated the total power dissipation and delay of various CMOS logic circuits. All mentioned techniques have simulated in Mentor graphics tools with 130nm and 22nm technologies.

Keywords: CMOS, LECTOR, LCNT, stack ONOFIC

INTRODUCTION

Because of the rising need for portable digital systems, there has been a recent surge in innovation in the field of low power design. As with tablets, laptops, mobile phones, and other current portable devices, these gadgets must have high performance and minimal power dissipation. High power dissipation is a significant issue for the effective operation of digital VLSI systems such as a microprocessor, digital signal processor, and other applications. Battery life is shortened by high power dissipation, which also increases cooling and packaging costs [1]. Many factors, including an increase in transistor count, an increase in operating frequency, and technological scaling, all have an impact on leakage power dissipation [2]. The power dissipation is a very important design measurement standard due to device miniaturization and fast development in the wireless communication. The longer the battery durability, the better and good is the device [3]. With increasing the numbers (twice) of chip transistors in every two years, reducing the power consumption recently has become a challenging task in the field of research area [4, 5]. The trend of diminishing the device dimensions reduces the chip area needed for the logic circuit usage in DSM (deep submicron) region [6, 7]. In designing a VLSI circuit, area, power dissipation and propagation delay are the major design parameters. In recent days, complementary metal oxide semiconductor (CMOS) device size has been scale down drastically to achieve the high-performance metrics of VLSI chips. Leakage power is the most important factor in processor hardware and software manufacturing [8]. With the vital part of leakage, the sub-threshold current is increasing exponentially with the reduction in device dimensions [9]. CMOS transistor's leakage power depends on gate length and oxide thickness [10]. In Deep Sub-Micron (DSM) technology, on a single chip, the number of gates is to be assembled, so as to end in short geometries [11]. Complex circuit methods have to be immersed to get power savings as technology scaling itself doesn't give sufficient savings ITRS (international technology roadmap for semiconductor), total power consumption is mainly dominated by the leakage power. In this paper, we analyze first the leakage minimization techniques, which have been proposed earlier for CMOS VLSI



AN EFFICIENT AND EFFECTIVE ACCESS CONTROL METHOD FOR MOBILE CLOUD COMPUTING USING MHABE FINE GRAINED GRADING

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ABSTRACT

A cloud computing system uses the Internet to provide shared resources to devices based on their needs. It's a new but energizing perspective to integrate mobile devices with distributed computing, and this combination operates in a multi-client, multi-level cloud environment. With the flexible distributed computing architecture, security challenges like information categorization and client authorization may arise with coordination into distributed computing. The challenging problem of safe data participation in distributed computing has been addressed by the encryption breakthrough known as ciphertext-strategy characteristic based encryption (CP-ABE). The majority of shared information papers, particularly those related to the military and the medical field, have the characteristic of a staggered progressive system. Despite this, the shared documents' development structure has not changed Investigated in CP-ABE. In this paper, an effective record pecking order property based encryption conspire is proposed in distributed computing. The layered admittance structures are incorporated into a solitary access structure, and afterward, the various leveled records are scrambled with the coordinated admittance structure. The ciphertext parts identified with properties could be shared by the records. In this way, both ciphertext stockpiling and time cost of encryption are spared. Besides, the proposed plot is end up being secure under the standard presumption. Exploratory reenactment shows that the proposed conspire is profoundly proficient as far as encryption and unscrambling. With the quantity of the documents expanding, the upsides of our plan become increasingly obvious.

Keywords: Cloud computing, datasharing, file hierarchy, ciphertext- policy, attribute-based encryption 1.

INTRODUCTION

One of the most widely used emerging strategies, distributed computing uses a variety of methods to acquire and manage IT assets over a large range [19, 22]. As a result, distributed computing offers a variety of services, such as infrastructure as a service (IaaS), sometimes known as equipment as a service (HaaS), platform as a service (PaaS), and software as a service (SaaS) (SaaS). The asset participating in a pure fit is advanced by distributed computing arrangement, which also provides a model that considerably simplifies the asset's basis. The substantial latitude of distributed computing takes into account the affordability and practicality of accessing the assets over the Internet. Because to the ordered nature of the cloud, using its resources offers the client more practicality. Cloud causes us to utilize the current advancements, for example, virtualization, administration direction and matrix figuring in huge scope dispersed climate [4, 5]. To guarantee the cloud information uprightness and accessibility, effective methodologies that empower capacity rightness confirmation in the interest of cloud clients must be planned. Henceforth, cloud activities ought to likewise importantly uphold the dynamic highlights that make the framework plan much additionally testing. As Cloud registering is another new innovation de-show disdaintoward having numerous helpful elements, it faces numerous dangers differently. It has spread quick because of its exibility over straightforward entry as it disposes of the requirement for extra hard drives and memory space allotment.



GENERATING AN HDL CODE THAT IS SYNTHESIZED TO COMPLETE THE ROUNDING-BASED MULTIPLIER FOR SIGNED AND UNSIGNED DATA OPERATIONS

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ABSTRACT

The great majority of contemporary computer systems use the IEEE Standard for Floating-Point Arithmetic (IEEE 754), which has been the industry standard for floating-point arithmetic for many years. Recently, posit (Type III num), a new number representation format, has been suggested as an alternative to the widely used IEEE 754 arithmetic. John L. Gustafson says this new format may deliver superior accuracy utilizing equal or less bits and simpler hardware than current standard. This undergraduate thesis analyses and contrasts the innovative posit number format's qualities and properties with the accepted practice for floating-point numbers. (floats). Based on the literature assertions, we focus on determining whether posits would be a good -drop-in replacement for floats. First we propose a low-level design for posit arithmetic multiplier using the Xilinx tool to generate synthesizable HDL code which helps in the case of only unsigned numbers of multiplication. Where as in the practical, we need to focus on both signed and un-signed numbers. So here we proposed a new technique called RoBA (Rounding Based Approximate) multiplier which helps in reducing the area, delay and power by 10%, 40% and 54% respectively. To conclude this work, we propose a low-level design for posit arithmetic (signed and unsigned) RoBA multiplier using the Xilinx tool to generate synthesizable HDL code. Designed using Xilinx ISE 14.7 software.

Keywords: Computer arithmetic, Floating point, Posit number system, Numerical error, RoBA Multiplier.

Introduction

In addition to the image and video processing applications, there are other areas where the exactness of the arithmetic operations is not critical to the functionality of the system. Being able to use the approximate computing provides the designer with the ability of making tradeoffs between the accuracy and the speed as well as power/energy consumption. Applying the approximation to the arithmetic units can be performed at different design abstraction levels including circuit, logic, and architecture levels, as well as algorithm and software layers. The approximation may be performed using different techniques such as allowing some timing violations (e.g., voltage over scaling or over clocking) and function approximation methods (e.g., modifying the Boolean function of a circuit) or a combination of them. In the category of function approximation methods, a number of approximating arithmetic building blocks, such as adders and multipliers, at different design levels have been suggested. In this paper, we focus on proposing a high-speed low power/energy yet approximate multiplier appropriate for error resilient DSP applications.

Existing Model

The IEEE-754 standard describes how to store, format and compute with real-valued numbers. The current version supports five different widths, ranging from the small 16-bit half-precision format, all the way up to a 256-bit octuple precision format. The width of the format largely depends on the application at hand; deep-learning training is performed using single-precision while image manipulation often allows for a reduction in precision. Some applications, such as GROMACS, even mix different precisions for performance reasons.



ADVANCED MODE: PV-BATTERY BASED MICROGRID CONTROL AND POWER MANAGEMENT SCHEME EMISSIONED, USING BOTH AC AND DC BUSES

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ABSTRACT

Electric power professionals have been motivated to create sustainable ways of power generation by the steadily rising demand for energy and worries about environmental damage. Distributed generation using renewable resources like solar energy is thought to offer a practical way to lessen reliance on traditional power generation while improving the quality and reliability of power systems. Due to its attributes, such as their propensity for producing clean energy from the sun and their availability, photovoltaic (PV) systems have emerged as one of the most promising renewable production technologies. In photovoltaic (PV) systems, battery storage is often used to reduce power oscillations brought on by the nature of PV panels and solar irradiation. Control schemes for PV-battery systems must be able to stabilize the bus voltages as well as to control the power flexibly. This paper proposes a comprehensive control and power management system (CAPMS) for PV-battery-based micro grid with both AC and DC buses in islanded mode. CAPMS is a centralized control system that flexibly and effectively controls power flows among the power sources and loads. CAPMS operates effectively irrespective of fluctuations in irradiance, temperature and change in loads. CAPMS ensures a reliable power supply to the system when PV power fluctuates due to unstable irradiance. CAPMS regulates DC and AC bus voltages and frequency, controlling the voltage and power of each unit flexibly, and balancing the power flows in the system automatically under different operating circumstances, regardless of fluctuations of irradiance and temperature, and change of load.

Keywords: Comprehensive control and power management system (CAPMS), Solar PV System, PV array, Control and Power Management System and Micro Grid.

INTRODUCTION

A micro grid is a collection of interconnected loads and dispersed energy sources that operates as a single, controlled entity in relation to the grid and is contained within well defined electrical limits. In order to function in both grid-connected and island mode, a micro grid may connect to and disengage from the grid. A micro grid needs a generation source in order to satisfy the needs of its consumers for power. As micro grids are a more recent idea, the electricity they get has often come from "behind the meter" fossil fuel sources, such as gas-powered generators. Nevertheless, many of the micro grids being constructed today are solar-powered due to the declining cost of solar energy as well as the environmental advantages of doing supply electricity with a combination of solar plus battery storage. A software-based system, the controller can manage energy supply in many different ways. But here's one example. An advanced controller can track real-time changes in the power prices on the central grid. (Wholesale electricity prices fluctuate constantly based on electricity supply and demand.) If energy prices are inexpensive at any point, it may choose to buy power from the central grid to serve its customers, rather than use energy from, say, its own solar panels. The micro grid solar panels could instead charge its battery systems. Later in the day, when grid power becomes expensive, the micro grid may discharge its batteries rather than use grid power. PV array is interfaced with the DC bus by a DC/DC boost converter. Battery bank uses a bidirectional DC/DC converter to



EVALUATING CONTEMPORARY PAYMENT TECHNIQUES BY OUTLINING THE UPCOMING DEVELOPMENTS THROUGH THE UTILIZATION OF ELECTRONIC PAYMENT SYSTEMS

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Abstract

Important security concerns are emerging as company shifts from in-person transactions, postal orders, and phone orders to electronic commerce over open networks like the internet. Securing payments using open networks connecting commercial servers and consumer workstations presents additional issues beyond the relatively safe electronic cash transmission across banking networks. The state of payment technology is reviewed in this article, along with some new advances.

INTRODUCTION

Internet usage has dramatically expanded in the current digital era. Every second, massive amounts of data are produced and consumed by all age counts. Several businesses are studying and making changes in response to the data they were able to gather from customer studies. The convenience of smartphones and the virtual accessibility of goods, services, and payments online have improved how consumers do their online business. To give customers a taste of the brand-new online economy and to earn their trust, the e-commerce sector first operated on a cash-on-delivery basis. The corporation began providing several channels for online payments after the clients were familiar with the business. E-Payment has given access to various financial platforms like debit card, credit card, net banking, digital wallets, etc. Cash has become a less common mode of transaction as the appearance of e-payments has allowed consumers and buyers with greater convenience, but at the same time it has raised a doubt or a threat as there has always been increasing issues regarding the fraud and privacy concern that has been the top fear in the minds of internet users.

We all have witnessed that the traditional payment modes have been replaced by various types of e-payments that are quick and efficient. In e-payment process both buyer and seller uses digital modes to send or receive money, it is an automatic process where seller and the buyer can avoid visiting their bank. It eliminates the physical cash that is risky to handle at times. Today consumers can make payment through electronic modes by using cards and other platforms that are made available through all types of smart devices. The acceptance of particular payments by sellers and businesses has an important influence on the purchases made by their clients, as the availability of the various modes help the consumer to choose that is suitable or available to them as well.

Past few years' smartphones are having a tremendous growth due to accessibility and availability of the internet. The mobile wallet providers like Paytm, PayPal, Mobikwik, etc. with the payback schemes also attracting many consumers to use e-payment modes aiding the organisations with significant growth. The digital wallets are further enabling economies to a cashless society. Electronic wallets and mobile wallets are moreover digital version of the hard cash in physical wallet with more features and functions. E-payments wallets reduce cost of cash holding and handling for the retailers. Retailers on online platform have introduced lucrative discounts and cashback offers to get payment orders for all the cashless payments. The online platform retailers have encouraged more customers to choose a payment mode other than Cash on Delivery, it also helps a business to retain their customer.

PayTM



163-05

THE ASSESSMENT OF FUZZY SUPPORT EARLY DIABETES PREDICTION USING VECTOR REGRESSION METHOD

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ABSTRACT

Diabetes is a metabolic condition brought on by elevated blood sugar levels. If detected early, the risk and severity of diabetes may be significantly reduced. Because there is a dearth of values in the diabetes datasets and a lack of labeled data, accurate early diabetes prediction is rather challenging. Many machine-learning classifiers, including neighborhoods, decision-making trees, random forests, naive bays, and a multilayer sensor, can be used to predict diabetes. Despite the moderate accuracy of the outcomes these algorithms provide, the prediction accuracy might yet be increased. Fluid support vector regression is used into the suggested diabetes prediction framework to increase prediction accuracy in comparison to the previously discussed machine learning techniques. The research' data collection is called "Database of Pima Indians with Diabetes".

Keywords: fuzzy support vector regression, diabetes prediction, machine-learning classifications, decision-making trees, random forests, naive bays and a multilayer sensor

INTRODUCTION

Blood sugar levels that are too high might lead to the illness known as diabetes. Your main source of energy is blood glucose, which is obtained from the food you eat. A pancreatic hormone called insulin aids in the process by which your cells absorb glucose from food for energy. Your body may occasionally produce too little or no use insulin as it should. If this happens, glucose will stay in your bloodstream and not enter your cells. Over time, high blood sugar levels lead to diabetes. In the United States, 30,3 million people, or 9,4 percent of the population, has diabetes as of 2015. More than one in four of them were unaware of their ailment. Over the age of 65, 1 in 4 people have diabetes. Between 90% and 95% of adult cases have Type 2 diabetes? Therefore, early diabetes detection and measures are essential to minimize future problems. The symptoms of diabetes depend on how high your blood sugar is. Some symptoms include excessive thirst, frequent mucking, extreme hunger and loss of weight.

Diabetes prediction may lead to better treatment in the earlier stages, however the diagnosis of diabetes is seen as a challenge therefore we attempt to predict diabetes based on people with good prediction and lower cost and time saving data.

We can save many lives by making this kind of forecast. The methods utilised for diabetes prediction include linear regression, logistic regression, vector support regression and also vector support.

The vector of support Regression is a prediction method utilised in the prediction of diabetes effectively, we use classifier systems, construct SVR models and enforce fluid-coded rules for accurate disease prediction and also use the diabetes dataset to train model to predict the correct outcomes utilising algorithms. Early identification of diabetes and pre-diabetes is essential so that patients may start managing their illness early and avoid or postpone severe consequences of the disease that can reduce quality of life. Early diagnosis and treatment of diabetes is an essential step towards maintaining healthy individuals with diabetes. The risk of severe consequences, such as early heart and stroke, blindness, limb amputations and renal failure may be reduced



ANN BASED UIPC POWER FLOW ANALYSIS OF HYBRID MICRO GRIDS TO STABILIZE DC CONNECTED FLUCTUATIONS

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ABSTRACT

The short-circuit current of a power system may thus need to be increased, necessitating the replacement of particular protective devices. It is possible to control the flow of power with this controller (IPC). It is now possible to construct hybrid microgrid power controllers in AC/DC microgrids using a custom Unified Interface (UIPC) controller. The UIPC handles all of the functions of both systems simultaneously when used in conjunction with an IPC or UPFC device. In this project, the energy exchange between AC-DC micro grids is controlled by fewer converters than the customary three converters in each phase of a UIPC setup. The new system incorporates "line power converters" (LPCs) and "bus power converters" (BPCs), which control the intermediate circuit voltage (BPC). Controlling the BPC DC side using an Artificial Neural Network (ANN) is used to stabilize DC connection fluctuations (ANN). ANFIS controllers are less exact than ANN controllers, which are more precise. Using computer simulations, the system's accuracy is tested.

Keywords: Artificial neural network (ANN), bus power converter, and UIPC power controller integrated into AC-DC microgrid

INTRODUCTION

A micro grid is a compact distribution system that contains loads and a framework for managing distributed generation (DG) systems like solar panels and wind turbines. Micro grids may be divided into three categories: DC, AC, and hybrid (AC/DC). Both the sources and the loads in DC micro grids are DC. Future intelligent distribution systems have been found to work best with hybrid micro grids [1-3]. The hybrid micro grid may or may not be connected to the main grid [8]. As shown in Figure 1, ILCs (interconnecting power converters) may be used to connect two microgrids. In hybrid microgrids, the parallel connection of power converters poses a considerable technological challenge. It's feasible to combine many microgrids to form a hybrid micro grid. Two alternating current microgrids and one direct current microgrid are a few examples. This application cannot use ILCs since the common bus voltage must be constant across all micro grids. Interconnectivity between ILCs" All the ILCs that are linked in parallel must divide the micro grids' electricity among themselves. Due to the non-linear nature of micro grid faults, the fault current may be distributed unevenly across ILCs. Because of the high voltage, it's possible that segregating converters will result in severe power loss. That's what's supposed to happen. In other words, this might cause instability in a micro grid. Harmonics in AC micro grids, which are formed by distortions in AC micro grids, are the cause of ILC and voltage drop phase discrepancy. Power sharing efficiency is reduced when ILCs with differing power factors operate in parallel, resulting in oscillations in voltage and power output. [12] uses a tier-based approach to managing parallel connections. An ILC with bifocal lenses has been considered. Harmonic repair and a stationary reference frame were employed to develop the control platform (SRF). Since it was developed at the SRF, using this approach is a simple process. Parallel connections of ILCs were handled using a method that ensured that the total of all ILC currents was equal. The "redundant" ILC received a worse rating than any of the other ILCs. As a consequence of this strategy, there will be expenses. In addition to failing to minimise harmonic distortion, the design also fails to reduce reactive power fluctuations, making it less efficient than the current technique. Most noticeable is the ability to connect groups of AC and DC micro grids with UIPC. In light of the above, it's clear that the approach outlined below works: In order to regulate the phase and common AC bus size, a management



A UNIQUE TECHNIQUE USING NEURAL NETWORK APPROACHES FOR THE DETECTION AND RECOGNITION OF DIABETIC RETINOPATHY

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ABSTRACT

Over time, diabetes can lead to DR, an eye condition. Vision becomes twisted and mutilated as the sickness worsens. Analyzing DR using a shaded fundus picture is difficult and time-consuming since it requires trained medical practitioners to recognise the existence of important highlights. We suggest using CNN to evaluate DR from computer-generated fundus images. In our inquiry, we adopted a different approach, wherein, once the entire image had been divided into pieces, only the regions of interest were taken for additional processing. The suggested format helps the customer connect with a specific professional and makes DR easier to grasp. This enables the client to focus on their inquiry and purchase a membership that is appropriate for their medical requirements.

Keywords— CNN, Retinal Image, Matrix, Diabetic Retinopathy (DR);

1. INTRODUCTION

Today, DR is identified with a dilated eye exam, in which doctors administer ocular drops in the patient's eyes. The eye is then captured on camera using a range of medical tools. Since this technique is manual, some diagnostic mistakes will always occur. Diabetic retinal damage (DR), often known as diabetic eye disease can occur when the retina is harmed. It could eventually result in visual impairment. It is a sign of diabetes, a dangerous ailment that impacts up to 80% of those with the illness for at least 10 years. Despite these alarming revelations, research indicates that if these new instances received adequate and careful treatment considering their potential to cause DR, the incidence of these new cases may be reduced by about 90%.

DR is a consequence of diabetes that damages the eyes. DR is caused by damage to the blood vessels in the light-sensitive tissue of the retina. Diabetic retinopathy is one of the leading causes of blindness in working-age people. Diabetes mellitus affects around 420 million people globally. In the last 20 years, the prevalence of this condition has risen, particularly in Asia. DR, a chronic eye condition that can cause vision loss, is predicted to be identified in roughly one-third of the population. The importance of DR stage classification depending on the extremities for proper treatment and prevention of vision loss cannot be overstated.

DR can be categorized into five stages, according to the Study of Early Treatment Diabetic Retinopathy. [8].

The review for programmed recognition of DR turns out to be an ever increasing number of essential in the beyond couple of years. In our review we are zeroing in on irregularities in the retina as exudates and red injuries. Because of the comparative shading attributes of red sores with the retinal veins it is difficult to find these injuries utilizing typical picture handling procedures. DR is an infection of the retina in persons who have diabetes. It is started as a result of long-term retinal vascular damage induced by diabetes mellitus [13]. One of the most common causes of blindness is this disease [2]. As a result, detecting it at an early stage is crucial.



AN OVERVIEW ON THE PLANNING AND CREATION OF A SYSTEM FOR DEEP LEARNING THAT TRANSLATES SIGN LANGUAGE TO SPOKEN ENGLISH

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ABSTRACT

Communication between the speech- and hearing-impaired and the majority of the speaking world is hampered by the lack of popularity of sign languages among the speaking world. These languages are classified as natural languages having unique lexicons and grammars, making it challenging for the average individual to comprehend them. This work presents a hand gesture classification, monitoring, feature extraction, and categorization-based sign language recognition system. Technology helped by artificial intelligence is being utilized to reduce this communication gap and raise the standard of living for these minority. In order to facilitate the translation of sign languages into spoken languages and vice versa, a number of technologies have been suggested and created. Despite efforts in this direction, technologies for everyday use have yet to be developed and popularized. The text or speech to be signed translatable to address this issue, we propose a novel convolutional neural network (CNN) that automatically extracts discriminative spatial-temporal features from images without any prior knowledge, thereby avoiding feature design. CNN is now actively used to solve a variety of problems like detecting human activity and detection of vehicle, network intrusion detection, etc. We validate the proposed model on a real dataset collected with real-time Open CV image capture and show how it outperforms traditional approaches based on hand-crafted features. To test the proposed hybrid model, we used our own American Sign Language finger spelling dataset. This database is made up of 7000 different types of signs with each letter containing about 300 images. The inputs would be taken as still images of signs taken with the computer webcam that do not involve any motion. Furthermore, additional improvements can be done in the future to the application. It could be created as a web or smart phone application to make it easier for users to access the project. Also, while the current project only works with ASL, it might be modified to function with other native sign languages with enough data and training.

Keywords: Deep Learning; Hand Gestures; Sign Language; Speech

INTRODUCTION

Even though there are more than 20 lakh people with speech impairments and over 50 lakh people with hearing impairments in India alone, sign language has never been taught or learned by anyone, which leaves a lot of people with these impairments feeling excluded and reduces their opportunities to express their ideas and ideologies. By 2050, it's anticipated that about 2.5 billion individuals would have some degree of hearing loss, with at least 700 million of those needing hearing rehabilitation. Around 1 billion young people are at risk of preventable, permanent hearing damage due to risky listening habits. Despite technological advancements, sign language still has to be made more widely known and accessible to the general public. Engineers are working on developing a glove with sensors attached to it that can recognize hand gestures made that are made by the person wearing these gloves. Though the idea, functionality and accuracy of the device are brilliant, we need easier ways that are readily available and are simple to be used by both disabled and non-disabled to create a bridge of communication between them. A sign language is a visual language which is expressed by hand movements. Sign languages usually differ from each other based on their location. Some of them are American sign language (ASL), British sign language and Indian sign language. To form its words, ASL employs hand shape, position, movement, gestures, facial expressions, and other visual cues. People with hearing disabilities who use sign language, or "sign," can communicate rapidly and



AN ASSESSMENT ON INDUSTRIAL WASTE OF RECON FIBERS TO IMPROVE THE CONCRETE'S PROPERTIES

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ABSTRACT

The only engineering material that can be molded into any form or size for use in civil engineering constructions is concrete. Concrete's raw material preparation not only results in material expansion but also produces a significant amount of air pollution. Concrete is frequently employed in several building projects. Researchers have been attempting to replace cement with other materials from an economic standpoint and to stop air pollution by either keeping the qualities using waste resources or boosting the properties using specific materials as the demand and usage of cement increases. This research aims to investigate the different engineering characteristics of a concrete constructed from industrial wastes in place of cement (fly ash). To maintain the engineering properties of concrete, a synthetic fibre named Recron 3s fibres manufactured by Reliance Industry Limited, India (RIL) is used in various proportions which is commonly available in the market. The experimental investigations include conventional tests for concrete such as compressive strength, split tensile strength and flexural strength. It has been observed that the Recron fibres to the extent of 0.2% fibre content maintain the satisfactory properties of concrete. However, the resistance to capillary action and porosity problems in concrete is improved considerably. The objective of the present work is to develop concrete with good strength, less porous and capillarity so that durability will be reached. For this purpose it requires the use of different industrial waste materials like fly ash, ground granulated blast furnace slag, silica fume along with fibre.

Keywords: Recron fibres, fly ash, coarse aggregate, concrete, strength tests

INTRODUCTION:

Many building techniques make use of concrete. Researchers have tried to replace cement with certain other materials in order to save money and minimize emissions into the atmosphere, either by conserving qualities by utilizing industrial waste or by enhancing characteristics using chosen materials, in response to the rising demand for and usage of cement. This study aims to investigate the various technical properties of a cement made from industrial waste (fly ash). Synthetic fibres known as Recron 3s fibres, created by Reliance Industries Limited, India (RIL), are used in a range of quantities and are widely accessible commercially in order to maintain the structural qualities of concrete. Common concrete measurements including flexural strength, compressive strength, and split tensile strength are included in the research papers. Recron fibres were found to preserve the adequate properties of concrete to the limit of 0.2% of the fibre content. However, confrontation to capillary action and difficulties with permeability in concrete has increased considerably.

The objective of the current study is to produce concrete with high consistency, less porousness and capillarity in order to accomplish durability. For this reason, it includes the use of various industrial waste products such as ground granulated blast furnace slag, fly ash, silica fume and fibre. The experimental investigation is then to be carried out:

- To determine optimal dosage of Recron 3S fibres to obtain maximum strength for the M25 grade concrete.
- To assess actual utilization industrial waste materials (fly ash) with fibre to accomplish the required needs.
- To obtain percentage replacement of industrial waste (i.e., Fly Ash) with a proportional dose of fibre.



AN ASSESSMENT ON THE IMPACT OF GEO-ACTIVATOR BY THE DURABILITY AND STRENGTH CHARACTERISTICS OF GEOPOLYMER CONCRETE

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ABSTRACT

Geopolymer concrete is a special type of concrete used worldwide nowadays. The main use of geopolymer concrete is to reduce global warming in the atmosphere and make the structure in economic condition because of waste materials in geopolymer concrete manufacturing. The major problem worldwide is the increase of CO₂ emissions in the environment, which makes the structure easily damage. So geopolymer concrete is a good solution for all problems relating to the atmosphere and environmental conditions. Much research is going on geopolymer concrete and improving the performance and durability day by day. It has excellent mechanical properties compared to conventional concrete. These various types of binders are used in place of cement to get better results in the concrete structure, and by replacing the cement with the binders, the rate of the heat of hydration also decreases. So it makes the concrete economically and environmentally friendly concrete.

Keywords: Geopolymer concrete, Binders, Activators, Durability.

INTRODUCTION

Concrete is a main important material for any construction that is a small or medium or large construction of buildings, industries, and offices. It can be used widely for the construction of any structure. In this, there are different types of concretes are available in the construction industry. This concrete technology plays a major role in developing the concrete and using new concrete techniques and plays an important role in civil engineering. The most used and very important types of concrete are the first one is self-compacting concrete and the second one is geopolymer concrete. This lot of researches are going on both types of concrete. In this geopolymer, concrete is made from waste materials. Concrete is usually made by mixing fine aggregate and coarse aggregate and cement and water and some admixtures. In this, the important ingredient used in the concrete is cement only. Increasing carbon dioxide in the atmosphere and increasing emissions in the atmosphere and fuel gases leads to substantial material damage. The solution to its problem is to make concrete as a sustainable material and environmentally friendly material. In this geopolymer, concrete is very good for the friendly construction of structures. Different types of ingredients or compositions are used, and they are flyash and GGBS. The main use of these components in the concrete is reducing carbon dioxide emissions at cement production. Another one is the proper utilization of wastes. In this, binders are used in place of cement. So it can reduce some problems. Geopolymer concrete is one special type of concrete and can replace cement material with a suitable binder material. The major use of it is to make the concrete more economical than the cement.

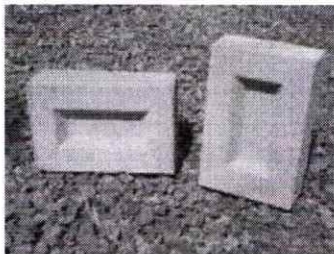


Fig. Geopolymer concrete block

LITERATURE REVIEW

UGC CARE Group-1

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An influence on the analytical analysis of the UNS S32760 stress of notched super duplex stainless steel

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ABSTRACT

The current project aims to investigate how the notch shape affects the tensile strength of the superb duplex stainless steel UNS S32760. The strain-lifestyles curve for the chosen fabric is initially calculated using Finite Element Method and empirical methodologies. Afterwards, an experimental inquiry is conducted to assess the consequences. The investigations' scope includes measuring the strain on the experimentally chosen material. Research on the effects of the notch parameters (depth, breadth, and notch crucial angle) on the tensile strength and fatigue life of the aforementioned material is also included in the scope. The structure of the tests uses project notches of various parameters using response floor methods to quantify the impact of notch parameters on fatigue lifetimes. Prediction of the effect of any notch variation at the fatigue lifestyles is likewise completed the use of regression analysis.

Keywords: Keywords: Fatigue Life, fatigue analysis, Fatigue failure, Low Fatigue analysis, S-N curve, ϵ -N curve, Super Duplex Stainless Steel, UNS S32760.

INTRODUCTION

Fatigue failure is the degradation of a material brought on by cyclic stress, which results in recent and localized structural damage that may be seen with the use of a cracking boom. A crack that has already started will get smaller with each load cycle until it reaches a significant length, at which point the pressure depth aspect of the crack causes fast propagation and often complete fracture of the component or form. Steel fatigue originated from the traditional association of fatigue with metal system failure.

Ship systems are exposed to many different cyclic mass variations from wind, waves, and load operations, which might cause fatigue damages in them. Fatigue cracks usually arise in advance than expected in numerous places of ships/different marine systems which significantly have an effect on their wellness and operations. During the last decades, there has been a speedy boom within side the international delivery markets and this created the want for accelerated length of ships. The improvements in production technology enabled this with the aid of using novel versions of stainless steels with better electricity to weight ratio in ships. The OOCL Hong Kong is the primary deliver ever to surpass the 21,000 TEU mark. With accelerated dimensions, the deliver's shape is liable to greater risk from the tidal masses that may bring about fatigue damages and this will venture the deliver's layout and safety. Hence, deliver systems must be designed with good enough fatigue electricity banking upon general policies and procedures. Though the deliver systems are constructed primarily based totally on general policies and pressure-primarily based totally strategies, screw ups are nonetheless determined because of fatigue. Due to the massive uncertainties like numerous wave environments, unsure hydro-dynamic repetitive masses, pressure concentrations etc. concerned with inside the fatigue layout procedure of ships, fatigue cracks arise a great deal in advance than expected. One of the motives for the poor fatigue layout of ships is the absence/ inadequate utilization of stress-primarily based totally strategies in the course of fatigue studies. The presence of unexpected geometry changes, notches and cracks at the surface additionally want to receive weightage in the course of the fatigue layout. Hence layout of deliver systems for fatigue loading is inadequate with out stress-primarily

124-26

A significant assessment on the production of biofuel and biochar from sugarcane bagasse using thermolysis

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ABSTRACT

Biochar and fuel made from sugarcane bagasse Thermal pyrolysis has the potential to take the place of energy sources originating from fossil fuels. The numerous conversion processes, such as gasification, torrefaction, and pyrolysis, have all been considered, although the latter has received more attention due to its viability when compared to the former. The conversion of the biomass by pyrolysis was carried out at a range of pyrolytic temperatures ranging from (300-500C) at a heating rate of 250C/min, and the ideal temperature was discovered at 450C, which was determined to be 53.3% of bio-oil. The liquid product, or bio-oil, was examined using a variety of characterization methods, including GC-MS, 1H-NMR, physical characteristics, and CHNS. The bio-characteristics oil's were determined to be appropriate for usage as fuel. The effect of temperature on the yield of bio-oil, bio-char, bio-gas & reaction time were studied & plotted which showed that the bio-char yield decreased with increase of the pyrolytic temperature. The potential of the bio-char produced from biomass was analyzed by proximate, ultimate, BET surface area, SEM-EDX, anion chromatography, pH, Electrical Conductivity & Zeta Potential studies. The carbon percentage was high enough to be used as a soil amendment, the surface areas were also found to be more with low surface area as 132m²/gm for 300C bio-char to 510 m²/gm for highest temperature bio-char. This high surface area attributed towards application of the bio-char in soil amendment purpose. The ion-chromatography results also showed the presence of anions that are required as nutrients for plants for their metabolic activities. It will also serve as a good source of plant nutrients since it contains less toxic elements. The bio-char had

a slightly acidic surface as found from the pH study. Thus from the above studies we found that the bio-fuel and the bio-char can serve as a source of energy as well as chemical feedstock for the future to depend on.

Keywords: Sugarcane bagasse, bio-oil, bio-char, TGA, XRD, Proximate analysis, CHNS analysis, BET surface area, Electrical Conductivity.

INTRODUCTION

People have relied on biomass for their energy needs since the beginning of time. Advances in manufacturing were made possible by the discovery of crude oil. The term "biomass" refers to the biological material derived from living things, and it often refers to the ecosystem's flora, which includes plants and components mostly generated from plants. As biomass is a renewable source of energy, after being transformed into useful goods, it may be used either directly or indirectly. The primary energy sources used to meet the need for energy are coal, oil, and natural gas. As petroleum sources are getting depleted, and also there is a demand for petroleum products, so we have to develop economical and energy-efficient processes for the production of fuels. Thus, a dire need to put a control over its consumption has been felt by environmentalists and economists as well, to examine renewable and less cost substitute to fossil fuel to meet their energy demand. In regards to this, a lot of research work is going on around the globe on various alternative sources of energy such as solar, wind, geothermal, hydrogen, nuclear, bio fuel or biomasses. The main source of biomass generally comes from the forestry products, agricultural crops and residues and biological wastes. The energy

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An effective method of lowering partial products involves merging additions and accumulations into a multiply-accumulate unit.

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ABSTRACT

This research suggests a pipelined Mac architecture with minimal power and fast performance. Carry propagation of ads has higher power consumption and longer route latency; to address this issue, we suggest a way. In this, we include a portion of additions into a procedure that only partially reduces the result. The PPR procedure of subsequent multiplication does not accomplish addition or accumulation of MSB bits. The total number of carries is meant to be accumulated by a small size adder in order to properly contrast with surplus in the PPR process. Using XilinxISE14.7, the efficacy of the suggested technique is calculated.

Keywords: MAC unit, dadda multiplier, Arithmetic circuits, alpha-bit adder

Introduction

In the proposed method we use two stage MAC unit with 8 and 16 bit. In Partial Product Generation (PPG) process, PPR performed in the first stage, in the second stage performs the $(k+\alpha)$ -bit addition to produce the accumulation result. The main trademark of this proposed architecture is mentioned below: To reduce the lengths of carry propagations, we integrate a part of additions into the PPR process. To handle overflow in the PPR process, a α -bit adder is used to count the total number of carries. By applying the gating technique, the second stage can only be executed in the last cycle (of the entire sequence of multiply-accumulate operations) for power saving.

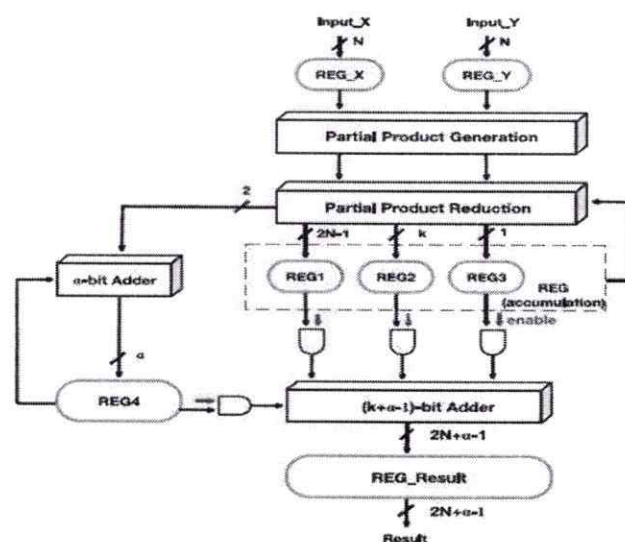


Fig.1. Architecture of Proposed MAC Unit

The proposed architecture of MAC shown in above figure. Our PPM (for the PPR process) is composed of two

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Assessment of Developing a High-Speed Area-Efficiency-Based Reversible Adder with Reduced Quantum Cost in VLSI Architecture

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ABSTRACT

The three-operand binary adder is the fundamental functional component used in many cryptography and pseudo random bit generator (PRBG) techniques, as well as other applications, to carry out modular arithmetic. The method that is most frequently used to execute three-operand addition is called Carry Save Adder (CS3A). Ripple carry adder is used in carry save adder's last step, which results in a significant critical path delay. In addition, a parallel prefix two-operand adder like the Han-Carlson Adder (HCA) may be utilized for three-operand addition, which greatly decreases the critical path time while increasing area complexity. In order to implement the three-operand binary addition, a novel high-speed and area-efficient adder architecture is developed that uses pre-compute bitwise addition followed by carry prefix computation logic. The effectiveness of the proposed method is designed using Xilinx ISE 14.7

Keywords: Arithmetic Circuits, Three-operand adder, carry Save Adder (CSA), Han-CarlsonAdder (HCA)

Introduction

To minimize this trade-off between area and delay, a new high-speed, area-efficient three- operand adder technique and its efficient VLSI architecture is proposed. New adder architecture is used to perform the three-operand addition in modular arithmetic. The proposed adder technique is a parallel prefix adder. However, it has four-stage structures instead of three-stage structures in prefix adder to compute the addition of three binary input operands such as bit- addition logic, base logic, PG (propagate and generate) logic and sum logic. The logical expression of all these four stages. By implementing in this manner we can reduce the both area as well as delay.

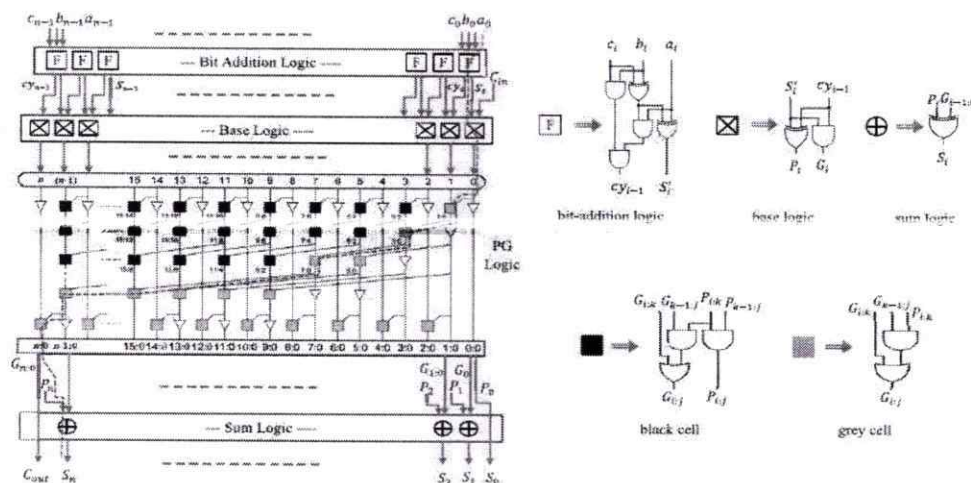


Fig.1. Block Diagram of Proposed Three-operand adder

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LAYOUT OF A HIGH-PERFORMANCE MULTIPLY-ACCUMULATE UNIT WITH ADDITIONS INTEGRATED TO REDUCE PARTIAL PRODUCT Processing USING PASTA ADDER

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ABSTRACT

In this paper, we propose low-power high-speed pipelined Mac architecture. Carry propagation of additions consume more power and large path-delay, to resolve this problem we introduce a proposed method. In this we integrate a part of additions into a partial product reduction process. Until the PPR process of next multiplication, addition and accumulation of MSB bits are not performed. To correctly contrast with surplus in the PPR process, a small size adder is designed to accumulate the total number of carries. The effectiveness of the proposed method is designed using XilinxISE14.7.

Keywords: MAC unit, dadda multiplier, Arithmetic circuits, alpha-bit adder

Introduction

In the proposed method we use two stage MAC unit with 8 and 16 bit. In Partial Product Generation (PPG) process, PPR performed in the first stage, in the second stage performs the $(k+\alpha)$ -bit addition to produce the accumulation result.

The main trademark of this proposed architecture are mentioned below: To reduce the lengths of carry propagations, we integrate a part of additions into the PPR process. To handle overflow in the PPR process, a α -bit adder is used to count the total number of carries. By applying the gating technique, the second stage can only be executed in the last cycle (of the entire sequence of multiply-accumulate operations) for power saving.


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IMPERATIVE LENGTH EXTENSION OF ENCRYPTED CONTROL SYSTEM THROUGH FOG COMPUTING

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ABSTRACT

In a practical modern situation, this letter promotes a mixed control structure that is based on darkness preparation. To prevent tuning-in attacks, the built structure hides controller gains and signals through correspondence joins using multiplicative homomorphic encryption. The validity of position servo control for the motor-driven stage with the manufactured system is endorsed experimentally in terms of execution degradation, limit assortment, and maintenance time. Whether plant restrictions alter or not, even after the controller gains and signals are combined, the built system acquires its tenacity. Also, even if expanding a vital length of encryption results in a longer planning time, debasement of control execution is getting further developed in the meanwhile.

Index terms – cloud computing; fog Computing, controller, homomorphic encryption.

INTRODUCTION

Control systems that operate in the cloud and connect their controlled devices to a correspondence association so they may be monitored and managed there are becoming more and more popular. A cloud-based control concept called Control as a Service (CaaS) for auto control was put forth. Robot Control as a Service was introduced by the creators. Similar to this, it acknowledges higher-layer control, such as development planning for, mechanical robots. Platform as a Service (PaaS) for cloud-based advanced mechanics applications is Rapyuta's contribution to Robo Earth. The primary benefit of these designs over conventional coordinated systems is their increased flexibility, adaptability, and efficiency.

Of course, lower-layer control (e.g., servo control of actuators) very neighborhood execution, and a cloud designing isn't sensible for such control by virtue of latencies between controlled devices related with the cloud. This issue can be tended to by fog enrolling, which is a decentralized figuring plan with a moderate layer called fog. Murkiness enrolling based control structures diminish correspondence concede and hold the potential gains of cloud-based control systems, that is, the controller shouldn't be presented locally, and directors can remotely screen the plant condition and adequately change the control law. In addition, the fog aggregates and cleans dirty data to help assessment in the cloud.

Dimness figuring offers various anticipated benefits, especially for ceaseless applications, notwithstanding the way that security and insurance issues in the fog persist like the occurrence of the cloud. Attacks on computerized real systems, for instance, coordinated control structures, are more hurting than attacks on information systems considering the way that real structures can directly impact certifiable conditions. Enemies can sneak around, assault, and contort the structure if wellbeing endeavors have not been done sufficiently. The makers checked the threats of regulators by authentic attacks, which meddle with controller gains. It is fundamental to muddle controller gains and to camouflage signals from the attacks.

Encoded control, a mix of cryptography and control theory, is a promising methodology to chip away at the security of control systems by decreasing perils of tuning in attacks. Snooping attacks intend to take information of control structures to execute more outrageous attacks, for instance, zero components attacks, later on. In encoded control structures using ElGamal encryption, which is multiplicative homomorphic

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Integration of LSTM and Recurrent Neural Networks for the Prediction of Steelworker Dyslipidemic Risk

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ABSTRACT

As medical digitalization, artificial intelligence, and big data technologies improve, the medical paradigm is increasingly changing from one that is treatment-oriented to one that is prevention-oriented. The development of artificial neural networks, in particular deep learning, has led to significant advancements in text processing, natural language processing, picture classification, and other fields in recent years. Using artificial intelligence and big data technologies for illness risk prediction is a research emphasis in the field of intelligent medicine. Blood lipids are one of the main risk factors for cardiovascular and cerebrovascular diseases. Early intervention may be carried out to preserve the health of iron and steel workers if abnormal blood lipids in such employees can be expected. This essay examines the variables that affect steelworkers' dyslipidemia and explains the often used method for disease prediction, and then studies deep learning related theory. This paper introduces the two deep learning algorithms of RNN (Recurrent Neural Network) and LSTM (Latent Semantic Transformation Machine) (Long Short-Term Memory).

INTRODUCTION

These the transition of China's economy from one based on agriculture to one based on industry has been greatly aided by the iron and steel sector, which serves as the foundation of the secondary sector. Even clearer is the role that front-line steel workers play in the manufacture and processing of steel. As a result, the financial gains of each steel production unit, the whole city's revenue, and the overall might of the nation are all intimately correlated with the physical well-being of front-line steel workers [1]. The working conditions for steel employees have substantially improved along with society's and technology's advancements, eventually shifting from manual to machine labour [2]. However, there are still some jobs that require workers to be under high temperature conditions and pay attention for a long time to ensure the successful completion of production work, such as the temperature control of molten iron in front of the furnace, the casting machine, etc., and also require workers to concentrate on standing or sitting for a long time in high temperature and noise. Hence, in addition to occupational diseases, there are also a series of chronic non-infectious diseases in the course of work [3], [4].

Dyslipidemia is one of the major risk factors for a variety of chronic non-infectious diseases, and a major cause of stroke and heart disease [5]. A series of physiological reactions will occur in the human body during high-temperature operation, mainly including changes in body temperature regulation, water and salt metabolism, circulatory system, neuroendocrine system, and urinary system. The mechanism of noise on blood lipids and glucose is not very clear, but there are reports suggesting that noise stimulation can not only damage hearing, but also be introduced into the cerebral cortex and autonomic nervous center through hearing, triggering a series of reactions in the central nervous system.

LSTM and recent neural networks: an evaluation of the risk prediction for steelworker dyslipidemia

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ABSTRACT

As medical digitalization, artificial intelligence, and big data technologies improve, the medical paradigm is increasingly changing from one that is treatment-oriented to one that is prevention-oriented. The development of artificial neural networks, in particular deep learning, has led to significant advancements in text processing, natural language processing, picture classification, and other fields in recent years. Using artificial intelligence and big data technologies for illness risk prediction is a research emphasis in the field of intelligent medicine. Blood lipids are one of the main risk factors for cardiovascular and cerebrovascular diseases. Early intervention may be carried out to preserve the health of iron and steel workers if abnormal blood lipids in such employees can be expected. This essay examines the variables that affect steelworkers' dyslipidemia and explains the often used method for disease prediction, and then studies deep learning related theory. This paper introduces the two deep learning algorithms of RNN (Recurrent Neural Network) and LSTM (Latent Semantic Transformation Machine) (Long Short-Term Memory).

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Assured quality and evaluation of the manufacturing sector's by the execution of overall quality management

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Abstract

Every business now abides by the new maxim of total quality management. It is described as the organization's whole workforce working together to continuously enhance the quality of its output. The current investigation was carried out at Maha Cements, a cement manufacturer in Hyderabad. for gathering the information and input. One of the quality philosophies is used by the Toyota Company in Japan, General Motors in the United States, Honda Company in Japan, Maruti Udyog in India, Tata Steel, TVS Group of Businesses, and Mahindra & Mahindra Group of Companies.

There are so many intellectuals working towards the principles of Quality management system. Edward Deming, Shewart, Juran are pioneers for implementing the quality management principles and given number of demonstrations throughout the world for development of quality systems in organization.

Introduction

The Total Quality Management principles not only applicable to organizations and it can be adopted in service organizations as well. Applo Hospitals, Sun Rise Hospitals, in Hyderabad has adopted Total Quality Management System in their service organizations. Quality is considered as one of the fundamental components of any product that is essential not only for firms' sustainability but also for customers retention. It is a key factor that provides the competitive edge to the organizations over their rivalry firms, that is why considered important for their survival. Therefore, recently, businesses particularly, manufacturing concerns paid much attention towards maintaining their products and service quality. They are continuously working on quality enhancement by compliance of international quality standards. The total quality management (TQM) practices and quality management system (QMS) in this regard play an integral role in enhancing the product quality and even decreasing the manufacturing expenses. Previous studies confirmed that QMS and its practices help the organizations to address client's requirements, whereas its effective implementation provide a competitive edge to the firm in the market. One of the most challenging parts of implementing QMS in any organization is the culture of quality prevailing in its departments and sectors.. Powell, (1995) additionally it is indicated that various segments and parts of QMS should work with legitimate combination for the successful execution of it in the organizations. The technologically advanced countries like USA, Japan, and the UK presented and implemented ISO standards in their associations. Motivated by the successful execution of ISO gauges in advanced nations, the manufacturing association of emerging countries also started implementing of ISO standards. The developing countries are also following these standards to meet the customers' demands and remain in the competitive market. ISO offers an assortment of advantages to the businesses. These advantages incorporated improved quality, better efficiency, and greater market exposure. The pace of selection and adoption of ISO principles is very high in all the business segment of Pakistan. Government is also directed the firms to implement the quality standards. Therefore, this study investigates and compares the level of adoption of ISO standards in the manufacturing concerns of Pakistan and analyse its effect on performance of the firm. But not all the organizations that acquire ISO certification implement QMS in its real sense and spirit to gain business advantages. ISO certification has now become the mandatory requirement for

Examination of the Structure and Evolution of a Deep Learning Framework for Converting Sign Language to Spoken English

148-50

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ABSTRACT

Communication between the speech- and hearing-impaired and the majority of the speaking world is hampered by the lack of popularity of sign languages among the speaking world. These languages are classified as natural languages having unique lexicons and grammars, making it challenging for the average individual to comprehend them. This work presents a hand gesture classification, monitoring, feature extraction, and categorization-based sign language recognition system. Technology helped by artificial intelligence is being utilized to reduce this communication gap and raise the standard of living for these minority. In order to facilitate the translation of sign languages into spoken languages and vice versa, a number of technologies have been suggested and created. Despite efforts in this direction, technologies for everyday use have yet to be developed and popularized. The text or speech to be signed translatable to address this issue, we propose a novel convolutional neural network (CNN) that automatically extracts discriminative spatial-temporal features from images without any prior knowledge, thereby avoiding feature design. CNN is now actively used to solve a variety of problems like detecting human activity and detection of vehicle, network intrusion detection, etc. We validate the proposed model on a real dataset collected with real-time Open CV image capture and show how it outperforms traditional approaches based on hand-crafted features. To test the proposed hybrid model, we used our own American Sign Language finger spelling dataset. This database is made up of 7000 different types of signs with each letter containing about 300 images. The inputs would be taken as still images of signs taken with the computer webcam that do not involve any motion. Furthermore, additional improvements can be done in the future to the application. It could be created as a web or smart phone application to make it easier for users to access the project. Also, while the current project only works with ASL, it might be modified to function with other native sign languages with enough data and training.

Keywords— Deep Learning; Hand Gestures; Sign Language; Speech

INTRODUCTION

Even though there are more than 20 lakh people with speech impairments and over 50 lakh people with hearing impairments in India alone, sign language has never been taught or learned by anyone, which leaves a lot of people with these impairments feeling excluded and reduces their opportunities to express their ideas and ideologies. By 2050, it's anticipated that about 2.5 billion individuals would have some degree of hearing loss, with at least 700 million of those needing hearing rehabilitation. Around 1 billion young people are at risk of preventable, permanent hearing damage due to risky listening habits. Despite technological advancements, sign language still has to be made more widely known and accessible to the general public. Engineers are working on developing a glove with sensors attached to it that can recognize hand gestures made that are made by the person wearing these gloves. Though the idea, functionality and accuracy of the device are brilliant, we need easier ways that are readily available and are simple to be used by both disabled and non-disabled to create a bridge of communication between them. A sign language is a visual language which is expressed by hand movements. Sign languages usually differ from each other based on their location. Some of them are American sign language (ASL), British sign language and Indian sign language. To form its words, ASL employs hand shape, position, movement, gestures, facial expressions, and other visual cues. People with hearing disabilities who use sign language, or "sign," can communicate rapidly and effectively with those who do the same. To go around, most deaf persons utilize a combination

AUTOMATE MULTIMEDIA CLOUD COMPUTING: A COMPUTING STRUCTURE FOR EFFICIENT RESOURCE ALLOCATION BASED ON DYNAMIC PRIORITY

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ABSTRACT

In an intelligent transportation system, smart vehicles are fitted with a range of sensing devices that offer a range of multimedia services and applications related to smart driving assistance, weather forecasting, traffic congestion information, road safety alarms, and a range of entertainment and comfort-related applications. These smart cars produce a huge amount of multimedia-related data that demands quick and real-time processing but can't be efficiently handled by independent onboard computer equipment due to their limited computational power and storage capacity. To accommodate such multimedia applications and services, the underlying networking and computer infrastructures have to be modified. Recently, the integration of vehicles with cloud computing has come to light as a solution to a number of problems with processing multimedia content (such as resource cost, rapid service response time, and quality of experience) have a significant impact on vehicular communication performance. To address the aforementioned issues, we present an effective resource allocation and computation architecture for vehicular multimedia cloud computing in this research. Using the Clouds simulator, the proposed scheme's performance is assessed in terms of quality of experience, serviceresponse time, and resource cost.

INTRODUCTION

High-speed Internet is becoming a prerequisite for autonomous or driverless vehicles, which the automotive sector is focusing on globally in collaboration with academics. These smart cars can take high-resolution pictures, record movies, and understand a huge quantity of sensory data, as shown in Figure 1, to ensure a successful and smooth voyage as well as to enjoy a range of multimedia applications and services from comfort to entertainment [3]. Also, through a roadside infrastructure, smart vehicles may interact and share a variety of information with one another, including pictures of road maps, information on road safety, and traffic load data for safe driving. Also, these cars may exchange a range of additional data (for example, automatic parking, map position, Internet connection, cooperative cruise control and driving, security distance and collision alerts, driver assistance, and road information broadcast) [1] [2]). As a result, cars generate a large amount of vital andtime-sensitive data, which necessitates on-time processing to assure on-time delivery and preserve the quality of the experience. However, because to the limited storage and computational capabilities of isolatedonboard devices, such a large volume of multimedia-related data cannot be processed. Furthermore, intermittent connectivity, short radio communication,lack of bandwidth, and high mobility can make the task more challenging.

An evaluation of the use of industrial coal in place of coarse aggregates under various circumstances

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ABSTRACT

Concrete is now being used in this project for a variety of purposes to make it suitable for various circumstances. Normal concrete may not perform as anticipated or be as sturdy under these circumstances. In this project, industrial coal is being used in place of some of the coarse aggregates. We use it because, in general, concrete will have a maximum self-load. There will be higher bending moments and steel area as a result. In order to solve this issue, we are replacing some of the coarse materials with coal. We shall research concrete's mechanical characteristics in great depth

Keywords—Light weight concrete, Natural aggregate, Course aggregate, Industrial waste material.

INTRODUCTION

Coal is a combustible sedimentary rock that is typically found in rock strata in layers or veins known as coal beds or coal seams. Due to later exposure to high temperatures and pressures, the harder forms, such as anthracite coal, can be classified as metamorphic rock. The main constituents of coal are carbon and various amounts of other elements, principally hydrogen, sulphur, oxygen, and nitrogen [2]. Dead plant material is turned into peat, which is subsequently processed into lignite, sub-bituminous coal, bituminous coal, and finally anthracite to produce coal, a fossil fuel [3]. Geological and biological processes are involved. Geological processes occur over a period of millions of years.

At various times in the geologic past, the Earth had dense forests in low-lying wetland areas. Due to natural processes such as flooding, these forests were buried underneath soil [4]. As more and more soil deposited over them, they were compressed. The temperature also rose as they sank deeper and deeper. As the process continued the plant matter was protected from biodegradation and oxidation, usually by mud or acidic water [5]. This trapped the carbon in immense peat bogs that were eventually covered and deeply buried by sediments. Under high pressure and high temperature, dead vegetation was slowly converted to coal. As coal contains mainly carbon, the conversion of dead vegetation into coal is called carbonization.

The wide, shallow seas of the Carboniferous Period provided ideal conditions for coal formation, although coal is known from most geological periods. The exception is the coal gap in the Permian–Triassic extinction event, where coal is rare. Coal is known from Precambrian strata, which predate land plants—this coal is presumed to have originated from residues of algae.

METHODOLOGY

A. Concrete mix design

The objective of producing a concrete of the required, strength, durability, and workability as economically as possible

B. Compressive Strength

It is one of the most important properties of concrete and influences many other describable properties of the hardened concrete. The mean compressive strength required at a specific age, usually 28 days, determine the nominal water- cement ratio of the mix.

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AN ECO-BRICK, A COMBINED ECO-BRICK, AND A PRISM ARE COMPARED AGAINST EACH OTHER IN A COMPRESSION TEST

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ABSTRACT

In building construction, brick is the major ingredient used for construction. In the process of brick making, it has to be burnt in kiln which emits CO₂ gas and pollutes the environment. Waste plastic bottles are non biodegradable and its disposal has always been a problem. Therefore, replacing the bricks with an alternative material, i.e. bricks made from waste plastic bottles are the solution. Waste Polyethylene Terephthalate (PET) bottles packed with dry solid wastes, sand or soil has been successfully used in a number of countries. The main objective of this work is to use the waste plastic bottles and construction demolition waste in building construction which reduces the environmental pollution. Plastic bottles of size 600ml are filled with finally crushed construction demolition waste in three layers and tampered each layer with tampering rod by 25 blows and used. These bottles were called as Eco-Bricks. The prism is made with the size of (28 x 16 x 24)cm in which 6 Eco-Bricks were placed. Composite Eco-Bricks is made with the size of (23 x 10 x 7)cm in which a single Eco-Brick is placed. The compression test is carried out for an Eco-Brick, composite Eco-Brick and for prism and compared with the conventional one. As a result, Eco-Brick shows 90% increase in load carrying capacity than conventional Bricks. Composite Eco-Bricks and prism shows 12% increase in strength. Therefore it can be used for low rise buildings and temporary structures.

Key Words: Bricks, Strength, Global warming, Temperature, Wind velocity.

INTRODUCTION (PLASTIC WASTE)

Plastic bottles are increasingly becoming a menace to the environment due to the use of chemicals in the manufacture, use and disposal [1]. It has resulted in pollution problems in waterways, landfills and continues to grow. Taking into account the increase of pollution new concept of eco bricks has been introduced [2]. When these bottles are filled with sand, gravel and cork or wood particles, they have great insulating capability. These walls can absorb abrupt shock loads; being non-brittle they produce much less construction waste compared to conventional bricks [3-4]. They also reported that compared to brick and concrete block walls, plastic bottle walls cost 75% less. Being lighter, plastic bottle walls can be better against earthquakes due to the compaction of filling material in the bottles, they are 20 times more load resistant than conventional bricks these filling materials also make these walls bullet proof [5-6].

PET is Polyethylene Terephthalate. Plastic bottles are used to store liquids such as water, soft drinks, oil, milk, medicine, and ink, etc., It provides good chemical resistance and a high degree of impact resistance and tensile strength. The maximum temperature it can bear is up to 200 degree Celsius. The biggest advantage of plastic bottles over glass is their superior resistance to breakage.