



Smart city security, data management, and ethical issues will be examined in the development of future human-centered smart cities.

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Abstract

There is a pressing need to consider the long-term viability of livable cities in light of the world's growing population. While artificial intelligence services are becoming more common in modern smart cities, it's important to remember that (1) technology can facilitate prosperity, well-being, urban livability or social justice only when it's paired with the right analogue complements (such as well-thought-out policies, mature institutions, responsible governance) and (2) the ultimate goal of these smart cities is to facilitate and enhance human welfare and social flourishing. Extremism, polarisation, disinformation, and Internet addiction have all been linked to a variety of technical business models and characteristics, according to recent research. These findings highlight the critical relevance of resolving philosophical and ethical issues related to the development of AI algorithms that will serve as the foundation for future cities' technological infrastructure. There are requests for technology to be more humanitarian and human-centered across the world. Key barriers to a successful deployment of AI in human-centric applications are examined and explored in this study with a special focus on the convergence of these concepts/concerns, which include security, robustness, interpretability, and ethical (data and algorithmic) challenges. These important issues are examined in depth, and we examine how one of these challenges may lead to or help solve other challenges. Research in these areas is also advised on how to fill up the present gaps and find better answers, and this publication does just that. In our opinion, this level of thoroughness is essential for future study in the field.

Introduction

By 2050, it is predicted that 66% of the world's population will live in cities, a figure that now stands at 54%. Rapid urbanisation is spurred by economic factors, but the environmental and social costs are important as well. In order to maintain a balance between rising urbanisation and the limited resources available in cities, environmental, social, and economic sustainability are essential. As a result of current technology, we are attempting to enhance the environmental and economical elements of urban living, and to mitigate the accompanying issues. Modern technologies such as Internet of Things (IoT) sensors are being used to gather and analyse data on many aspects of urban life in smartcities [2,3]. [2,3]. People from several fields, such as engineering, architecture, urban planning, and economics, must work together to develop, design, build, and deploy a smart solution for a specific purpose. A variety of IoT sensor data may be analysed using AI approaches to better manage and make use of available resources via the use of artificial intelligence (AI). Data science, statistical learning, machine learning, and

deep learning are all examples of AI used broadly in this paper as an umbrella term for techniques and algorithms that can learn from data. Intelligent systems that can perform tasks such as perception, reasoning, and inference are also included (i.e., expert systems, probabilistic graphical models, Bayesian networks). Artificial Intelligence (AI) may help you get insights from data if you know how to ask the correct questions and are aware of the hazards, according to Greg Stone [4]. AI has shown to be very useful in a wide range of smart city applications, including healthcare, transportation, education, the environment, agriculture, and military [5–9]. This study focuses on artificial intelligence (AI) technology for smart cities, however our concepts can be applied to a broader range of AI technology for smart cities. The most recent substantial advancements have also been made feasible by improvements in artificial intelligence. We will often use the terms "AI safety" and "AI ethics" interchangeably because of their close connection to AI.

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Multilevel Clustering Exploration As Network

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Abstract

Visual analytics has gained a lot of attention for its ability to identify meaningful patterns in large datasets. The identification and depiction of clusters is one of the most typical activities. In heterogeneous datasets, on the other hand, this is more difficult since the data must be seen from several angles. A dataset with a high degree of variability may in fact conceal trends that lie under the surface. An analytic framework for examining the clustering at various degrees of detail is provided by the use of dendrograms (graphical representations of agglomerative hierarchical clustering). Nevertheless, as the dataset becomes larger, dendrograms get congested, and a single cut might be inadequate in diverse datasets to demarcate multiple clusters. Visual analytics technique dubbed MCLEAN is proposed in this study to assist the user in discovering and exploring clusters. Data may be represented in a wide variety of ways by modifying its spatialization using graph-based transformations of relational data. Thus, multilevel representations of the clustered dataset are combined with techniques for locating the communities that live there. User exploration and data analysis might begin with the presentation of heuristics findings to the public. Users are invited to compare the findings of MCLEAN and the dendrogram while exploring a diverse dataset in order to assess our suggested technique. Qualitative findings show that MCLEAN is a useful tool for helping people identify clusters in diverse datasets. An R programme implementing the suggested approach is readily accessible.

Introduction

The technique for addressing the clustering issue is separate from the problem of determining the number of clusters in a dataset. Many times, it is difficult to determine how many groups a dataset should have based on its structure and size, as well as the required level of clustering resolution by a user. There are several factors to consider when deciding how many clusters to utilise; in general, it's a trade-off between the most compression and the highest resolution possible. For example, k-means, DBSCAN, and hierarchical clustering all use a variety of clustering methods for determining the number of clusters. In certain cases, these factors may directly or indirectly determine the number of clusters that are generated by the algorithm. Pre-existing data knowledge or time-consuming trial and error are required to set these values. It's also possible that a single cutoff might obscure intriguing structures behind it.

Automated clustering approaches sometimes overlook unique aspects of clusters, such as their density or sparsity, since there may not be a single logical cutoff in the actual world.

"The clustering process is not complete until it is examined, verified, and approved by the user," says the statement. As a result, visual validation and exploration may help clarify the clustering structure and uncover patterns, outliers, and clusters that otherwise would be difficult to see. These visualisations aid in swiftly assimilating the data and give insights that supplement textual outputs or statistics summaries. How well-defined are the clusters, how far apart they are, what their size is, and whether or not the observations belong strongly to the cluster or are just marginally associated with it? There are many potential clustering situations to explore, and it might be difficult for the user to identify related groupings of records (i.e., patterns)

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AN INTEGRATED ANTI-SPAM SYSTEM BY STATISTICAL MACHINE LEARNING BASE PAPER

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Abstract: Spam emails, also referred to as non-self, are commercial or harmful unsolicited emails, sent to attack either a particular entity or an organization or a community of individuals. In addition to marketing, these are websites hosting phishing or malware set up to steal sensitive details. In this paper, a review on the feasibility of using an anomaly negative selection algorithm (NSA) is presented. It introduces the detector applied to spam filtering. The high efficiency and low false detection of the NSA is presented. Via three detection stages, the built system intelligently works to eventually decide Legitimacy of an email depending on the information collected in the training process. The unit works by Elimination is analogous to the functionality of T-cells in biological processes by negative selection. It has been found that efficiency tends to increase with the addition of more datasets, this culminated in a 6% improvement in the identification rate of True Positive and True Negative thus maintaining an actual detection rate. 98.5% spam and ham identification score. The model has been correlated further with related models Studies and the outcome suggest that the proposed method results in an improvement of 2% to 15% in the right system. Spam and ham identification score.

Keywords: spam; ham; phishing; identification of anomalies; Negative range.

1. Introduction

For quite some time now, email has become an increasingly valuable contact tool, allowing virtually immediate exposure to every part of the globe through internet connections. Nearly 5 billion email accounts were actively in use in 2017, as reported by Tschabitscher [1], and this is projected to rise to over 5.5 billion by the end of 2019. The possibility that more than 270 billion emails are exchanged every day is also illustrated by Tschabitscher [1], but roughly 57% of these are only spam emails [1]. There are a range of current methods of machine learning and strategies that strongly mimic the filtering of spam or phishing emails by biological immune systems, but their efficiency has become a major concern. Most of the methods manage to efficiently prevent spam, but trade

They often restrict some of the emails that are not spam, classified as ham. This is a concern, since it may result in the consumer missing valuable details.

1.1. Common Threats

Various forms of email threats, such as email spoofing, phishing, and phishing variations, such as spear phishing, duplicate phishing, whaling, hidden

redirect, etc., are routinely bombarded by users worldwide. Email spoofing also includes forging the email header (The From section) such that a real person appears to have received the post. Email spoofing is a ploy used in spam campaigns and when they feel it is sent from someone they know; people prefer to open an email [2]. Email phishing is a type of spoofing that deceives the recipient with genuine messages [3]. To bypass anti-spam systems, malicious attackers have even tried to conceal the text behind images. It is a form of obfuscation whereby the message text is processed as a JPEG or GIF image and presented in the email. Which avoids the identification and blocking of spam messages by text-based spam filters?

1.2. An Email Architecture

The headers and the body of the email are made of emails. Next, the TCP/IP Header includes the IP address of the source and destination, then the SMTP envelope, containing the email transaction areas, and the email addresses of the source and destination (but this section is not accessible to the email clients); and then the SMTP headers, where the email addresses are stored.

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HUMAN ACTIVITY RECOGNIZATION USING CONVOLUTION NEURAL NETWORK

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ABSTRACT

Human improvement confirmation fuses mentioning times strategy information, assessed at inertial sensors, for example, accelerometers or whirligigs, into one of pre-portrayed works out. Beginning late, convolution neural system (CNN) has created itself as a surprising methodology for human improvement attestation, where convolution and pooling tasks are applied along the transient part of sensor signals. In the majority of existing work, 1D convolution development is applied to individual univariate time plan, while multi-sensors or multi-framework yield multivariate time game- plan. 2D convolution and pooling assignments are applied to multivariate time game-plan, so as to draw nearby reliance along both normal and spatial zones for uni-specific information, so it accomplishes predominant with less number of parameters stood apart from 1D activity. At any rate for multi-estimated information existing CNNs with 2D development handle various modalities similarly, which cause impedances between attributes from various modalities. In this paper, we present CNNs (CNN-pf and CNN-pff), particularly CNN-pff, for multi-separated information. We utilize both halfway weight sharing and full weight sharing for our CNN models with the objective that method express attributes likewise as common qualities crosswise over modalities are found from multi-detached (or multi-sensor) information and are unavoidably assembled in upper layers. Primers on benchmark datasets show the world class of our CNN models, stood apart from condition of enunciations of the human experience frameworks.

INTRODUCTION

Picture Processing and Machine Learning, the two hot cakes of tech world. Did you comprehend that we are the most archived age in history of humanity? Dependably a troublesome 1.78 million GB information gets made on the web. That is a great

deal of information and a critical projection that of information is pictures and annals. This is the spot robotized picture preparing and AI comes in. There is never has been an evidently incredible time to be a nerd.

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STOCK PRICE TREND FORECASTING USING SUPERVISED LEARNING METHODS

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Abstract:

One of the objectives of the research is to investigate a range of forecasting approaches for projecting future stock returns based on prior returns and numerical news indicators in order to construct a portfolio of various shares and diversify risk. We do this by gaining a grasp of the apparently chaotic market data via the use of supervised learning algorithms for stock price forecasts.

1. Introduction

It is hard to forecast the direction of the stock market, and there are a plethora of complex financial indicators to keep track of. Alternatively, the development of new technologies provides investors with the possibility to benefit continuously from the stock market while also supporting analysts in finding the most important signs in order to create more accurate estimates. Being able to identify market value is crucial for maximising profit while minimising risk when it comes to stock option

acquisitions since it allows you to maximise profit while decreasing risk. Following that, we'll go through the methodology section of the essay, in which we'll go over each step in detail, before concluding. As a result, we'll have graphical representations of our results, along with explanations for why they happened. Determine the total amount of money that will be spent on the project to finalise the scope of the project. During this session, we'll discuss how to lengthen the paper in order to get better results in the end.

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INDIAN SIGN LANGUAGE CLASSIFICATION AND RECOGNITION USING MACHINE LEARNING

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ABSTRACT: The discourse is regarded as a real illness. People with this disorder use different methods to interact with others. Various resources are required to interact with them. It would be really useful to create an application for the sign language for deaf people and sometimes people who don't recognise the sign language can interact easily. Our project aims at closing the communication divide through signs between regular, sour and dumb people. A paradigm based on perception in order to differentiate gestures from pictures is the key objective of this work. The rationale for usage of vision-based systems is that they provide a more simple and comprehensible way of communicating between a human and a computer. This research takes into consideration 46 separate gestures. We also used both the timing and spatiality of the video sequences in classifying gestures in sign language. Thus, for both time and space planning, we have used two separate methods. For the spatial features of the video sequences, we used the Inception model [14], the profound CNN (convolutionary neural network). CNN was trained in images in the video sequences of train results. We used RNN to train the model on time characteristics (recurring neural network). The CNN model was used to simulate a variety of predictions for each recording, educated for individual frames and layouts. The RNN has now been provided with this projection or pool layers of sequence outputs to training temporary functions. The set of data[7] is comprised of the gestures of Argentine sign language (LSA) with some 2,300 pictures in 46 motions. CNN has reached the exactness of the prediction for the RNN 93.3 percent and with pool layer results for the RNN 95.217 percent.

Keywords: Indian sign language, attribute extraction, KNN classification, CNN. Classification.

I. INTRODUCTION

Hand is a movement from any section of the body including the ears. Here for gesture recognition, we use image detection and computer vision. The way the computer understands human behaviors is recognized by the way. This helps people to interact instinctively with computers without direct interaction with mechanical devices. The sour and dumb society undertakes sign language acts. This community uses the sign language where music is not

accessible or where it is impossible to read or compose, but it also has a hope of hearing. Only through sign language will information be communicated with people at the moment. Sign language is commonly used by anyone because they cannot talk, but this is the best way to interact with the deaf and dumb culture. The wording of the symbol is the same as that of the spoken vocabulary.

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BREAST CANCER DETECTION WITH MACHINE LEARNING

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Abstract

According to the Breast Cancer Institute (BCI), breast cancer is one of the most dangerous forms of cancers that, if diagnosed and treated early enough, may be successfully treated for women all over the world. It is believed by medical specialists that detecting this cancer in its early stages can help save people's lives by preventing it from spreading. This website, which covers more than 120 distinct types of cancer and the genetic disorders that are connected with them, provides personalised therapy suggestions based on the individual's medical history. Machine learning algorithms are used to detect the vast majority of breast cancers, which accounts for the majority of cases. This paper presents an adaptive ensemble voting approach for newly diagnosed breast cancer that was developed using the Wisconsin Breast Cancer database and is based on a randomised controlled experiment that was conducted using the Wisconsin Breast Cancer database. The Wisconsin Breast Cancer database was used in the research for this paper. The goal of this research is to compare and explain how the ANN and logistic algorithms, when used in conjunction with ensemble machine learning algorithms for diagnosing breast cancer, generate greater outcomes when the number of variables is reduced. The Wisconsin Diagnosis Breast Cancer dataset, which was produced specifically for this study, was used in this investigation. For the sake of comparison, this study is being compared to other comparable studies that have previously been published. When ANN methodology and the logistic algorithm are coupled, they provide a classification accuracy rate of 98.50 percent when compared to another machine learning technique, as demonstrated by a comparison to another machine learning strategy (Figure 1).

1. INTRODUCTION

World-wide, cancer ranks first among all diseases in terms of mortality, with breast cancer ranking first among all cancers in terms of hazard to women. According to the American Cancer Society, breast cancer claims the lives of hundreds of people every year. The physical detection of breast cancer is time-consuming, and it is difficult for the physician to determine what stage of the sickness is being dealt with at any one moment. As a result, in recent years, the detection of cancer through the use of various

automated diagnostic technologies has gained growing importance and importance. In order to detect breast cancer, a range of algorithms and techniques are available, including the Support Vector Machine, Nave Bayes, Kernel Neural Network, and Convolution Neural Network, among others. It is the most recent algorithm in deep learning, and it is also the most recent algorithm in deep learning that is also utilised for classification. It is also the most recent algorithm in deep learning.

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Design, Structural and Thermal Analysis of Piston by Using Finite Element Analysis

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Abstract:

There is a certain piston design and its maximum gas pressure that was selected for this project. CATIA V5 solid modelling software will be used to produce a piston model for this project. ANSYS will be used to mesh and analyse the geometry. In order to examine piston input conditions and the analysis method, a comprehensive literature search was done. The crucial region of the piston is subjected to significant stresses while operating at high combustion gas pressures, which act as mechanical loads. A thorough static structural analysis is performed for a variety of loading conditions, such as the maximum gas pressure load. A comparison study is carried out in order to choose the best material. Material is never dominated by a comparative analysis. Pneumatic chambers, for example, use cylinders as mechanical components. Gas blowers, syphons, and motors that react. A cylinder seals up the upward movement inside a chamber, preventing any air from leaking out. The cylinder is a critical component of the engine and is subjected to significant mechanical and thermal stress in the automobile industry. Because the cylinder crown and cooling displays have such a large temperature difference, warm loads are begun in the cylinder. They are made of aluminium because of its low weight and heat conductivity. However, it is not recommended for use in high-temperature applications because to its poor hot strength and high development coefficient. To transfer power from the expanding gas to the barrel-shaped shaft, an interfacing bar and an extra segment pole are used in a motor's section bar or associating bar. For packing or removing liquid stored in chamber, syphons revolve around cylinder capacity and transmit power from driving rod to it. In the first stage, this investigation focuses on the main study of a standard cylinder made from aluminium composite. The next step is to focus research on an aluminium and cast iron cylinder. The third level of piston development should use lightweight, low-cost, and thermally safe materials. Verification of research findings by comparing them to more conventional sources

INTRODUCTION

The piston is a critical part of mechanical engineering because of its many applications. An internal combustion engine, a pneumatic cylinder, a hydraulic cylinder are all examples of mechanical systems that use pistons. Reciprocating pumps, gas compressors, pneumatic cylinders, and reciprocating engines all use pistons as mechanical components. Piston rings are used to keep the moving part of a cylinder

gastight, and they are used with a piston. An important part of a motor's crankshaft is the piston rod and/or rod connector, which transfers force from rising gas in the cylinder to the crankshaft. As a result of the piston's form and exposure to structural and thermal stresses, a research is necessary. Pneumatic and reciprocating engines, pumps, compressors, and gas compressors all use pistons as moving parts.

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TTS-BASED AI-BASED ASSISTANCE FOR VISUALLY IMPAIRED PEOPLE (TEXT TO SPEECH)

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ABSTRACT

Living alone in today's world is essential for every human being, but it becomes a challenge for those who have vision impairments. A person with a visual impairment is unable to detect or feel the outside environment. These people need certain resources in order to operate autonomously. With advancements in technology such as mobile connection and artificial intelligence, it became easier to maintain them in their daily lives. Our study involves using artificial intelligence, image recognition, and navigation to provide a workaround for individuals with visual disabilities. Our project is carried out by building a PI camera on a Raspberry Pi that guides them using TTS, a GPS module, and the use of a smartphone to traverse the site, as well as a sensor to identify obstructions. It can also analyze images and convert them into words, allowing them to communicate more effectively with the rest of the world.

1. INTRODUCTION

Visually impaired people describe a number of problems with existing technologies when it comes to connecting to printed text, including accuracy, mobility, and performance. We provide an intelligent technology that allows the vision impaired to correctly and efficiently read printed information. Citizens would utilize a camera-based help method for reading text documents in the planned experiment. The frame is equipped to estimate the distance of the item based on range in an embedded device developed on the Raspberry Pi board, a on board and an ultrasonic sensor.

DEFINITION OF THE PROBLEM AND A WORK PLAN

The next experiment necessitates the creation of a gadget that collects visual information from the pi monitor on the shoulder brace of a person with a vision impairment. The graphic data is transmitted to the Raspberry Pi microprocessor, which uses artificial intelligence to measure the visual text information in its audio format. Obstacles will be detected using an Ultra-Sonic sensor that works at shoulder height in a range of 8-10 cm. The ability to recognize dangers in close proximity enables the user to flee in their own path. While the API is running, a GPS device installed on the Raspberry Pi board transmits the user's location. When the maintainer sends a request letter, the Wi-Fi on-board transmits the location to the internet server.

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CROP YEILD PREDICTION USING ML

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ABSTRACT

In India's economy, agriculture is by far the most significant industry, and it has the greatest impact on the country's gross domestic product (GDP). An estimated 50 percent of the country's workforce is employed in the industry, which accounts for around 18 percent of the country's Gross Domestic Product (GDP). People in India have been engaged in agriculture for a long time, but the results have never been satisfactory owing to a variety of variables that influence crop productivity at different times of the year in different regions. A high agricultural production is required to meet the demands of the world's approximately 1.2 billion people in order to ensure that they are met. All of the variables that influence crop output are directly related to soil type, precipitation, seed quality, and the existence or lack of technical infrastructure, to name a few. To meet the increased demand, new technologies are required, and farmers must use their resources effectively by embracing new technology rather than relying on inefficient farming practises. The purpose of this project is to demonstrate how to develop a crop production forecast system using Data Mining methods. The dataset pertaining to agriculture was the topic of the investigation. Several classifiers, including the J48, LWL, LAD Tree, and IBK are used to forecast it. The performance of each classifier is evaluated by comparing its performance to the others using the WEKA tools for enhancing Python with machine learning performance (python with machine learning). In order to evaluate total performance, it is necessary to include Accuracy factors such as linear regression, as well as the accuracy of Random forest and KNN classifiers, were employed in this study, and one of them was the accuracy of linear regression. The overall performance of the classifiers is then assessed by comparing their Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), and Relative Absolute Error (RAE) values to the values of Root Mean Squared Error (RMSE) obtained from the training data (RAE). As a result, the technique will perform more correctly as the number of errors lowers. Classifiers are evaluated based on how well they perform in classification by making comparisons with one another.

1. INTRODUCTION

The purpose of information extraction and forecasting is to identify patterns in huge data sets. Information extraction and forecasting is the process of analysing, extracting, and predicting crucial information in order to identify patterns in the data. When businesses want to translate raw data from their customers into information that can be utilised to improve the efficiency and effectiveness of their operations, they employ this strategy. The pre-

processing and alteration of data is a critical component of the Data Mining process, and it accounts for a large portion of the total time spent on it. This process begins with the selection of data and continues until patterns are uncovered that may be used to forecast crucial insights. The data is then analysed further. It is necessary to perform two jobs during the preprocessing stage: outlier identification and the detection of missing data.

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FAKE JOB RECRUITMENT DETECTION USING MACHINE LEARNING

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ABSTRACT

It is proposed in this research that a computerised apparatus that makes use of artificial intelligence-based organising strategies in order to avoid deceptive job postings on the internet be developed. Various classifiers are used to check for misleading information on the internet, and the findings of those classifiers are analysed in order to develop the most effective business trick detection model that can be used in the field of information security. When searching for fake job advertisements amid a large number of legitimate job ads, this tool may be really helpful. Solitary classifiers and troupe classifiers, to name a few examples, are two important types of classifiers that are used in the process of spotting bogus job postings on the internet. In any event, the results of the trials demonstrate that aggregating classifiers outperform solo classifiers when it comes to detecting tricks in general.

1. INTRODUCTION

The usage of the "work trick" has become a new development in the area of Online Enrollment Fraud, and it has been highlighted as one of the most serious concerns that needs to be addressed (ORF). In recent years, job postings on the internet have grown in popularity, as job searchers have gotten more skilled at locating available positions on the internet. Extortionists, on the other hand, may take advantage of this notion in order to get money from job searchers, since they supply labour services in return for money to individuals who are looking for work prospects. In the case of an assumed organisation, for example, phoney occupation notifications may be transmitted as a consequence of the assumed organisation neglecting to pay attention to whether or not the occupation notifications they are issuing are legitimate in the first place. The development of a robotized system to identify false occupation post

recognitions and to alert people to the existence of such bogus occupation post recognitions has piqued the interest of some, with the goal of discouraging people from applying for jobs as a result of these phoney job advertisements. In order to identify fake posts, it is required to use an artificial intelligence approach, which makes use of a variety of characterization calculations to do this. As a result of this differentiation, consumers are alerted to the existence of fake occupation announcements, which are differentiated from the rest of the occupation announcements by use of an identifying device. Controlled learning calculation and arrangement processes are initially investigated as potential solutions to the challenge of distinguishing between bogus job advertising and legitimate job advertisements.

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ON OPTIMIZATION OF DEEP NETWORK USING ADAPTIVE LEARNING RATES

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Abstract

The developing complexity of deep learning architectures is ensuing in schooling time requiring weeks or maybe months. This sluggish education is due in aspect to “vanishing gradients,” wherein the gradients utilized by once more-propagation are rather massive for weights connecting deep layers (layers near the output layer), and quite small for shallow layers (close to the input layer); this outcomes in slow learning within the shallow layers. furthermore, it has moreover been confirmed that during especially non-convex troubles, which includes deep neural networks, there may be a proliferation of immoderate-mistakes low curvature saddle factors, which slows down learning dramatically [1]. on this paper, we strive to overcome the two above troubles via manner of presenting an optimization method for education deep neural networks which makes use of studying prices which may be every specific to each layer in the network and adaptive to the curvature of the feature, developing the gaining knowledge of charge at low curvature elements. This lets in us to hurry up learning in the shallow layers of the network and short break out excessive-errors low curvature saddle elements. We take a look at our approach on sizable image magnificence datasets which incorporates MNIST, CIFAR10 and ImageNet, and display that our method will boom accuracy further to reduces the required schooling time over giant algorithms.

I. INTRODUCTION

Deep neural networks have been extremely successful over the past few years, achieving state of the art performance on a large number of tasks such as image classification [2], face recognition [3], sentiment analysis [4], speech recognition [5], etc. One can spot a general trend in these papers: results tend to get better as the amount of training data increases, along with an increase in the complexity of the deep network architecture. However, increasingly complex deep networks can take weeks or months to train, even with high-performance hardware. Thus, there is a need for more efficient methods for training deep networks.

Deep neural networks learn high-level features by performing a sequence of non-linear transformations. Let our training data set A be composed of n data points $a_1, a_2, \dots, a_n \in \mathbb{R}^m$ and corresponding labels $B = \{b_i\}_{i=1}^n$. Let us consider a 3-layer network with activation function f . Let X_1 and X_2 denote the weights on each layer that we are trying to learn, i.e., X_1 denotes the weights between nodes of the first layer and the second layer, and X_2 denotes the weights between nodes of the second layer and the third layer. The learning problem for this specific example can be formulated as the following optimization problem:

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CHRONIC KIDNEY DISEASE PREDICTIONS USING MACHINE LEARNING MODELS

P.V.Sarath Chand¹, N.Ch.Ravi², Dr. T.Sreenivasulu³, Dr.Palla Karunakar⁴

ABSTRACT

When it comes to clinical disorders, chronic kidney disease (CKD) is an umbrella term that refers to a wide range of illnesses that deteriorate as kidney function degrades over time. It refers to a wide variety of medical conditions. The term "chronic renal failure" is sometimes used to describe this illness in some circles. Various factors, including genetic abnormalities in the kidneys and systemic illnesses that damage the kidneys, can contribute to chronic kidney disease. Depending on the underlying reason, it might express itself in a variety of ways. Worldwide, the number of people suffering from chronic kidney disease (CKD) is growing year after year, according to the World Health Organization. As defined by the World Health Organization, chronic kidney disease (CKD) is a worldwide public health concern with an increasing incidence and a vast geographic reach that affects individuals all over the world. GFR rises in the presence of renal failure needing dialysis, and it is widely regarded to be the most reliable overall indicator of kidney function in the general population. Heart disease (including high blood pressure and anaemia) and a variety of metabolic problems, to mention a few, are among the additional risk factors for kidney failure. Because of a statistical approach known as 10-fold cross-validation, the algorithms of logistic regression, support vector machines, random forest, and gradient boosting have all been trained and tested on real-world data. According to the F1measure gathered by the classifier after training, the accuracy of the Gradient Boosting classifier is 99.1 percent correct. In addition, we discovered that haemoglobin has a bigger significance for both random forest and gradient boosting in the diagnosis of chronic renal sickness than was previously believed to be the case, which is in direct opposition to previous notions.

1. INTRODUCTION

Long-term kidney disease (CKD) is a serious public health concern that affects individuals all over the world, but it is most widespread in poor and middle-income nations. Chronic kidney disease is caused by a buildup of waste in the kidneys. Eventually, it is caused by a buildup of waste products in the kidneys, which leads to renal failure. As with renal failure, one of the characteristics of chronic kidney disease (CKD) is that the kidney does not function as expected and is unable to filter blood adequately, as is the situation with chronic kidney disease (CKD). Chronical kidney disease (CKD), also known as

Chronic Kidney Disease (CKD), is a chronic kidney disease that affects around 10% of the world's population. A scarcity of inexpensive treatment options causes millions of deaths each year, with the number of deaths among the elderly growing in recent years as a result of a lack of available options. As documented by the International Society of Nephrology's Global Burden of Disease 2010 report, chronic kidney disease (CKD) is a significant cause of death around the world, with the number of fatalities increasing by 82.3 percent over the preceding two decades [1, 2].

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A Driving Decision Strategy(DDS) Based on Machine learning for an autonomous vehicle

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Abstract— The driving strategy of a modern autonomous car is based only on exterior elements (Pedestrians, road conditions, etc.) and does not take into account the vehicle's internal state. This work presents "A Driving Decision Strategy(DDS) Based on Machine Learning for an Autonomous Vehicle," which calculates the ideal strategy of an autonomous vehicle by assessing both external and internal aspects of the vehicle. It is an attempt to tackle the issue (consumable conditions, RPM levels etc.). Sensor data from cloud-stored cars is fed into the DDS, which develops a genetic algorithm to figure out the best course of action for an autonomous vehicle. The DDS was tested against MLP and RF neural network models in this study to ensure its validity. DDS had a loss rate that was 5 percent lower than current car gateways in the testing, and it was 40 percent quicker than MLP and 22 percent faster than RF at measuring RPM, speed, steering angle, and lane changes.

Autonomous Vehicles, Genetic Algorithm, Machine Learning, Driving Strategy

I.INTRODUCTION

The fourth stage of self-driving automobiles is now being developed by worldwide corporations. There are three layers of recognition, judgement, and control in self-driving automobiles, which are based on different ICT technologies. In the recognition stage, numerous sensors in cars, including as GPS, camera, and radar, are used to detect and collect information about the surrounding conditions. The driving strategy is determined at the judgement stage based on the information that has been gathered. When determining driving plans, this stage looks at the environment in which the vehicle is situated, as well as the goals it is trying to achieve. Upon completion of the control stage, the

vehicle takes control of its own speed, direction, and more. A self-driving car repeats the procedures of identification, judgement, and control on its own [1] to get to its destination.

Self-driving vehicles, on the other hand, are becoming better and better. It is possible that an increase in the number of these sensors would overwhelm the in-vehicle computer. In-vehicle computers are used by self-driving automobiles to process data gathered by sensors. Overload may slow down judgement and control as the quantity of calculated data grows..

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DEEP POSE AND HUMAN POSE ESTIMATION VIA NEURAL NETWORK

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ABSTRACT

Deep Neural Networks are used to assess an individual's posture, and we present a technique for doing so. Deep Neural Networks are used to assess an individual's posture (DNNs). Regarding the subject's body joints, it is argued that the pose estimation problem may be conceived of as a DNN-based regression problem in terms of the subject's posture. In this paper, it is proven how to design a cascade of such DNN predictors, which leads in high precision position predictions for the target location. Pose reasoning can be completed in its entirety with the help of this technique, which has a clear yet strong formulation that takes advantage of the most current breakthroughs in deep learning technology to do this. Using four academic benchmarks with diverse real-world photographs, we present a complete empirical analysis that reveals state-of-the-art or higher performance on four academic benchmarks, as proven by the findings of four academic benchmarks.

1. INTRODUCTION

Recent years have seen a substantial increase in interest from the computer vision community in the problem of human posture estimation, which may be described as the difficulty of localisation of human joints. On the other hand, some of the issues associated with this issue can be detected, such as forced articulations, tiny and hardly visible joints, occlusions, and the necessity to capture the surrounding environment. Based on historical evidence, it is clear that the vast majority of research into this subject has been motivated primarily by the first difficulty: the need to search over the vast space of all possible articulated positions in order to obtain meaningful findings. Model articulations are easy in part-based models, and a variety of models that are capable of efficient inference have been developed during the last several years. This trade-off must be acknowledged, even though the aforementioned

efficiency is achieved at the expense of limited expressiveness – the use of local detectors, which in many cases only reason about a single part; and, most importantly, the modelling of only a small subset of all interactions between body parts – in order to achieve the aforementioned efficiency. In spite of this knowledge, as indicated by the example, ways for thinking about posture in a holistic approach have been offered, with only sporadic success in real-world applications to yet. Throughout this research, we advocate for the development of a more comprehensive approach for estimating a human's posture. As a strategy for recognising objects, we make use of the most current breakthroughs in deep learning and provide an innovative classification algorithm based on Deep Neural Networks, which we call Deep Neural Network Classification (DNN).

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INTELLIGENT PERFORMANCE ANALYSIS AND STRATEGICAL SURVEY OF FINGER PRINT MATCHING SCHEME

M.Arya Bhanu¹, N.Ch.Ravi², Dr.M.Sreenivasulu³, Erugu Krishna⁴

Abstract: - In modern times, computer technology is growing immensely in the world and offers server and database handling techniques with multiple connectivity and support functions. These functions are very useful for all kinds of users on popular sites for their day-to-day purchases. However, in contrast to information security features, the issue generated by intruders or attackers is growing more and more, these types of people mainly aiming to breach the device authentication and hack the required data/information present inside the server/database, such that the data is easily stolen and accessible to others as well as there after the information is not listed as private In order to recover/resolve the problem of breaking the authentication, many writers proposed several methods and strategies, but still the opponent side is powerful enough to offer their full extent to difficult problems. The previous example discusses in depth with realistic evidence of problems with authentication breaking and its remedies, but these are constrained at some stage due to frequent pattern matching and choices for texture recognition. So, to solve these kinds of problems, the researchers/authors think that some comprehensive feature analysis scheme is required. A Finger Print Matching Scheme, or commonly called a Biometric Scheme, is the well-known and easiest way to provide proper authentication for all our apps, ERPs, servers, databases, etc., which analyses the proper finger print of users and provides an efficient authentication scheme to access the relevant characteristics of nature. In this review, the strategic analysis of previous works is explicitly outlined and described in depth compared to all other current features listed by various writers in different periods, regarding the best approach for solving these authentication problems.

Keywords: Biometric-Scheme, Matched Fingerprint, Pattern Matching and Identification, Authentication of Fingerprints, Proof of Fingerprints.

INTRODUCTION

With the introduction of electronic-bank-account-management, business-management, operational maintenance, smart-cards, as well as an intensified focus on protection such as data security kept/handled in various databases, programmed person distinguishing evidence has become a vital issue. In a broad range of standard civilized applications, involving the usage of travel permits (for example passports), mobile phones, ATMs as well as driver licenses, correct coded person distinguishing proof is currently needed. In view of the possibility that Stick's can be missed or speculated by a faker and the tokens may be

misplaced or stolen, classical mining-based (password or PIN) and token-based (travel permit, driver permit, and ID card) identifiable bits of evidence are inclined to blackmail. For egg, misrepresentation of MasterCard-Credit-Card alone currently adds up to more than laths and laths of USD annually [2]. Biometrics, which alludes to identifying a human in view of his or her physiological or behavioral features, has the potential to identify an accepted person and a sham reliably. It is important to operate for a biometric system in two modes: (a) validation mode and (b) evidence distinguishing mode.

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A Graph-Based Machine Learning Approach for Bot Detection

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Abstract—Bot detection using machine learning (ML), with network flow-level features, has been extensively studied in the literature. However, existing flow-based approaches typically incur a high computational overhead and do not completely capture the network communication patterns, which can expose additional aspects of malicious hosts. Recently, bot detection systems which leverage communication graph analysis using ML have gained attention to overcome these limitations. A graph-based approach is rather intuitive, as graphs are true representations of network communications. In this paper, we propose a two-phased, graph-based bot detection system which leverages both unsupervised and supervised ML. The first phase prunes presumable benign hosts, while the second phase achieves bot detection with high precision. Our system detects multiple types of bots and is robust to zero-day attacks. It also accommodates different network topologies and is suitable for large-scale data.

I. INTRODUCTION

Undoubtedly, organizations are constantly under security threats, which not only cost billions of dollars in damage and recovery, but also detrimentally affect their reputation. A botnet-assisted attack is a widely known threat to these organizations. According to the U.S. Federal Bureau of Investigation, “Botnets caused over \$9 billion in losses to U.S. victims and over \$110 billion globally.” The most infamous attack, Rustock, infected 1 million machines, sending up to 30 billion spam emails a day [1]. More recently, WannaCry resulted in data breach from over 230,000 computers in 150 countries [2]. Undeniably, in the face of a cyber arms race, attackers

constantly find clever ways to sabotage networks using botnets, most importantly via zero-day attacks [3]. A botnet is a collection of bots, agents in compromised hosts, controlled by botmasters via command and control (C2) channels. A malevolent adversary controls the bots through botmaster, which could be distributed across several agents that reside within or outside the network. Hence, bots can be used for tasks ranging from distributed denial-of-service (DDoS), to massive-scale spamming, to fraud and identity theft. While bots thrive for different sinister purposes, they exhibit a similar behavioral pattern when studied up-close.

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SCENARIO-BASED SIMULATION EXPERIMENTS AND METRICS FOR CERTIFICATE-BASED AUTHENTICATION IN MANETS

P.V.Sarath Chand¹, Dr.M.Bal Raju², B.Venkteswarlu³, Dr.Palla.Karunakar Reddy⁴

ABSTRACT: - In wired networks the certificate-based authentication is well studied. Adapting certificate authentication protocols for motive ad hoc networks (MANETs) is, though, a non-trivial job, primarily because there is generally no set infrastructure or centralized management in a MANET as opposed to traditional wired networks. For example, a traditional authentication scheme based on certificates uses a set trustworthy Certificate Authority (CA) to establish, distribute, renew, and revoke certificates. In the MANET method it is normally not feasible to incorporate such a fixed unified CA in the network due to problems including node versatility, restricted wireless media and regular connection failures. A variety of ways to solve the particular problem of applying certificate-based methods for remote authentication on mobile ad hoc networks is suggested. Our contribution is twofold in this paper. We first analysis the specifications of a protected distributed authentication scheme for MANETs and then review some of the current certificate-based authentication systems, in the sense of distributed authentication, by examining their features including pros and cons. Finally, a set of modeling tests and metrics on the situation was proposed to test these characteristics.

Key Words: -Ad hoc networks and cameras, authentication, measurement, emulation.

1. Introduction

Mobile Ad hoc networks (MANETs), partially due to the possible usage of MANETs in various apps, have gained significantly greater attention. However, the usage of these networks presents many complicated problems because of the complex existence of nodes, the random topology, the restricted wireless range of nodes and communication errors. Since all nodes in the network operate together to relay information, the wireless channel is vulnerable to active and passive attacks by malicious nodes, such as service denial, eavesdropping, spot-spoofing, etc. The design of

encryption in these networks is therefore of prime importance.

Confidentiality, honesty, authenticity, availability and non-reputability are the five elements of a protection system. Authenticity is, thus, the most critical question, because an authenticity infringement contributes to a system-wide compromise. The public key management scheme that uses certificates is one of the commonly used authentication methods in traditional wired networks.

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EXPERIMENTAL STRATEGIES OF APPLYING STRONG AUTHENTICATION USING BIOMETRIC FINGERPRINT MATCHING PROCEDURES USING MSFPBT

E.Muralidhar Reddy¹,B.Venkateshwarlu²,N.Ch.Raju³,Dr.M.Sreenivasulu⁴

Abstract: - Through strengthening the authentication concepts utilizing the Biometric-Fingerprint Matching System, the key purpose of this strategy is to improve the protection features of identity management and security realms. Many Fingerprint matching systems are available in previous approaches to provide the answer for authentication principles, but all are at any degree of possibility, nobody can guarantee that the applied system is entirely qualified for authentication requirements. This sort of variance is induced by many factors, such as fingerprint distortions, adjustments of the vein form, thinner ridges, and so on. The proven realistic methods are capable of delivering solutions focused on each of the above-mentioned issues to produce the best outcomes, but a new technique is needed to solve the all-mentioned problems and ensure that our proposed approach is entirely qualified to execute the authentication operations based on Biometric-Fingerprint more effectively compared to other frameworks. The suggested methodology is focused on the study of three specific level features present in all Finger-Print cores, such as world, neighborhood and local features, in which the proposed algorithm will execute an effective matching scheme and the current approach is referred to as the Multilevel Structural Fingerprint Bank Technique (MSFPBT). The MSFPBT analyses the first two levels of characteristics focused on the location and ridge inclination of an area with respect to the center and its neighboring areas, respectively, where the local characteristics of curvature and minutiae of its ridges of the region are represented as finished. At the point of measurement, the next stage of local characteristics is dynamically evaluated and generates the outcome dependent on the cumulative outcome of the three characteristics analyzed. The proposed MSFPBT algorithm also recognizes distorted/affected fingerprints for processing, which identifies and corrects skin distortion based on local and global feature cores based on an input test image. The experimental findings indicate that the current Biometric method is ideal for more accurately recognizing fingerprints and reducing the false schema.

Keywords: Multilevel Structural Fingerprint Bank Methodology, MSFPBT, Mixing, Orientation, Local and Global Characteristics of Biometric-Fingerprint.

INTRODUCTION

While systematic developments in Fingerprint Recognition have advanced rapidly in the last 40 years, there are still a few study problems for testing, for illustration, perceiving low-quality fingerprints [1] [2]. As sensed in the FVC2006[2][3][4], Fingerprint matcher is highly vulnerable to image/image consistency, where the coordinating/matching performance of the same

measurement fluctuates basically across multiple databases owing to the variation of image/image quality. As seen in NIST-directed creativity tests, the gap between the accuracy of plain, twisted and dormant Fingerprintcoordination/matching is considerably greater [4].

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Recommendations for the Diagnosis of Nutrient Deficiency Syndromes in Plant Leaf Imagery through DIGITAL IMAGING PROCESSING are presented.

S.Raju¹,Bandam Naresh²,P.V.Sarath Chand³,Raju Anthoit⁴,

Abstract v vvvvvvvvvvvvvvvvv

Thirteen different mineral nutrients are required for plant development and survival. A plant's development might be stunted or even stunted to death if it lacks one or more of these essential nutrients. As a result, a system for continuously checking the nutritional status of plants is crucial for increasing productivity and improving crop quality. The signs of a deficit might be detected by a diagnostic system that uses digital image processing rather than the human eye. The farmers will be able to take corrective measures sooner rather than later. Image processing methods are reviewed in this research to help identify nutrient deficiencies in plants.

Keywords: Mathematical Morphology; Color Segmentation; Color Feature Extraction; Classifier; Color

INTRODUCTION

Plants and crops need a total of 13 mineral nutrients in order to thrive and flourish. The earth provides them with the nutrition they need. Growth and quality are negatively impacted by a lack of essential nutrients. Thus, the importance of mineral nutrient status in agriculture and farming cannot be overstated. Leaf signs of nutrient insufficiency are typical in plants and crops. These signs include interveinal chlorosis, marginal chlorosis, uniform chlorosis, necrosis, deformed margins, and a decrease in the leaf's diameter. The deficiency nutrient may

differ even when comparable symptoms are evident in both old and young leaves. Figure 1 displays some of the leaf signs of plant visual impairment. The mineral nutrients are broken down into macro and micro nutrients.. macronutrients and micronutrients are essential for the survival of plants. Carbon, hydrogen, oxygen, sulphur and phosphorus are all macronutrients. Boron, Copper, Iron, Chloride, Manganese, Molybdenum, and Zinc are examples of micronutrients.

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Development in Reinforced Concrete Retrofitting Methods and Technology

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Abstract:

New technologies and materials have been developed and put to use throughout history to overcome the limits of previous ones. Because of the present coal regulations, many seismically vulnerable reinforced concrete buildings cannot resist earthquakes. Additionally, the seismic waves Due to a design flaw, construction flaw, increased loads, and the behaviour of existing structures are all impacted. A number of recent earthquakes have clearly shown the urgent need for structural upgrading and strengthening. A major update is one of the greatest solutions for protecting a building against future earthquakes or other natural disasters, such as hurricanes or floods. The renovation lessens the structure's vulnerability to damage in the event of an earthquake in the near future. It seeks to strengthen a framework. Be sure you adhere to current seismic design standards. A lot of effort has been put into developing new strategies to improve the seismic performance of buildings in recent years. In relation to constructions. The purpose of this article is to offer an overview of different new and cost-effective methods. Reinforcement of damaged buildings by the use of retrofit methods. In order to improve the performance of any building, a concept known as seismic construction protection has been developed. Future quakes are expected. Future quakes are expected. There have been several earthquakes in India of varying magnitudes lately, resulting in a significant loss of life and property. Structural repairs may benefit from the use of new materials and procedures. Existing buildings that have been damaged or unaffected by earthquakes need to be reinforced. A structural engineer's primary goal is to reconstruct the structures as quickly and effectively as feasible. In order to successfully restore a certain building, the correct materials, methods, and processes were crucial. It is clear that innovative structural restoration methods offer several benefits over traditional methods. The selection of materials for repair operations, such as steel and reinforced fibre polymers, was mentioned in certain instructions for this study. Numerous factors, seen from a variety of angles, influence the material and method selection process. The amount of money needed, the suitability of the materials, and their general applicability Repairs to buildings that have been damaged or destroyed. Standard repair materials, appropriate technology, manufacturing and conservation and preservation are used in accordance with the project's goals. Fire safety, geotechnical safety, and other similar technical factors may be part of a rehabilitation project. Environmental factors such as water penetration and storm damage may have an impact on the structural integrity of a building. Treatments, rehabilitation, epoxy, cracks, corrosion, prevention, and retrofitting are some of the key words. There are a variety of different types of beam armoring available, including reinforced polymer fibre sleeves, steel sleeves, and concrete sleeves.

Introduction

The preservation of a historic building is described as the use of methods to preserve the structure's present shape, integrity, and materials. In order to maintain the historical, cultural, or architectural significance that the property has, it is necessary to undergo rehabilitation in order to turn it into a usable new property. When a property is restored to its original

state, it is called restoration. The term "rebuilding" refers to the act of re-creating a property. For rehabilitation, it is necessary to identify the desired outcomes in advance and to gather existing building data. Rehab-focused design. The present retrofitting approach is chosen based on its current state of affairs.

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Predicting Cyberbullying on Social Media in the Big Data Era Using Machine Learning Algorithms: Review of Literature and Open Challenges

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ABSTRACT

It wasn't until the advent of information and communication technology (ICT) that social contacts began to expand beyond geographical bounds. With the recent advancements in communication technology, the time and space constraints of conventional communication are no longer an issue. They have ushered in a new age of user-generated content, online networks of people, and statistics on human activity. Social media (SM) platforms, in particular, have been misused to develop a new type of anger and violence that happens only online. This study examines a brand-new method for displaying hostile conduct on social media websites. The development of predictive algorithms to combat aggressive behaviour in SM is also explained in this section. Cyberbullying prediction models in SM have a number of challenges, which we address in our evaluation of cyberbullying prediction models. When it comes to cyberbullying detection, this document gives an overview of the whole procedure. When it comes to predicting cyberbullying behaviours, several machine learning methods are being used, however the main focus is on feature selection techniques and their subsequent application to data collecting and feature engineering. New study avenues have also been identified as a result of the highlighted concerns and limitations.

INDEX TERM Big data, cyberbullying, cybercrime, human aggressive behavior, machine learning, online social network, social media, text classification.

INTRODUCTION

To better predict and detect the detrimental consequences of big data, researchers with limited resources may employ machine or deep learning methods [1]. People and human behaviour, especially cyberbullying [3] are covered extensively. Although it's now feasible to do a massive data analysis, it may also reveal previously unreachable knowledge using deep learning from this acquisition. If [1] is the case, then Big data analytics has improved the quality of social media and other human-related data sources (SM). Even the capability of foreseeing the future has become a fact of everyday life. We may use machine learning algorithms to analyse SM data and integrate it with huge data in order to predict the future of different algorithms. A method for detecting and preventing hostile behaviour must be devised by analysing data on human behaviour and

interactivity. To ensure this article was approved for publication, Kathiravan Srinivasan, the article's associate editor, was in charge of supervising its examination and approval. theorem fusion, many faces and angles, and as well as methodologies drawn from a wide range of academic fields. The availability of large-scale information generates new research problems, novel computational tools, transdisciplinary approaches, and excellent opportunities to statistically investigate many vital concerns. For example, traditional statistical techniques are difficult to scale and are inaccurate in this context. Structured data on human behaviour and small-scale human networks are often employed to assist these tactics in practise (traditional social networks). As a consequence, implementing these strategies on massive online social networks is fraught with difficulties (OSN). Due to OSNs' fast growth, they both encourage and facilitate the spread of violent behaviour.

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EXPERIMENTAL STUDY OF USER REVOCATION AND DYNAMIC OPERATIONS OVER CLOUD SERVER

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ABSTRACT: -We would recognize problems in the Cloud-based protection environment and will offer strategies for understanding the current research work on different access management frameworks and the expanded HCP-ABE architecture consists of four Data Owner (DO), Data Consumer (DU), Cloud Service Provider and Attribute Authority (AA), Data Owner outsource sensate. This paper offers potential alternatives for secrecy, honesty, effective user revocation and complex cloud storage operations. The experimental findings indicate a 15% reduction in the sophistication of the schema and the inputs to this study are special and considered to be expanded approaches to enhance data protection and to facilitate effective user revocation and interactive data operations.

Keywords: HCP-ABE, CP-ABE, ACP Access Check Regulation.

I. INTRODUCTION

Cloud compute ring is an increasing paradigm in which computational capabilities available on the Internet as elastic, on-demand (Web) platforms become more persistent in everyday livelihood. An association that utilizes internet resources has to use huge quantities of capital for technology to support viable customers, not an issue for major enterprises but in the affordability of small to medium-sized firms or companies the enormous system has a number of challenges, such as computer breakdown, hard drive sounds, program glitches etc. For such a group, this may be a huge concern. The ultimate solution to this problem is cloud computing. An organization can rely on a cloud provider to do this instead of purchasing, installing and running its own systems. Cloud computing main industry players such as Google, Amazon and Microsoft etc., these vendors develop innovative company and organizational structures that permit consumers to

compensate for their whole services, not make massive upfront expenditures. Cloud computing is a paradigm where resources or services (infrastructure, platform, software and databases) supplied over the web can be accessed as a service wherever, and when you are in need of, computing power in the field of computing infrastructure, application and business processes. Because of its versatility and resources, many people move to the cloud in four way, individually, publicly, hybrid and in group clouds to avoid local pressures until data is outsourced to the cloud to every consumer, however due to protection concerns outsourced data must be secured until being put in the cloud. Much of the recent literature centered on key management problems and rigid access protocols, but the Access Control mechanism can design constructive solutions because of the usage complexities. Help for dynamic access control and operations the policy-attribute-based encoding homographic cipher text (HCP-ABE) scheme is planned.

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STRATEGICAL COMPARISON OF BIOMETRIC-FINGERPRINT MATCHING SCHEME WITH FINGER PRINT BANK ALGORITHM AND MSFPBT

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Abstract: -Digital identity management is one of the main challenges which need a lot of authentication processes to handle day-to-day operations through the data management portal. To tolerate and overcome many authentication and access-control challenges are generated day-by-day, for this a powerful authentication procedure protection scheme is needed. Finger-Print Matching is the well-known and most adequate Biometric-based authentication scheme, but several scholars and writers have suggested many algorithms and applications to show its drawbacks and advantages. The description in this paper explicitly reveals the operation of the Fingerprint Matching Scheme with sound rational evidence centered on two different algorithms, such as the Finger Print Bank Algorithm (FPBA) and the Multilevel Structural Fingerprint Bank Technique (MSFPBT). The Finger Print Bank Algorithm (FPBA) utilizes powerful finger print matching rules to align the right finger print correctly and provides the user with a Boolean response to advise the user whether or not to continue further. In order to remove the internal and global key information of it and extract the raw code from it, the FPBA uses powerful filtering schemes to process the finger print and match it with the finger print already recorded. Centered on three main fingerprint characteristics, such as national, neighborhood and local features, the Multilevel Structural Fingerprint Bank Technique operates and functions with Finger-Print Matching. The MSFPBT analyses the first two levels of characteristics focused on the location and ridge inclination of an area with respect to the centre and its neighboring areas, respectively, where the local characteristics of curvature and minutiae of its ridges of the region are represented as finished. At the point of measurement, the next stage of local characteristics is dynamically evaluated and generates the outcome dependent on the cumulative outcome of the three characteristics analyzed. The proposed MSFPBT algorithm also recognizes distorted/affected fingerprints for processing, which identifies and corrects skin distortion based on local and global feature cores based on an input test image. This paper specifically analyses the complete experimental strategies of the two algorithms listed and shows how the MSFPBT is stronger than FPBA.

Keywords: Finger Print Bank Algorithm, FPBA, Multilevel Methodology of Structural Fingerprint Bank, MSFPBT, Mixing, Orientation, Local and Global Features of Biometric Fingerprint.

INTRODUCTION

Via three distinct sub-spaces, the Finger-Print Matching Scheme problems are defined and retrieved, such as: (i) Finger-Print Registration, (ii) Finger-Print Confirmation/Affirmation and (iii) Finger-Print Recognition [5][7][8]. In addition, the finger impression identification here is evaded as an FPBA-Finger Print Bank Algorithm, which is a systemic and evidence-based method, as interesting in comparison to the manual approach for Finger-Print recognition by authorities. Affirmation is often utilized for useful identification, where the reality is to protect particular entities from using a comparable name. The special affirmation of Finger-Print is to

verify one person's authenticity through his/her extraordinary particular finger impression. There is an adjusted relation for this situation and the structure sees a man in the distinctive validation mode by glancing over the designs of the amazing amount of consumers for a match in the database [8] [9]. In this sense, with the setting up of a man's persona, the arrangement leads us to multiple relations. Some strategies for Finger-Print preparation are used by both verifying and identifying confirmation, as seen in subsection [7] [9] [10]. The following are the numerous Finger-Print synchronization techniques analyzed in the past: (i) Minutiae-Finding, (ii) Pattern-Matching/Ridge Attribute Retrieval,

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HYBRID ERA ON BIG DATA ANALYTICS PLATFORMS

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Abstract: - The key purpose of this paper is to provide an unbiased assessment of different systems appropriate for vast processing of facts. Numerous technological systems available for broad knowledge analytics are analysed in this paper and comprehensive reviews are addressed on their strengths and limitations. Similarly, a broad collection of guidelines for adapting knowledge mining for massive statistical research was addressed with its suitability to cope with actual-global computing problems. Through the successful introduction of these well developed and commonly utilized knowledge mining algorithms, the destiny patterns of big information processing and analysis can be anticipated to focus on the strengths of the technological frameworks and platforms available. Hybrid strategies (integration of or broader structures) can be best adapted for a chosen knowledge mining algorithm which can be well adaptable and can be processed in real time. Keywords huge facts; mass data analytics; cloud computing; mining statistics; computer research; systems of large facts;

1. INTRODUCTION

This is an era of big, complicated numbers, that is to say massive figures. Altering almost all conventional platforms for data evaluation plays a dominant function. Hardware computer scale is an advanced analysis of large quantities. It is very challenging to select the right hardware/software platform for big data evaluation as all the requirements are to be met within a given time span. Various large factual constructs with an exclusive set of characteristics are available, and a thorough comprehension of the expertise of these application categories is needed to choose appropriate frameworks. In fact, the key feature of the adaptability of the framework to handle enhanced statistical analysis needs when generating empirical answers on a selected platform [1]. In this view, the most widely applied analysis of mass recording systems is conducted and their capabilities and weaknesses are addressed. Although the decision on the correct platform is normally significant, the user must take care of its software/algorithms favourites, time for results, scale of process information, the crucial version design: iterative or unique releases, enlarging data processing capability in future, speed of log switch, kind of facts, management of hardware catastrophes A large range of high-speed, higspeed

and very wide datasets are available. The use of common tools, methods and hardware/device programs is an outstanding business to work with such vital statistics. Great facts refer to the large number of diverse databases of several heterogeneous properties that are increasingly growing. Rapid network expansion, record storage, data collection limitations in almost all fields of study, biological science and engineering are now growing at a good price. These data sets are currently supplied and used with the support of distributed frameworks, which store record factors in several places and collects them via the programming framework [3], through creating large numbers of statistics. In certain situations, statistics should not be stored immediately in a database since this modern age enables the data to be analysed as it is being generated [4]. The big intelligence span currently involves numerous sources of knowledge, such as tweets, photographs, interactions between social networks, tool numbers, video/voice records and capture with more traditional, dependent performance. Facts. Information. Production of this kind of fact is the easiest conceivable because of the characteristics of the present vast mathematical and computational era [5].

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A LITERATURE REVIEW ON PRIVACY PRESERVING AND SECURITY PUBLIC AUDITING FOR CONTENT STORAGE IN CLOUD ENVIRONMENT

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Abstract: -Cloud storage is the means of exchanging over the internet different services. As a service customer, the storage may be used to store and transfer data remotely. Data management in the cloud has many advantages over local data storage. Without thinking about the need to check its accuracy, consumers should be allowed to access the data in cloud storage as though the knowledge were local. But providing data transparency is a problem. Cloud storage public audit functionality enables users to ask third-party auditor (TPA) to validate data honesty. This paper addresses numerous privacy-related problems as consumers store data in the cloud. We would examine the methods of supplying cloud service privacy and protection here. Safe cloud computing services may be introduced by delivering privacy-preserving public auditing using ring signature processes.

Keywords: -Cloud Computing, integrity, public auditing, privacy preserving.

I. INTRODUCTION

Cloud infrastructure is one of the fastest evolving innovations commonly embraced by many small IT companies as the cloud allows them to boost their industries as appropriate, without the need for a lot of money and time. Cloud computing relates to the method of exchanging services over the internet, such as hardware, applications and production platforms. It provides On-Demand network access to dynamically configurable computing services in a pooled pool. All aspects in the as-a-service paradigm are supported by cloud infrastructure. Storage as a Service is a business concept in which a big organization leases space to a smaller company or entity in their storage infrastructure. As per their use, the smaller business or individual consumers compensate for the storage room. The requirement for manual backup is totally minimized by utilizing cloud storage. It also lowers the expense of hardware, applications and personal repair expenditure [1]. Users may access data from anywhere, over the internet, at any time. They're more effective than computers for personal computing. So, the way the data is processed has been altered. Instead of being processed and managed by consumers, the data is either either consolidated or outsourced to cloud service companies. It introduces daunting security risks to the outsourced data of customers, in addition to

these benefits.

It can be cheap and powerful to access from anywhere while the data is processed in the cloud, however the data can face several problems such as confidentiality, safety, and transparency due to attacks or failures. This can often contribute to an irretrievable failure of user details. The integrity of data in the cloud can be challenging for consumers to verify. So, they depend on the providers of cloud services. But cloud service providers cannot have full confidentiality, data accuracy [2] when processing massive volumes of information. They can also exploit the data of users which may place details at risk. Inside the cloud service, certain privacy and protection threats on customer data exist when they typically have full access to stored data and can steal the data to offer to external parties in order to obtain benefit. Users will not be conscious of their data misuse, because users may not be told about it by cloud service providers. In order to verify the quality and correctness of data, cloud service providers must allow users to inspect their data. User data auditing could also allow users to monitor and evaluate any actions that threaten the integrity of the data [3]. The audit should report on security violations, access to records, etc. Users have to choose the best stable cloud storage provider and encrypt data to protect data from others before saving it in the cloud.

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A Conceptual Framework for Bus Arrival Prediction Based on Spark Framework and Machine Learning Approaches

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Abstract— As of recently, Chiang Mai's public transit options have expanded to include a new kind of transportation: buses. Because they are not confidence in the accuracy of the bus timetable, individuals are reluctant to board the bus. Data pre-processing in real-time, the number of data inputs, and the degree of forecast accuracy all contribute to the difficulty of solving this challenge. Statistical and machine-learning techniques have been used in previous bus arrival time prediction research. However, earlier machine-learning prediction algorithms seldom take the time series issue into account. In addition, some models only examine tiny quantities of data, resulting in poor accuracy and slow forecast speed. This report looked at the last five years of research on bus arrival time prediction. Bus arrival time prediction is discussed in depth in this work, which identifies current research needs as well as real-world applications. The foundation for the study, as well as probable future trends and difficulties, were discussed.

Predictive modelling, machine learning, and software engineering are all terms associated with intelligent public transportation.

I. INTRODUCTION

More and more individuals are able to afford their own cars as a result of rising economic levels. From 2005 to 2015, the number of registered motor vehicles in Thailand grew each year [1]. [1] [2] Traffic congestion, pollution, and even car accidents may have a detrimental influence on people's life as the number of cars increases.

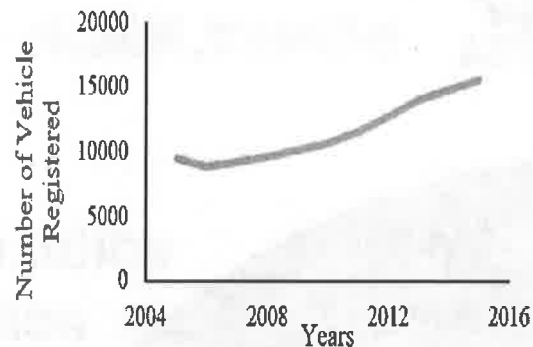


Fig. 1. Thailand's motor vehicle registered from 2005 to 2015

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Patient Treatment Time Prediction Algorithm for Hospital Queuing- Recommendation in a Big Data Environment

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Abstract— One of the most difficult problems hospitals confront is effectively managing the patient queue in order to decrease patient wait times and congestion. Patients' irritation is exacerbated when they are forced to wait for lengthy periods of time for no good reason. The amount of time a patient must wait depends on how long the line behind him is. Patients would find it more convenient and preferred if they could get real-time information about expected wait times and the most efficient treatment plans through a mobile application. Because of this, we have developed a Patient Treatment Time Prediction (PTTP) method to estimate how long a patient will have to wait before receiving treatment. For each job, we develop a patient treatment time model based on real-world patient data collected from multiple hospitals. The treatment time for each patient in the current queue of each job is anticipated based on this large-scale, realistic dataset. A Hospital Queuing-Recommendation (HQR) system is created based on the estimated wait time. HQR determines the most cost-effective and time-saving treatment option for each patient. The PTTP algorithm and HQR system are required to respond quickly and efficiently because of the vast, realistic dataset and the need for real-time reaction. The National Supercomputing Center in Changsha (NSCC) uses an Apache Spark-based cloud solution to meet the aforementioned aims. Patients' wait times in hospitals may be reduced by recommending an appropriate treatment plan based on extensive testing and simulation findings.

INTRODUCTION

Motivation

In most hospitals, there is now an overcrowding problem and no efficient way to manage the patient queues. Waiting time forecast for patients is a hard task since each patient may need a variety of procedures, such as a blood test or glucose level check or an ultrasound, throughout their treatment. Treatment tasks or tasks are used in this work to refer to each of these stages and processes. It is very difficult to forecast how long a certain therapy job will take for each individual patient, making time estimation and recommendation extremely difficult. According to their health, a patient is often obliged to undertake various types of exams, inspections, and tests (together referred to as chores). In this instance, each patient may be forced to do more than one activity. If one job is reliant, another may have to wait until that work is completed. Most patients are need to take medication. Hunan University's College of Computer Science and Electronic Engineering, together with the National Supercomputing Center in Changsha, Hunan, Changsha, 410082, China, is home to the research of Jianguo Chen, Ken Li, Zhu Tang,

and Keqin Li. Kenli Li, klk@hnu.edu.cn, is the author's point of contact. The COMSATS Institute of Information Technology, Islamabad, Pakistan, and Qatar University, Qatar are both home to Kashif Bilal. • Keqin Li is also affiliated with the State University of New York's Department of Computer Science in New Paltz, NY 12561, the United States. patiently wait in line for seemingly interminable lengths of time in order to get treatment. These guidelines are aimed at assisting hospitals in planning each queue of treatment chores, avoiding overcrowding, and ensuring that patients can finish their jobs on time and without interruption. To construct a patient treatment time consumption model, we draw on a wealth of real-world hospital data. Based on crucial characteristics such as patient treatment start time, finish time, patient age and detail treatment content for each separate job are assessed thoroughly and rigorously. Waiting durations vary dependent on a patient's health and the procedures they had during therapy. FIG. 1 depicts Fig. 1's patient treatment and wait process. Patient 1, Patient 2, and Patient 3 are shown in Fig. 1, along with the therapy activities that must be completed for each of them. Prior to X-rays, surgery or bandaging can't be carried out, for example.

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Implement of Smart Health Care Monitoring System using Mobile IoT and Cloud Computing Technologies

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ABSTRACT: *Recently, many research works were interested in combining cloud computing and IoT to design systems for smart health care. Many authors have highlighted the benefits of using cloud computing with IoT and proposed a cloud infrastructure to extend the limited resources of the sensors and to facilitate the management of the sensor-centric applications in many domains. However, about MCloT convergence, there are fewer research works. One of the projects is about a developed platform based on MCloT where sensors can interact with a mobile device which has access to the cloud via Internet using Bluetooth. Based on restful web services, the framework is feasible on resource constrained devices. Our work aims basically to come up with a general service architecture for smart healthcare monitoring application, that combines the features of mobile devices, sensors, and cloud computing to offer to the user the enhanced services that are accessible anywhere while guaranteeing scalability and security. Our general service architecture to build a network for health care applications that generated data is stored in the cloud our mobile application will show the accurate results on user dashboard of their smartphones.*

Keywords: *MCloT, Cloud Computing, sensors, smart phone, healthcare networks.*

I. INTRODUCTION

Internet of thing is being popular now a day. It is being interconnected with many devices like physical devices and smart devices. The growth of the internet is going to change the world with the IoT devices which allows the innovative of a person ideas presenting to this world. The Internet of Things (IoT) is a structure which between relates the contraptions which figures and the machines. People that gives the unique identifiers and it has the limit of moving the data in a framework that does not obliges human to human and human to PC collaboration. Kevin Ashton is a kindred advocate besides the official of Auto-ID Center at MIT and he at first decided the Internet of Things in a presentation in 1999. In spite of the way that the IoT was not showed in early years and the Internet of Things has been being created from various years. The main web are given an outline, a Coke machine at Carnegie Melon University in the 1980s. The product designer will take up with the machine. Since, the IOT has being huge from the guest remain with the commonplace development, for instance, Radio Frequency Identification (RFID), Wireless Sensor Network, Bluetooth. They are misusing the availability in Cloud Computing. The Cloud Computing giving us a Smart City with various machines. In 2015, the improvement in web of things had machine to machine classes. per Gartner Research: "4.9 billion related things being utilized as a part of 2015 ... and will accomplish 20.8 billion by 2020." In any cause the world doesn't extensions to the 50 billion devices by 2020. By then there will be different devices will be come to 2.5 billion devices that shows around 5% of all devices are related. The data will interface various contraptions which will generate 10 million terabytes for every month. Here after the 5% data which is related the things will create.

Distributed computing could be a general term for the conveyance of expedited administrations over the net. Distributed computing could be a style of computation that depends on sharing registering assets rather than having neighborhood servers or individual gadgets to handle applications. Distributed computing is analogous to matrix computation, a kind of registering wherever unused getting ready cycles of all PCs during a system area unit outfits to tackle problems overly serious for any stay solitary machine. In distributed computing, the word cloud (additionally declared as "the cloud") is employed as Associate in Nursing illustration for "the net," that the expression distributed computing signifies "a quite net based mostly computation," wherever distinctive administrations, as an example, servers, reposition Associate in Nursing applications area unit sent to an association's PCs and gadgets through the net.

The quantifies for interfacing the PC systems and the item anticipated that would make conveyed processing work are not totally described at present time, leaving numerous associations to portray their own specific circulated figuring advancements. Appropriated processing structures offered by associations, like IBM's "Blue Cloud" progresses for example, rely on upon open benchmarks and open source programming which interface together PCs that are used to pass on Web 2.0 limits like mix or compact exchange. Cloud-based applications can be up and running in days or weeks, and they cost less. With a cloud application, you just open a program, sign in, change the application, and start using it. Associations are running an extensive variety of utilizations in the cloud, like customer relationship organization (CRM), HR, accounting, and significantly more. A segment of the world's greatest associations moved their applications to the cloud with salesforce.com after altogether testing the security and steady nature of our structure. Dispersed processing and Web of Things (IoT), two out and out various headways, are both starting now a bit of our life.

K-Means Clustering of Spinal Cord MRI Abnormality Feature Extraction

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Abstract:

Research on Medical Image presents an efficient platform for automated analysis and identification of any deformations in a given medical image data collection, particularly in the Spinal Cord, for more effective and better comprehension of the diagnosis. Tumors, disc hernias, fractures, edoema, and other abnormalities of the spinal cord may be discovered using a variety of medical imaging modalities, including MRI, CT, and fMRI. Fast and reliable analysis of the MRI imaging of the spinal cord using an Automated Decision Support System (ADS) is shown in this study. There are two stages to this process: preparation and execution. Using histograms, the first step is to determine whether any abnormality characteristics or distortions are present in the provided picture. This is the second phase, in which the MRI picture is clustered to determine the depth at which the calcification is present. The algorithm's performance and the amount of time it takes to finish each cluster phase are examined. To further demonstrate its complete accuracy, the algorithm's efficiency is being monitored.

INTRODUCTION

The spinal cord is a vital part of human anatomy. The significance of the spinal cord is often overlooked. It is the primary conduit via which all of the information flowing from the brain is sent to the rest of the body. It moves data from one part of the body to another. The vertebral column, disc, and spinal canal all form part of the spinal cord. In all, the vertebrae of the spinal cord are divided into four categories: cervical, thoracic, lumbar, and sacral. The cervical vertebrae regulate the neck and hand, while the thoracic vertebrae care for the rib muscles to above the waist, and the lumbar vertebrae care for the hip and leg. A total of 150 joints may be counted from the neck to the sacrum, where movement can occur. Injuries to the spinal cord are prevalent worldwide. A spinal injury may be classified as either an incomplete or a full damage. Trauma, prolonged standing, poor sleeping posture, and heavy lifting all contribute to this. Even if an injury is only partially healed, it might still result in more damage. Tumors in the brain and elsewhere in the body have been found in prior research, but not in the spinal cord. Tumors of the spinal cord vertebrae are becoming more prevalent these days. If you have a spinal anomaly, there is no age restriction. No one knows why the spinal vertebrae have calcified. Cervical and thoracic-lumbar vertebrae are the most often affected by calcification. Disputes that are both full and incomplete might exacerbate pain. Symptoms such as numbness, swelling, weakness, and a different gait might be noted in the early stages. Pre-operative treatment is usually preferable than post-operative treatment. An MRI seems to be the best method for diagnosing a potential problem or location. An automated decision support system will be created in this study to help make the area visible or understood more clearly. In order to avert more serious consequences, this study employs a variety of diagnostic methods to catch an unsafe scenario early on. Clustering is one of the most often utilised methods of data splitting by academics. It distinguishes between medical data items that are connected and those that are not. K-Means MRI Spinal Cord Tumour is utilised to create the well-known and widely used process known as clustering. Clusters of data from a variety of age groups have been analysed. The optimum outcome can be achieved with this technique. The parts of this document are as follows: There are related works in both the same and separate disciplines, which are described in Section II. Section III explains the proposed work's theoretical and mathematical representations. Images are used to illustrate the results and discussion of the work done. Section V wraps off the project.

II.RELATED WORK

Numerous applications of K-Mean Clustering may be found. In this study, the K-mean Clustering idea is examined and the work of several writers is analysed and implemented. A new approach for manually identifying a spinal column's vertebral column was provided by Mohamed Amine Larhman et.al.[2]. They employed a contrast and edge detection approach to pre-process the picture, and then Generalized HT was used to manually indicate the alignment. Finally, k-means clustering seems to have found the area. Alignment of the vertebrae is determined. Automating their job and improving their learning models and segmentation processes will be a priority in the coming years. On a variety of medical photos, Piyush M. Patel utilised the K means method to identify a particular area of the image. Automatic image processing utilising K-Means and modified seed-based region-growing algorithm has been suggested by Nor Ashidi Mat Isa[4] (MSBRG). To begin, the threshold value is determined using K-means clustering, and then MSBRG is utilised to identify edges. After comparing the results with those of



TREATING WATER IN THE JAKUBANY PLANT CORROSION TEST

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Abstract

Structural degradation in all metallic pipelines is primarily caused by external corrosion, which is dependent on both environmental and operational factors. On the other side, internal corrosion may seriously impair a distribution system's functionality (hydraulics, water quality). Corrosion of water pipes has a significant impact on the long-term performance and reliability of water systems. STN 75 7151 and ASTM D2688-11 are used to assess the test. At the Jakubany water treatment facility, corrosion experiments were conducted on raw and processed water.

Keywords: Changes in the water quality, corrosion, incrustations, and treatment all contribute to this.

INTRODUCTION

When it comes to water supply systems, there are several variables at play. It's also an expensive system with a limited lifespan due to the depreciation of the materials utilised. This affects the dependability of water delivery systems as well as the quality of water provided for human use. Water delivery systems were established at a time when water usage was expected to rise. Water supply systems are overbuilt as a result. This may have a detrimental impact on the sensory properties of the provided water and could lead to microbial contamination if the water consumption is reduced in overdesigned supply systems. Transporting water through a water supply network may lead to a reduction in water quality because of the interaction between water and pipeline components (Vreeburg 2007) [1]. Operators (businesses) of water delivery systems that use metal pipes are often confronted with this issue. corrosion occurs in water delivery systems, which has a detrimental effect on the quality of the water (Munka 2005). Water and pipe material interactions generate electrochemical reactions, which are the primary cause of corrosion. Materials decompose and degrade when they are subjected to the oxidation and reduction processes of redox (Slavková, 2006) [3]. Stagnation period was shown to have a significant effect on metal concentrations, according to Lytle and colleagues [4]. Metal surfaces may benefit from high flow velocities, which help to disperse protective

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PULSE-SHRINKING FINE STAGE, BUILT-IN COARSE GAIN CALIBRATION, TWO-STEP TDC CMOS RESOLUTION

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Abstract:

This article proposes a computerized converter (TDC) solution that can meet a broad range of knowledge and fine-time goals at the same time. The proposed TDC utilizes a beat contracting (PS) plot for a precise target and two-advance (TS) engineering for a larger range in the second phase. The suggested PS TDC solves the undesired non-uniform contracting rate issue that plagues conventional PS TDCs by using an assumed counterbalance beat and a balance beat width detecting method. Due to sign spread and extension fraud between coarse and fine phases, the proposed TS architecture achieves nonlinearity with a few methods, resulting in an inferred coarse increase adjustment mechanism. The replication findings in a 0.18- μm normal CMOS innovation show 2.0-ps targets and 16-piece go connected to 130-ns input time interim of 0.08- mm^2 area in a TDC modification. With an 18.0 maws 1.8-V supply, it has a single-shot accuracy of 1.44 ps and operates at 3.3 MS/s.

Built-in coordination includes beat contracting (PS), transition time-to-advanced, and two-stage transition time-to-advanced (TS).

1. INTRODUCTION EXAMPLE

As a result of late enhancements in Cmos producing scale, rapid semiconductors, and lower supply voltage, time goal is turning out to be more prevalent than voltage goal [1], [2]. ADPLLs, space logical programming, jitter computations, and different

applications have as of late profited from the utilization of a chance to-computerized converter (TDC). It's likewise used to figure high-accuracy flight times, which are turning out to be more incessant as TDC effectiveness improves.

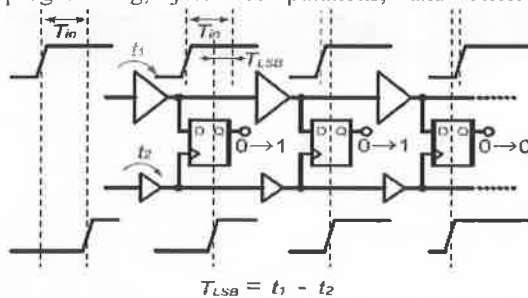


Fig. 1. Simplified schematic of a typical Venire TDC.

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Multiple Instance Learning for Automatic Content-Based Classification of Speech Audio

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Abstract: Speech analytics researchers are working to improve their ability to decipher audio material. This research presents a new method for classifying news audio clips based on their content, called the Multiple Instance Learning (MIL) approach. Audio classification and segmentation benefit from content-based analysis. As a starting point, a classifier that can predict the category of an audio sample has been proposed. Perceptual Linear Prediction (PLP) coefficients and Mel-Frequency Cepstral Coefficients (MFCC) are two kinds of features used for audio content identification (MFCC). For classification, two MIL approaches, mi-Graph and mi-SVM, are used. Different performance matrices are used to assess the outcomes gained via the use of various approaches. The results of the experiments clearly show that the MIL has great audio categorization capacity.

Keywords : Audio classification, Multiple Instance Learning (MIL); Feature extraction; mi-Graph; mi-SVM.

INTRODUCTION

Because audio constitutes a significant amount of the information distributed in the globe on a daily basis, several scholars are trying to categorise it using different criteria [1]. People in today's digital environment have easy access to a wealth of news audio and video through radio, television, and the internet. The quantity of multimedia data accessible is now so vast that it is impossible for a person to go through it all and identify essential files among them. Automatic content-based analysis provides relevant

data for audio classification and segmentation. The audio content information may be utilised to categorise the file. As a result, audio content comprehension is a current study topic in speech analytics. A classifier that can predict the category of the input audio is an important step in this approach. A unique audio categorization approach based on Multiple Instance Learning is presented in this research (MIL).

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A RESEARCH ON THE WORK OF THE DIFFERENT EMPLOYEE WELFARE SCHEMES AT BIG BAZAR

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ABSTRACT

The present study is made an attempt to identify the employee welfare measures adopted in BIG BAZAR I. Employee welfare means anything done for the comfort and improvement of the employees over and above the wages paid which is not a necessity of the BIG BAZAR. The basic purpose of employee welfare is to enrich the life of employees and keep them happy. Employees spend at least half their time at work or getting to it, or leaving it. They know that they contribute to the organization when they are reasonably free from worry and they feel that when they are in trouble/problems, they are due to get something back from the organization. People are entitled to be treated as full human beings with personal needs, hopes and anxieties.

INTRODUCTION

The fact that human resources are no longer considered a component of production is something you are probably well aware of. Instead, manufacturers are beginning to recognize that human resources are more valuable assets than any of the other components of the manufacturing process. In reality, human resources are a dynamic, alive, and living process inside an organization's structure. It is true that they have the ability to experience pleasure or dissatisfaction, think, react, grow, and express their feelings; nevertheless, it is important to remember that no two individuals are similar, and that each person has a unique psychological frame of reference.

It is a tough task for management in this scenario to hire people and monitor their welfare needs, as well as ensure that they are paid a fair wage.

Employee welfare has become more important in our modern business, as shown by the fact that it has increased in importance over time. For this reason, it is often referred to as the "labour productivity index" since it is closely associated with factors such as labour productivity, turnover, absenteeism, morale, and other non-economic aspects of labour. In the next parts, we'll take a look at the definition's central concept, its breadth, and its historical development.

INTEREST IN THE STUDY'S RESULTS

The company's labour welfare activities received the most amount of attention, with some attention paid to trade unions as well, since these are the factors that will have the greatest effect on the company's overall performance, industrial relations, and overall productivity, respectively.

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The objective of several top-tier power waft versions for sending out strength machines

N.KRANTHI KUMAR ,A THUKKAI AH

Abstract—For the primary requirements of power system operation of protection, excessive , economic system, environmental protection, a multi-intention top of the line energy go with the flow(MOPF) model is hooked up to lessen 3 aim functions of load buses voltage deviations, community lively power loss, pollutants fuel emissions and meanwhile to fulfill the security constraints of energy transmission limits in traces. The everyday boundary intersection approach (NBI) is observed to convert 3-purpose most fulfilling strength waft version into a series of single-objective optimization model, after which the indoors factor technique is used to gain the calmly allocated Pareto frontier in goal capabilities area. according to fuzzy club and entropy weight of numerous goals, the entire compromise foremost answer can be diagnosed from the Pareto frontier floor, that is employed as the operation dispatching scheme of the device. by way of the multi-goal optimization calculation of the IEEE nine-buses tool and the IEEE 39-buses gadget, the effects validate the effectiveness of the proposed model and algorithm, and imply that the complete compromised maximum proper answer can be used as a perfect dispatching scheme of power device operation.

Index Terms-- Pareto frontier, Normal Boundary Intersection method, Multi-objective optimal power flow, optimal dispatching, Power system.

INTRODUCTION

Security, quality, economy and environmental protection are basic requirements of power system operation [1]. To maintain the security, quality, economy, environmental protection of power system operation is an important job for system operators, and it is also a significant driving force for the development of electrical science and engineering technology. Modern power grid dispatching control center is the brains of grid operation. Appropriate dispatching or control strategies executed by operators in dispatching control center contributes to maintain the

security, quality, economy, environmental protection operation of power system.

The multi-objective Optimal Power Flow model will be able to describe the above-mentioned optimal operation problems of power system, and its solution is an important basis for the decision-making of system operators and dispatchers. OPF is an effective tool to achieve the optimal operation state of power grid, and it has developed into a necessary functional module of the EMS system in modern dispatching control center [2]. And for the studies of MOPF, it has gradually caused more interest in recent years [3-5]. Literature [3] established a MOPF model of minimizing the operating costs and maximizing the static voltage stability margin. Literature

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An extensive analysis based on the most recent research is presented for existing reinforced concrete buildings' shock absorption and mitigation.

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Abstract:

Significant economic losses, severe injuries, and the loss of human lives have been caused by the collapse or substantial destruction of existing structures during powerful earthquakes. Considering the late adoption of new seismic standards and the enormous number of under-designed structures, the scientific interest in creating methodologies for the seismic upgrading of existing buildings has increasingly increased. In light of the fact that reinforced concrete (RC) buildings account for a significant amount of the existing stock, this study seeks to provide an overview of seismic upgrading procedures for RC structures. There are two types of retrofitting methods: local measures that improve the performance of certain components and global measures that affect the whole building. The focus will be on cutting-edge methods rather than more established ones.

Introduction

In most industrialised countries, the building stock has already begun to deteriorate significantly. 80% of European Union buildings were constructed before the 1990s, 40% before the 1960s, and a third of the structures were over 50 years old [1]. [2] [3] Buildings account up 36% of EU CO2 emissions and 40% of EU energy consumption, making the environmental effect of the ageing building stock enormous. A "Renovation wave" of EU and Member States' buildings [3] is emphasised by the European Green Deal [2]. A New European Bauhaus effort is being encouraged. It has also been found that historic structures have a poor ability to withstand earthquakes (e.g., in Southern Europe), causing considerable economic losses, serious injuries and the loss of human lives. As a consequence, the Energy Performance of Structures

Directive [4] stated that Member States should also consider seismic hazards when designing long-term repair programmes for buildings.

Consequently, seismic upgrades for earthquake-prone zones should be included of current building life extension.

Seismic safety has been the primary focus of current seismic design guidelines (e.g. [5]). With this shift in attention to existing buildings' seismic risk, researchers have also suggested, created, or tested numerous strategies for retrofitting these structures to reduce their vulnerability to earthquakes, with the goal of bringing their findings from the lab to practise. Furthermore, seismic regulations and instructions for retrofitting existing structures have just lately been developed (e.g. [6]). Except in certain circumstances, they are not yet required to be used.

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Antibacterial Screening, Coordination Chemistry, and In Silica ADME Study Using Streptomycin and Aniline's Asymmetric Schiff Bases

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ABSTRACT

The unsymmetrical Schi base ligand StmAn was used to create two new metal complexes, Ni (StmAn)₂(4) and Cu (StmAn)₂(5) (3). We made the ligand by reacting streptomycin (2) with aniline (1). Sub-micron elemental analysis, conductivity tests, and spectroscopic methods like 1 Methods such as hydrogen nuclear magnetic resonance (NMR), Fourier transform infrared spectroscopy (FT-IR), electron spray ionisation mass spectrometry analysis of spectra for absorption. Streptomycin's azomethine nitrogen and the N-atom of the N-methyl-L-glucosamine unit were shown to coordinate metal ions in the research. The octahedral shape was confirmed by the examination of electronic absorption spectra. complex number 4, and the tetrahedral geometry of complex number 5. Scherrer's algorithm for calculating particle size revealed their nanocrystalline nature; the complexes' shape optimization was accomplished using a Gaussian-supported MM2 task. Download the latest versions of Cs-ChemOice ultra-12.0.1 and ArgusLab

IntroductionThe lack of effective vaccinations and medications to treat new infectious illnesses is a problem for the whole world. The continuous COVID-19 epidemic has wreaked havoc on human society in many ways, including but not limited to the following: the economic and social climate of nations, and people's perspectives on alter one's behaviour to fit in with the surroundings [1]. A state of fear has set in. to recover from this illness as a whole. Many Drug companies supposedly

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Signal Quality Improvement in Fast Optical Correspondence Frameworks by Applying Phantom Reversal

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Abstract

In this study, the performance of MC-CDMA over Rayleigh fading channels was examined. MC-CDMA seems to be a suitable solution for today's various wireless networks' high-speed data transfer demands. With MC-CDMA, you get the best of both worlds: OFDM and CDMA in a single package. A system that combines the benefits of OFDM and CDMA is MC-CDMA (CDMA). An MC-CDMA system has a wide range of factors that might impact its overall performance, including the spreading sequence, modulation methods, user count, and detecting method. An HNLf-based nonlinear fiber is used to put the approach into practice. After-optimization is the name given to this feature (OSPO). For a system operating at a distance of 2000 kilometers, a 1.5 dB improvement in the Q factor was discovered. WDM 100 Gb/s 5 channels transmission lengths of 2000 and 2500 kilometers saw an improvement in Q factor of roughly 1 dB. DPSK systems were used to evaluate the method across a 300-kilometer transmission distance to ensure its effectiveness.

I.Introduction

Optical phase conjugation, an established technical method, is used to account for optical fiber transmission systems'

chromatic dispersion and nonlinear effects. Being unfamiliar with the

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Sub-threshold circuit standby and active energy optimization at the same time is possible thanks to this technique

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ABSTRACT

Leakage current increases dramatically when CMOS circuits are downscaled in terms of feature size and threshold voltage. Consequently, decreasing leakage power is a critical design issue as technology goes up, in both active and standby modes. For 22 nm sub-threshold CMOS circuits, this work proposes a combined active and standby energy optimization mechanism. When it comes to active energy consumption per cycle, a dual threshold voltage design is the first option to be explored. For non-critical routes, slack-based evolutionary algorithms can assign reverse body bias for least active energy per cycle and highest frequency at optimal supply voltage. In this study, a lower triangular encoder for IEEE 802.11n wireless LAN is developed with a block length of 648 and a coding rate that is half as fast. At 301.433MHz, the LDPC encoder's hardware implementation runs at 12.12 Gbps.

1. INTRODUCTION

Every generation, the leakage power in modern digital CMOS circuits gets more and more spectacular. Power reduction has recently become an essential design consideration as a result of these scaling issues in technology. A considerable delay is caused by the exponential relation between voltage and current in the sub-threshold region, while above-threshold action is affected by the power law of a power law.[1].

Popularity of error correction codes

based on low-density parity-check codes has grown as a result of recent breakthroughs in VLSI, MacKay and Neal, and R. Gallager's original idea from the early 1960s. They all use or plan to use LDPC codes in their present and future communications systems: WLAN, Mobile WiMAX (IEEE802.11n), DVB-Sand, and 10GBaseT. (IEEE802.3an). The significant encoding difficulty of LDPC codes overcomes any speed or decoding complexity benefits they may have.

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Here are some suggestions for using digital image processing to diagnose nutrient deficiency syndromes in plant leaf imagery.

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Abstract

Thirteen different mineral nutrients are required for plant development and survival. A plant's development might be stunted or even stunted to death if it lacks one or more of these essential nutrients. As a result, a system for continuously checking the nutritional status of plants is crucial for increasing productivity and improving crop quality. The signs of a deficit might be detected by a diagnostic system that uses digital image processing rather than the human eye. The farmers will be able to take corrective measures sooner rather than later. Image processing methods are reviewed in this research to help identify-nutrient deficiencies in plants.

Keywords: Mathematical Morphology; Color Segmentation; Color Feature Extraction; Classifier; Color

INTRODUCTION

Plants and crops need a total of 13 mineral nutrients in order to thrive and flourish. The earth provides them with the nutrition they need. Growth and quality are negatively impacted by a lack of essential nutrients. Thus, the importance of mineral nutrient status in agriculture and farming cannot be overstated. Leaf signs of nutrient insufficiency are typical in plants and crops. These signs include interveinal chlorosis, marginal chlorosis, uniform chlorosis, necrosis, deformed margins, and a decrease in the leaf's diameter. The deficiency nutrient may differ even when comparable symptoms are evident in both old and young leaves. Figure 1 displays some of the leaf signs of plant visual impairment. The mineral nutrients are broken down into macro and micro nutrients.. macronutrients and micronutrients

are essential for the survival of plants. Carbon, hydrogen, oxygen, sulphur and phosphorus are all macronutrients. Boron, Copper, Iron, Chloride, Manganese, Molybdenum, and Zinc are examples of micronutrients.

COMPONENTS OF NUTRIENT DEFICIENCY DIAGNOSTIC SYSTEM

The following elements would be included into the diagnostic system via the use of image processing techniques: Determining the shape of the leaf

- Segmentation of the edge and veins of the leaf
- Classifying insufficient mineral
- Identifying the leaf's age

Extracting the leaf's chromatic information

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Automotive Chassis Frames: Structural Analysis and Weight Reduction Design Modification.

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Abstract:

The bottom body of a car is referred to as its "chassis," and it is an essential component. An automobile's body and many components are supported by the chassis. In addition, it must be strong enough to endure the swaying motions, twisting, and other forces that it will encounter. Adequate bending stiffness, along with strength, is a crucial concern in chassis design for improved handling qualities. A chassis's design must take into account factors including maximum tensions, maximum equilateral tensions, and deflection. Efforts are being made to improve the vehicle chassis with the goal of minimising the stress and deflection of the chassis. Keeping the width constant, thickness and height are analysed for sensitivity. The finite element method may be used to examine structural systems such as the chassis. So, a proper finite element model of the chassis was created, as well. The ANSYS Workbench is used to perform FEA on the modelled chassis. To begin with, structural analysis was performed on an existing, well-tested model. The strains and deflections in an optimised chassis are reduced. Using modal analysis, we can figure out the inherent frequencies and mode shapes of a vehicle's chassis, old and new. The first three mode forms have natural frequencies ranging from 14 Hz to 27 Hz, with all of the optimised chassis's natural frequencies falling below 100 Hz. These frequency ranges were used in almost all truck chassis designs to minimise resonance during operation.

Introduction

A vehicle's chassis might be referred to as its "backbone." Engine, suspension, transmission, gearbox and brake system are all held in place by the chassis' primary function - to keep everything in place. It must be built to withstand a variety of loads and operating situations. Furthermore, the chassis must be rigid and sturdy enough to withstand the high levels of twisting and bending it will experience. It must be able to tolerate the vibrations that come with it. There are two primary purposes for an automobile chassis.

Keep the components from falling over.

When moving, the suspension components must be firmly held together. The first component is a simple design solution and is the foundation for the initial chassis designs that were derived from horse-drawn carriages.. An I-Beam, a box tube, or a C-Beam are some of the most efficient geometries for sustaining point loads that are fixed at both ends. A single I or C beam on each side may support a great deal of weight. A simple and practical way of sustaining big loads is still used in truck frames.

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ABSTRACT

Large sinkholes happened in a residential suburb in the State of Kuwait, resulting to damage of houses and subsequently to partial evacuation of this residential neighbourhood. From fully completed inquiry programmes, the sinkholes were linked to the presence and proliferation of Karst voids in the limestone bedrock layer. Accordingly, a thorough treatment programme was created to limit the danger of sinkhole recurrence by decreasing the possibilities of collapse in the higher level holes inside the limestone bedrock. In this project, two distinct cement grout mixes were devised and employed for treatment of the Karst cavities; cavity filling grout and permeation grout. The examination of the employed mixes comprised frequent measurement of the compressive strength, slump, thermal conductivity, thermal resistance, bleeding, air content, loss of slump, flow and setting time. The treatment was followed by an assessment procedure by drilling control boreholes. Some cores of the hardened grout were retrieved from the control boreholes and their characteristics were assessed and compared to those of laboratory specimens. This document explains several kinds and mixes of cement grouts employed in the ground treatment, features of quality control programme, and frequency and types of testing. Assessment of the findings in addition to summary of the project is also offered. The findings proved the efficacy of the numerous cement grout mixtures utilised in this treatment operation.

Keywords: Permeation and permeation management are two of the most important aspects of karst, cement, grout, and sinkholes.

Introduction

It was discovered that eight sinkhole events happened in a Kuwaiti residential neighbourhood, four of which occurred between 1988 and 1989 and the other four in 2004 (Al-Rifaiy 1990; Abdullah and Mollah 1999; Abdullah and Kamal et al. (2005)). The first sinkhole was discovered when a 15-meter diameter and 31-meter deep cylindrical hole appeared in front of a residence. Another sinkhole of similar size and depth appeared a few days later; this was followed by others in the same area. The diameters and depths of

the sinkholes ranged from 1.5 to 15 metres. There was a partial evacuation after sinkhole episodes, and thorough research of the area's topography and geology led to the discovery of subsurface cavities (Al-Mutairi et al., 1998; Abdullah and Kamal, 2005; Abdullah and Kamal, 2005). Researchers discovered a 35-40-meter-thick layer of overburden soil, mostly made up of quartz sand, above the Dammam Formation Karst limestone bedrock in this residential area. Dissolution of limestone bedrock and

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Exploring Multilevel Clusters as a Network

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Abstract

Visual analytics has gained a lot of attention for its *ability to identify meaningful patterns in large datasets. The identification and depiction of clusters is one of the most typical activities. In heterogeneous datasets, on the other hand, this is more difficult since the data must be seen from several angles. A dataset with a high degree of variability may in fact conceal trends that lie under the surface. An analytic framework for examining the clustering at various degrees of detail is provided by the use of dendrograms (graphical representations of agglomerative hierarchical clustering). Nevertheless, as the dataset becomes larger, dendrograms get congested, and a single cut might be inadequate in diverse datasets to demarcate multiple clusters. Visual analytics technique dubbed MCLEAN is proposed in this study to assist the user in discovering and exploring clusters. Data may be represented in a wide variety of ways by modifying its spatialization using graph-based transformations of relational data. Thus, multilevel representations of the clustered dataset are combined with techniques for locating the communities that live there. User exploration and data analysis might begin with the presentation of heuristics findings to the public. Users are invited to compare the findings of MCLEAN and the dendrogram while exploring a diverse dataset in order to assess our suggested technique. Qualitative findings show that MCLEAN is a useful tool for helping people identify clusters in diverse datasets. An R programme implementing the suggested approach is readily accessible.*

Introduction

The technique for addressing the clustering issue is separate from the problem of determining the number of clusters in a dataset. Many times, it is difficult to determine how many groups a dataset should have based on its structure and size, as well as the required level of clustering resolution by a user. There are several factors to consider when deciding how many clusters to utilise; in general, it's a trade-off between the most compression and the highest resolution possible. For example, k-means, DBSCAN, and hierarchical clustering all use a variety of clustering methods for determining the number of clusters. In certain cases, these factors may directly or indirectly determine the number of clusters that are generated by the algorithm. Pre-existing data knowledge or time-consuming trial and error are required to set these values. It's also possible that a single cutoff might obscure intriguing structures behind it. Automated clustering approaches sometimes

overlook unique aspects of clusters, such as their density or sparsity, since there may not be a single logical cutoff in the actual world.

"The clustering process is not complete until it is examined, verified, and approved by the user," says the statement. As a result, visual validation and exploration may help clarify the clustering structure and uncover patterns, outliers, and clusters that otherwise would be difficult to see. These visualisations aid in swiftly assimilating the data and give insights that supplement textual outputs or statistics summaries. How well-defined are the clusters, how far apart they are, what their size is, and whether or not the observations belong strongly to the cluster or are just marginally associated with it? There are many potential clustering situations to explore, and it might be difficult for the user to identify related groupings of records (i.e., patterns).

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A STUDY ON THE DEVELOPMENT AND IMPLEMENTATION OF HR POLICIES AT BSNL

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ABSTRACT

Media transmission is a rapidly evolving business with a significant risk of deteriorating quality. From magneto trading to cutting-edge New Technology Digital Switches, our country has witnessed many advancements. We have not only seen oscillations in transmission development, starting with transport frameworks and progressing to DWDM structures that provide long division circuits throughout the length and breadth of the country. Media correspondences are both a free service and a necessary infrastructure. Starting now, an in-house planning center is a critical connection for selected planning of experts and employees in a short timeframe length field.

Organizing is a framework by which a person refines and reestablishes his or her potential, cutoff, and reasonableness by refining and reestablishing his or her know-how and know-how the aptitudes required to carry out their growth on a regular basis. In a similar way, planning draws a person in to make the appropriate and necessary direct and air towards the job and people. Regardless, if orchestrating is provided, the professions and lifestyles of workers in affiliations are suggested. To cope with their lead, it rotates the Rules and Procedures. It is the use of data to enhance the presentation of one's current job or to prepare one for a standard progression.

For their variety and delight of shared desires, trick and character must make and advance at the same time; this must be feasible on an extremely important level via sifting through framework, because arranging is the most important method and it is a cost development to the relationship via Human aid improvement for the improvement of the pro. No connection can acquire an up-and-comer who completely sifts through the development and gathered leveled requirements, so the chairman she/he has been chosen, established, and introduced in an alliance should be provided form running conditions to exchange and lead them to sensible for the process.

Any organization's most valuable asset is its ready workers. When there is a limit between the improvement of stray pieces and the workers' current subtleties, BSNL arranges. Right now, the most important sub-structure, express, and one of the most important employable parts of Human Resource Development is finding everything out. Sifting through changes the leveled limit, authenticity, progress and improvement, tolerably interest sensitivity, apparent quality, and progress to a consistent head degree. If the secret to figuring things out isn't provided, the workers will get disillusioned. Separating through increases the affiliation's capability, assurance, creativity, and involvement.

The sold make in my evaluation is to find the abundance of organizing and development in reaching the connection's goals, to consider the extraordinary structures for sifting through seen

at BSNL, the rationalization on which sifting through programes are remoted through and managed, and how the introduction assessment allows in watching getting ready wishes.

Data mix from different sources was the outcome of this enhancement. As both a quiet head in an evaluation, I utilized both major and partner data for the assessment. Essential information was gathered via assessment and individual social occasions, at the very least by the assistant.

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Taguchi L9 orthogonal array-based Taguchi Multiple Response Optimization of Machining Parameters on Turning of AA 6063 T6 Aluminum Alloy with Grey Relational Analysis.

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ABSTRACT

There is a new way to optimising the turning characteristics of aluminium alloy AA 6063 T6 based on I. Taguchi L9 orthogonal array and current research. The tests employ aluminium alloy AA 6063 T6. It is used for turning trails in dry cutting conditions with the uncoated carbide inserts. Optimization of cutting parameters including cutting speed, feed rate, and depth of cut take into consideration both surface roughness (Ra) and the material removal rate (MRR) (MRR). Based on the grey analysis, a grey relational grade (GRG) is created. ANOVA is used to determine whether variables have a significant effect once the optimal number of components has been determined using grey relational grade values. The findings of the exam are verified by doing a follow-up test. This conclusion is supported by the data gathered throughout the research. Increasing the turning process's response time is an option.

Taguchi and ANOVA, Grey Relation Analysis, S/N Ratio, Material Removal Rate, and Taguchi Method

INTRODUCTION

It has always been challenging for Manufacturing Industries to develop items easily with high quality and high production rates in order to stay competitive in the global market... To produce a particular shape and size, a procedure known as turning is used. This involves rotating pieces that spin the product.

A Lathe machine uses cutting tools to remove the undesired material from the workpiece, allowing us to get the required form. Making a U-turn is critical in the engineering industry. It is a property of surface texture to have a roughness to it. An idealised surface's departures from reality are quantified by measuring the direction of the normal vector's deviations. The top is rough A smooth surface is one with minimum roughness when these variations are taken into account; this is often referred to as the high

frequency, short wavelength Surface metrology refers to the measurement of a surface's constituent parts. As a result, industries need a greater material removal rate (MRR) in order to increase their production capacity good quality while keeping a high pace of manufacturing. Cutting speed, feed, and depth of cut may all be increased to get a high MRR. High cutting speeds need additional power, which may exceed the capability of the machine tool. As the parameters of the process rise, It becomes hotter to cut things. When it comes to efficiency, effectiveness, and economy, establishing the right process parameters is critical to success. achieving these aims via the use of machining-based manufacturing (higher MRR and product quality). Cutting speed, feed rate, and other factors are critical in turning. Surface polish, roundness, and MRR are all influenced by the cut's depth.



FEATURE EXTRACTION AND SPARSE REPRESENTATION- BASED MEDICAL IMAGE FUSION

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Abstract

Sparse representation has numerous benefits over traditional picture representation approaches as a novel multiscale geometric analysis technique. The normal sparse representation, on the other hand, ignores inherent structure and time complexity. A new fusion mechanism for multimodal medical images focused on sparse representation and judgment is presented in this article.

A map is planned to address both of these issues at the same time. To allow the effects reserve more energy and edge knowledge, three decision maps are designed: structure information map (SM), energy information map (EM), and structure and energy map (SEM). The Laplacian of a Gaussian (LOG) captures the local structure function in SM, and the mean square variance detects the energy and energy distribution feature in EM. To increase the pace of the algorithm, the decision map is applied to the standard sparse representation dependent procedure. By improving the contrast and reserving more structure and energy details from the source pictures, the proposed solution also enhances the accuracy of the fused data. The findings of 36 classes of CT/MR, MR-T1/MR-T2, and CT/PET photos show that the SR and SEM-based approach outperforms five state-of-the-art approaches.

1. INTRODUCTION

Thanks to the growing demands of clinic inquiry and disease diagnosis, medical imaging is gaining in popularity. Medical imaging is complicated by a variety of imaging processes. In a small domain, photographs of various modals include a variety of complementary details regarding the human body.

For eg, computed tomography (CT) images provide better information on thick tissue, PET images provide better information on blood flow and tumor activity with low spatial resolution, and magnetic resonance (MR) images provide better information on soft tissue. Furthermore, MR-T1 images provide more information regarding anatomical shapes, while MR-T2 images provide a stronger distinction between regular and abnormal tissues. However, a single multiple modalities would not be able to meet the need for high-resolution imagery and simulation for disease diagnosis. Medical picture fusion is a

valuable and efficient strategy for combining complementary details from multimodality images to increase diagnostic precision in this regard.

Furthermore, fused images are better for assisting doctors in diagnosis and care preparation : fusing MR and CT images will provide images that describe soft tissue and bone while simultaneously representing anatomical and physiological aspects of the human body. To segment white matter lesions and direct neurosurgical resection of epileptogenic lesions, MR-T1 and MR-T2 photos are fused . In oncology, hybrid PET/CT imaging is useful for viewing biological, biochemical, and tumor response characteristics. Furthermore, medical picture fusion not only aids in disease diagnosis but also lowers storage. Multistage decomposition approaches have grown in popularity as the most widely used image fusion process

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RASPBERRY PI MEDICINE REMINDER E-MAIL ALERT USING IOT

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Abstract

—This Raspberry pi Medicine reminder system has remind and consume feature which is used to deliver notifications to the user to take pills at the appointed time. The pills to be swallowed are popped out of the pillbox at that moment. Smart pill box might lessen the guardian's obligation of administering the proper medications at the recommended time. The improvement in medical technology is one of the key contributors to the aging population. Most of the elderly have chronic ailments and they need to take drugs for an extended period of time in order to stabilize their health. So drug safety for the elderly is really crucial. The most typically seen scenarios of drug misuse include excessive drug consumption and violating the prescription recommendations. We have designed a gadget named "Raspberry pi Medicine reminder" to aid the aged population to ingest the proper medicine at the appropriate time according to their needs. This system enhances the current method by notifying the user at the specific time again by setting the count each time and the particular pill is recall by the system automatically by message and e-mail.

INTRODUCTION: Preventing medication errors using a Linux-based Speaking Medication Reminder is a good way to save people from making potentially fatal blunders. Reminders may be entered from the outset. The system accepts numerous reminders with date, time, and dose by keyboard input. Afterwards, it reminds people to take their prescription as prescribed. Raspberry pi is used by the system to keep the dates and times associated with each user's medicine.

EXISTING SYSTEM: Currently, doctors or caregivers remind patients to take their medication

at the prescribed time. As an alternative, the patient may choose to use a regular alarm clock. There may be times when physicians aren't available.

PROPOSED SYSTEM:

Reminder and medication dosage will be stored in the database by a server, which will automate the alarm with a voice on what medicine to take and how much of it to take, under this system's suggested implementation. When a user forgets the tablet's name and time, an email will be sent to remind them.

Architecture Diagram of the System:

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Raspberry Pi Face Detection Door Lock

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ABSTRACT

A home security system is a need in today's world. However, the usage of keys, security cards, passwords or pattern locks to open most doors has recently been outlawed. Yet robbery and identity theft are much more dangerous repercussions of key loss than the actual loss of a key itself. Consequently, this has been deemed a severe problem. A door access control system was successfully installed thanks to the usage of the Internet of Things (IoT). As well as serving as the primary controller for face recognition, youth system, and locking system, the Raspberry Pi is employed as a compact computer board that can be programmed. The guy standing in front of the entryway is captured by a camera on the wall. Whenever the system fails to recognise a person's face, a warning will be sent. Using the Internet of Things, a user may control who has access to a door (IoT). Facial recognition, Raspberry Pi, Internet of things (IOT), and home security systems are some of the terms we'll be using today.

INTRODUCTION

Video surveillance systems, in particular, rely heavily on the ability to monitor who is entering and exiting the residence. Since unique faces are a biometric trait that can be recorded, they may be used instead of passwords or pins to keep track of items. They cannot be altered or stolen since they are intrinsic to the person. Increased security may be achieved with the use of face detection technology. Because of this, a new hardware solution for identifying human faces using the Raspberry Pi has been developed. Single-board computers the size of a credit card are available from the Raspberry Pi brand. It performs like a fully functioning CPU, with the same capabilities as a desktop computer. Face-recognition technology works as follows: A camera is used to take the first

picture. Each letter in the snippet of code represents a distinct personality trait. Acquired images are compared to the database's photos using a Raspberry Pi once they have been detected. Finally, whether the two faces are identical or not, it is decided. At the first sign of an intruder, an alarm will ring. The tools utilised here are easily available and may be put to use in a wide range of circumstances. A LINUX operating system and Python programming language were used to create the approach, according to the author. This database is open to all members of that particular family whose photos will be included. An warning is raised and validation is provided by visitors (a face that is not recognised, rather than a specific intruder).

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Pascal matrices are helpful for calculations that require precision and conditioning.

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ABSTRACT

We show a theorem about Pascal matrices that are in an unsuitable state. The use of bidiagonal factorizations of Pascal matrices, however, is shown as a means to achieve relatively high precision in numerical calculations.

INTRODUCTION

Pascal matrices have been around for a while (see to [1-3]) and have found use in a wide variety of disciplines, including probability, combinatory, numerical analysis, electrical engineering, and image and signal processing (refer to [2,4] and [5,6]). Solving linear systems using rapid methods has been the subject of numerous recent articles. The use of Pascal matrices (see to [6]) and quick eigenvalue methods (cf. [7]). The ill-conditioning of Vandermonde matrices is well-known to grow with matrix size. From the Matrix. In Section 3, we use the Skeel condition number to verify a result about the ill-conditioning of Pascal matrices.

Proving that, of a given order, they are always less well conditioned than an equivalent Vandermonde 2.

matrix. But even with this outcome, we prove that accurate methods can be obtained for calculating eigenvalues and inverses of Pascal matrices, and for solving linear equations using Pascal matrices as coefficients. HRA denotes regardless of the condition's magnitude, the relative errors of the calculations are on the order of machine accuracy. Number When the calculations don't need subtractions (apart from the original data), as is well known (cf. [8]), the Legal protections for HRA are available. Two resources are used in the development of HRA algorithms for Pascal matrices. For one thing, a specifically, the bidiagonal factorization of Pascal matrices is discussed in Chapter

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A study of the stiffness of a 3-PUU parallel kinematic machine

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Abstract

The stiffness of a 3-PUU translational parallel kinematic machine is described in this work (PKM). To generate the stiffness matrix for actuators and restrictions as well as leg compliance, a different technique is employed. Rigidity manipulator performance is evaluated using extreme stiffness values and their design ramifications. It's a smart idea to include the 3-PUU PKM's stiffness into the design of its architecture. The stiffness centre and the compliant axis of the PKM may be identified via an eigenscrew decomposition of the PKM's stiffness matrix, providing a physical interpretation of PKM stiffness. Parallel manipulator kinematics and mechanical stiffness

Introduction

Due to their wide range of uses, parallel manipulators have grown in popularity in recent years [1]. In many applications, parallel manipulators with less than six degrees of freedom (DOF) have been widely used because of the intrinsic advantages of parallel mechanisms, as well as extra benefits in terms of manufacturing and operating costs. The end-precision effector's and cutting speed are directly related to the robustness of parallel mechanisms. A parallel kinematic machine's stiffness must be tested and evaluated as early in the design phase as possible (PKM). The idea of translational parallelism was discussed and investigated prior to the 3-PUU mechanism [5–6]. A little amount of research has been done on the system's overall stiffness, despite actuators and legs having their own compliance. The 3-PUU PKM stiffness model established for this work has an effect on the structure's dynamics, which is why PKM in motion is explored.

Section 1.1 discusses stiffness modelling.

This connection between force and deflection is linear when elastic devices support a rigid body [7], as defined by a 6x6 positive semidefinite matrix that is symmetrical. End-vector effector of compliant deformations is connected to a static external wrench via a 6x6 stiffness matrix to identify parallel manipulators. Six-leg parallel 6-DOF manipulators with pliability of each compliant portion may be utilised to construct a basic stiffness model. It takes a long time to create stiffness maps for manipulators with just two degrees of freedom. The stiffness of a tripod-based PKM may be mimicked via virtual labour [10]. In [11], a parallel manipulator model for CaPaMan was created by using the kinematic and static features of all three legs.

Selection of Materials for Bevel Gears

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ABSTRACT

Computer technology has impacted every aspect of our daily lives, from how we buy train tickets to how we get medical advice from afar. Nowadays, computer-aided design analysis is a standard part of almost every development effort. When it comes to designing, the term "design" has traditionally been used to refer to a specific product, such as mechanical design or electrical design. This kind of product design relies heavily on the use of predetermined approaches to achieve specified results.

The scope of this project comprises the design and modelling of bevel gears, the selection of gear materials, the consideration of safety factors in design, and the analysis of bevel gears. There are two types of gears: those with teeth and those without. The power transfer efficiency of gears may reach as high as 98 percent. For the most part, gears are pricier than chains or belts. In bevel gears, the axes of the two shafts cross, and the tooth bearing sides of the gears themselves are conical in form. When used on shafts that are not 90 degrees apart, bevel gears are most often installed that way, although they may be made to function in different ways. Bevel gears have a cone-shaped pitch surface. Bevel gearing occurs when two bevel gears mesh together. If you're using bevel gearing, you can figure out the pinion and gear pitch cone angles from the intersecting shafts' angles of rotation. In addition to locomotives, maritime applications, autos, printing presses, cooling towers, power plants, steel plants, railway track inspection equipment, etc., the bevel gear may be used in a wide range of other applications.

1. Introduction

It is a kind of conical gear that has conical tooth-bearing faces on both sides of the axis. Bevel gears When used on shafts that are not 90 degrees apart, bevel gears are most often installed that way, although they may be made to function in different ways. Bevel gears have a cone-shaped pitch surface.

Pitch surface and pitch angle are critical gearing concepts. It's possible to approximate the pitch surface of a gear by averaging the peak and valley heights and widths of its individual teeth. A cylinder is the form of

the pitch surface of an ordinary gear. When speaking about a gear's pitch, it's defined as the angle between the gear's pitch surface and the gear axis.

Most bevel gears are cone-shaped because their pitch angle is less than 90 degrees. It is referred to as an external bevel gear because the teeth point outward rather than within.

In external bevel gears, pitch surfaces that are coaxial with the gear shafts are located at the apexes of the two surfaces.

Layout optimization of mechanical components using a more sophisticated set of totally optimization methods based on teaching-learning and the differential operator

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Abstract:

TLBO is a mechanical component optimization approach based on differential operators (training-learning based mainly optimization). There is a lot of information in this page on TLBO's beginnings and present status. You can employ a huge population of replies to arrive at a global solution in the same way as most other techniques. Differential operators are used to find better solutions in TLBO. An open coil helical spring is utilised first, followed by a hollow shaft, to evaluate the method's efficacy in solving typical optimization issues. There was a resounding "yes." Current optimization strategies fail to uncover better alternatives as effectively as the proposed strategy, according to simulation results (mechanical components).

1. INTRODUCTION

To diminish a closed coil helical spring's capacity, conventional procedures must be used. In a hollow shaft situation, graphs were used to solve a set of constraints. The weight of a belt-pulley drive was reduced by Reddy and his colleagues using geometric programming. For this reason, engineers often consider optimization while developing mechanical systems. There are several factors and constraints that must be taken into consideration while optimising a mechanical system [4-6]. Focusing on individual components or intermediate assemblies instead of optimising the whole system is a typical practise. Centrifugal pumps without motors or seals are much easier to optimise than pumps with these components. The extremes of a function are often estimated using analytical or numerical methods in

engineering calculations. When designing complex systems, the use of traditional optimization methods may not be sufficient. Most real-time optimization problems include a high number of design variables with complicated (nonconvex) and nonlinear effects on the objective function that has to be optimised. In order for us to accomplish our goal, we must find an acceptable global or local maximum. Any given circumstance necessitates a focus on optimising. Mechanical components should not be compromised in any way in terms of efficiency. It is possible to boost production rates and lower material costs by optimising machine components [9-12]. Thus, optimization tactics may be used to their fullest extent.

A MACHINE LEARNING APPROACH WITH SEMI-SUPERVISION FOR DDOS DETECTION

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Abstract - Distributed denial of service (DDoS) attacks are a major threat to any network-based service provider. The ability of an attacker to harness the power of a lot of compromised devices to launch an attack makes it even more complex to handle. This complexity can increase even more when several attackers coordinate to launch an attack on one victim. Moreover, attackers these days do not need to be highly skilled to perpetrate an attack. Tools for orchestrating an attack can easily be found online and require little to no knowledge about attack scripts to initiate an attack. The purpose of this paper is to detect and mitigate known and unknown DDoS attacks in real time environments. Identify high volume of genuine traffic as genuine without being dropped. Prevent DDoS attacking (forged) packets from reaching the target while allowing genuine packets to get through. A DDoS attack slows or halts communications between devices as well as the victim machine itself. It introduces loss of Internet services like email, online applications or programme performance. We apply an automatic characteristic selection algorithm primarily based on N-gram sequence to obtain meaningful capabilities from the semantics of site visitors flows. DDoS attacks are the perfect planned attacks with the aim to stop the legitimate users from accessing the system or the service by consuming the bandwidth or by making the system or service unavailable. The attackers do not attack to steal or access any information but they decline the performance of the network and the system.

Keywords - Distributed Denial of Service (DDoS), Malware Detection, Machine learning, NLP Method, Text semantics.

INTRODUCTION

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Data mining techniques have been used to develop sophisticated intrusion detection systems for the last two decades. Artificial Intelligence, Machine Learning (ML), Pattern Recognition, Statistics, Information Theory are the most used data mining techniques for intrusion detection. With the increase in dependability of the internet comes with it an important challenge: data availability. Data availability is a key requirement for a network system to be considered secure. Distributed denial of service attacks are intentional attempts by malicious users to disrupt or degrade the quality of a network or service. These attacks involve a number of compromised connected online devices, The use of botnets makes it easier for attackers to launch massive attacks due to the fact that they harness the power of a lot of devices for an attack. Attacks involving botnets also make it difficult to determine the exact source of the attack. Differentiating between flash crowds also poses a major challenge.

There are two main methods to launch DDoS attacks in the Internet. The first method is for the attacker to send some malformed packets to the victim to confuse a protocol or an application running on it (i.e., vulnerability attack). The other method, which is the most common one, involves an attacker trying to do one or both of the following:

(i) Disrupt a legitimate user's connectivity by exhausting bandwidth, router processing capacity or network resources; or (ii) Disrupt a legitimate user's services by exhausting the server resources (e.g., sockets, CPU, memory, disk/database bandwidth, and I/O bandwidth). Employing the resources of recruited computers to perform DDoS attacks allows attackers to launch a much larger and more disruptive attack. Furthermore, it becomes more complicated for the defense mechanisms to recognize the original attacker because of the use of counterfeit (i.e., spoofed) IP addresses by zombies under the control of the attacker. Most of the DDoS attacks launched to date have tried to make the victims' services unavailable, leading to revenue losses and increased

SECURITY ANALYSIS AND ACCESS CONTROL IMPROVEMENTS FOR THE INTERNET OF THINGS

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ABSTRACT:

The Internet of Things is an omnipresent concept with physical objects connecting with the Internet and programmed with specific identifications to guarantee that they can recognise and continuously gather and share data over a network. The Internet of Things As a consequence, the security of data sharing and interconnected sensor nodes grows very rapidly, the safety of network, data and sensor devices is a major concern of the IoT network. This paper analyses the authentication system and the Internet of Things access management. protocol is costly for exchanging packets and according to our study the security assessment is not sufficient enough for such a protocol. We therefore suggest changes to the protocol to fill the holes observed. The protocol enhancements allow for many user services, including anonymity, mutual authentication and a secure session key configuration. Finally, the efficiency and safety assessment reveals that the improved protocol provides several advantages over common attacks, improving stability at low connection costs. The Philosophy of the Internet Interconnection to the Internet helped objects or devices to achieve certain common goals for each other and for people. IoT should be integrated seamlessly in our society in the near future and citizens will fully depend on this technology for comfort and simplicity. In a single paper, we tried to make improvements and access control techniques accessible.

KEYWORDS: Internet things; wireless sensor network; access control.

1. INTRODUCTION

There are now a number of imagined and implemented applications using smart devices and sensing nodes, forming a global and Internet-based Internet of Things (IOT) platform. Under the ITU concept, the basic IOT design can be as perceived almost every physical thing in the world could precisely — it's all about Not transformed to computers but small computers have a small footprint

and intelligent nature. IOT involves numerous technologies, including architecture, sensors, etc. Coding, transmitting, processing data, network, discovery, etc. Kevin Ashton was the first to coin the Auto-ID Center's co-founder and managing director at MIT. The term Internet of Things in the supply chain management context in 1999. However, in the concept was expanded over the past decade with new IOT network applications like Electronic health and transport services. The development of IOT comes from the convergence of Wireless technology, microelectromechanical (MEMS) and digital technology development Electronics in which miniature devices are able to understand and calculate and wirelessly chat. In the age of IOT, human contact and friendship Machines are increasingly regarded as machines that are smarter and more human Tasks and people have to trust the computer and feel secure in this scenario. That's one thing might be a patient with a medical implant for real-time tracking in a medical application or an accelerometer for moving in a field setting connected to the cow. Figure 1 shows the An incipient application that focuses on the hype cycle for emerging technologies, and is the fastest running, annual Internet of Things (IOT) cycle on the interconnection of things or devices and to people or consumers to accomplish certain general objectives.

Figure 1. Gartner 2013 New technology hype cycle.

The Osteogenic Potential of Titanium Dioxide Nanoparticles of Different Sizes and Shapes

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Introduction

For example, nanoparticles (NPs) are increasingly being used in healthcare, antimicrobial materials, optical and electrical devices, and medication delivery systems [1, 2]. NPs have a greater specific surface area than tiny particles, which increases their reactivity, making them more attractive to researchers. Nanoparticle bioactivity is considered distinct from that of its fine-size equivalent because of surface features such as energy level, electronic structure and reactivity [3]. As a result, several studies [4–10] have examined the possible effects of NPs on cells and tissue. Because TiO₂ NPs are NPs, they have the same surface characteristics as the rest of the NPs. TiO₂ NPs are extensively employed as a photocatalyst in solar cells, a pigment in paints, a corrosion-protective coating on bone implants, and more because of their unique physicochemical features [11–14]. TiO₂ NPs have recently come under scrutiny for their potential impact on human health. A study by Ferin et al. [15] found that ultrafine TiO₂ (20 nm) reached the pulmonary interstitium in the rat lung and produced inflammation compared to fine TiO₂ at the same mass burden. In vitro and in vivo, Kumazawa et al. [16] found that neutrophils phagocytized Ti particles (1-3 μm) and concluded that the cytotoxicity of Ti particles was size dependant. After then, TiO₂ NPs have been extensively studied to identify their potential toxicity to different cells, including human fibroblasts, macrophages, and cutaneous microvascular endothelial cells [17, 18]. Particle sizes, surface coatings, crystal shapes, and dosages were all used in these research to highlight the cell toxicological effects of TiO₂ NPs. It is unknown how TiO₂ NPs affect osteogenic differentiation in cells. The human body's bone tissue is one of the most active and versatile types of tissue there is. Trauma, damage, infection, and loss of bone extracellular matrix are among the most serious health threats to humans [22]. [23] Bone tissue engineering is a novel

strategy to repairing bone abnormalities and designing bone tissue transplantation. It's been shown in several research on bone tissue engineering that a variety of materials, stress or other variables may impact bone tissue cell proliferation, differentiation or mineralization. Osteoblasts, in particular, populate the bone defect during bone repair. It is the Golgi apparatus of osteoblasts that allows them to release a huge number of proteins onto the surface of the bone matrix [34]. Research into whether or not TiO₂ NPs may promote osteogenic differentiation in cells is significant since osteoblasts are critical in bone production. By coculturing MC3T3-E1 cells with TiO₂ NPs, we investigated how the concentration, shape, and size of NPs affected the proliferation and osteogenic differentiation of preosteoblasts. The CCK-8 kit is used to monitor MC3T3-E1 cell proliferation. Flow cytometry is used to study cell death and reactive oxidative species (ROS). Analysis of ALP, OCN, and Alizarin Red staining of mineralized osteoblast nodules helps determine the differentiation and proliferation of osteoblasts.

Materials and Methods

In this investigation, R2 (Wan Jing New Material Co. Ltd.; purity > 99.8 percent) and rutile TiO₂ NPs (A2; Beijing Nanchen Technology Development Co. Ltd.) without any coating were utilised. It was bought from Gibco Invitrogen's Minimum Essential Medium Eagle (MEM) (USA). MDgenics supplied the foetal bovine serum (FBS) (New Zealand). INALCO supplied penicillin G and streptomycin for use in this study (USA). Beyotime Institute of Biotechnology provided the cell counting kit-8 (CCK-8), ALP assay kit, 2,7-dichlorodihydrofluorescein diacetate (DCFH-DA), total glutathione assay kit, total superoxide dismutase (SOD) assay kit with WST-1, lipid peroxidation product (malondialdehyde, MDA) assay kit, cell lysis buffer, and BCA protein assay kit (Jiangsu, China). Roche Co. Ltd. provided phenylmethanesulfonyl fluoride (PMSF).

ON DEEP NETWORK OPTIMIZATION USING ADAPTIVE LEARNING RATES

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Abstract

The developing complexity of deep learning architectures is ensuing in schooling time requiring weeks or maybe months. This sluggish education is due in aspect to “vanishing gradients,” wherein the gradients utilized by once more-propagation are rather massive for weights connecting deep layers (layers near the output layer), and quite small for shallow layers (close to the input layer); this outcomes in slow learning within the shallow layers. furthermore, it has moreover been confirmed that during especially non-convex troubles, which includes deep neural networks, there may be a proliferation of immoderate-mistakes low curvature saddle factors, which slows down learning dramatically [1]. on this paper, we strive to overcome the two above troubles via manner of presenting an optimization method for education deep neural networks which makes use of studying prices which may be every specific to each layer in the network and adaptive to the curvature of the feature, developing the gaining knowledge of charge at low curvature elements. This lets in us to hurry up learning in the shallow layers of the network and short break out excessive-errors low curvature saddle elements. We take a look at our approach on sizable image magnificence datasets which incorporates MNIST, CIFAR10 and ImageNet, and display that our method will boom accuracy further to reduces the required schooling time over giant algorithms.

I. INTRODUCTION

Deep neural networks have been extremely successful over the past few years, achieving state of the art performance on a large number of tasks such as image classification [2], face recognition [3], sentiment analysis [4], speech recognition [5], etc. One can spot a general trend in these papers: results tend to get better as the amount of training data increases, along with an increase in the complexity of the deep network architecture. However, increasingly complex deep networks can take weeks or months to train, even with high-performance hardware. Thus, there is a need for

more efficient methods for training deep networks. Deep neural networks learn high-level features by

performing a sequence of non-linear transformations. Let our training data set A be composed of n data points $a_1, a_2, \dots, a_n \in \mathbb{R}^m$ and corresponding labels $B = \{b_i\}_{i=1}^n$. Let us consider a 3-layer network with activation function f . Let X_1 and X_2 denote the weights on each layer that we are trying to learn, i.e., X_1 denotes the weights between nodes of the first layer and the second layer, and X_2 denotes the weights between nodes of the second layer and the third layer. The learning problem for this specific example can be formulated as the following optimization problem:

$$\underset{X_1, X_2}{\text{minimize}} \quad \|f(f(A \cdot X_1) \cdot X_2) - B\|_2^2 \quad (1)$$

The activation function f can be any non-linear mapping, and is traditionally a sigmoid or tanh function. Recently, rectified linear (ReLU) units ($f(z) = \max\{0, z\}$) have become popular because they tend to be easy to train and yield superior results for some problems [6]. The non-convex objective (1) is usually minimized using iterative methods (such as back-propagation) with the hope of converging to a good local minima. Most iterative schemes generate additive updates to a set of parameters x (in our case, the weight matrices) of the form

$$x^{(k+1)} = x^{(k)} + \Delta x^{(k)} \quad (2)$$

where $\Delta x(k)$ is some appropriately chosen update. Notice we use slightly different notation here from standard optimization literature in that we incorporate the step size or learning rate $t(k)$ within $\Delta x(k)$. This is done to help us describe other optimization algorithms easily in the following sections. Thus, $\Delta x(k)$ denotes the update in the parameters, and comprises of a search direction and a step size or learning rate $t(k)$, which controls how large of a step to take in that direction. Most common update rules are variants of gradient

Using video images to recognize moving objects

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Abstract—Moving objects often contain almost important information for surveillance videos, traffic monitoring, human motion capture etc. Background subtraction methods are widely exploited for moving object detection in videos in many applications. Moving object segmentation is the application in video processing. Segmentation helps in detecting various features of moving objects for further video/image processing. In this paper object detection and segmentation is proposed and they are compared using SIFT algorithm (object tracking) and segmentation algorithm (edge detection and thresholding). The experiment results show that the proposed method gives best results.

available, it becomes obvious that the foreground objects can be obtained by comparing the background image with

the current video frame. It focuses on two major steps: First,

Index Terms— Moving Object Segmentation, Background Subtraction, Edge Detection and SIFT(Scale Invariant Fourier Transform)

I. INTRODUCTION

Detection and segmentation of moving objects in video streams is an essential process for information extraction in many computer vision applications, including video surveillance, human tracking, traffic monitoring and semantic annotation of videos. Surveillance system uses video cameras to monitor the activities of targets (human, vehicle, etc.) in a scene [1]. In order to obtain an automatic motion segmentation algorithm that can work with real images there are several issues that need to be solved, particularly important are: noise, missing data and lack of a priori knowledge. One of the main problems is the presence of noise. For some applications the noise level can become critical. There are three conventional approaches to moving object detection: background subtraction, temporal differencing and optical flow [2].

Background subtraction is one of the most popular methods for novelty detection in video streams. Background Subtraction generates a foreground mask for every frame. This step is simply performed by subtracting the background image from the current frame. When the background view excluding the foreground objects is

Magnetic properties and Eu(As,Fesuperconducting)

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Abstract

*EuAsFeO_{0.85}F_{0.15} with a critical temperature T_c 11K was synthesised in a solid-state synthesis process. In magnetic fields ranging from 0.1 to 140000 Oe, its electric and magnetic characteristics have been studied. Magnetic penetration depths and coherence lengths have been determined by measuring critical magnetic fields H_{c1} and H_{c2}. At low temperatures, the temperature dependency H_{c2} (T) shows evident hyperbolic-like behaviour. It was found that compounds doped with rare-earth elements that have tiny atomic radii had higher than average concentrations of T_c and H_{c2}. The PACS score is 74.70. Ads * Please use the following address for any correspondence: dmitriev@ilt.kharkov.ua. Special properties of rare-earth metals, include superconductivity and magnetism*

Introduction

It was first reported in 2008 that LaFeAsO_{1-x}F_x was superconducting at a temperature of 26K [1]. Ce [2] and Sm [3] replacements soon boosted the critical temperature T_c to 40-43 K, and even to T_c 52K with Nd and Pr [4,5] substitutions. Another interesting fact about the SmFeAsO_{1-x}F_x samples was that their superconducting transition temperature was T_c 55 K [6]. As a result, the new category of chemicals may be classified as high-T_c superconductors. The T_c rise seen in rare-earth REBaCuO systems is quite similar to this instance. Furthermore, band-structure predictions and observations show that the novel compounds have a complex mechanism of pairing (called pnictides). Accordingly, it is clear that the inclusion of Fe and Pr in superconducting compounds confirms this view. For example, the La₂O_{2-x}F_x and Fe₂As₂ layers in the new superconductors [1] resemble HTSC topologies. Unlike the CuO₂ layers in cuprates, which operate as carriers of electron states near the Fermi surface, the FeAs layers act as carriers of current. Charge carriers are provided by the LaOF layers.

These compounds, which include rare-earths-like Ce and Pr, have been synthesised recently by a variety of organisations.. It has been discovered that the maximum T_c may be achieved in fluorine-containing compounds (x = 0.1-0.2). T_c is also larger for rare-earth elements with lower atomic radii [3]. The study's purpose was to see whether a rare-earth element with a high atomic radius may reduce the REFeAsO_{1-x}F_x compound's critical temperature T_c. That the value and temperature dependency of the H_{c2} upper critical magnetic field may be affected by this is also fascinating. A typical superconducting magnet may be used to extend the observation of H_{c2} (T) behaviour to lower

temperatures if H_{c2} is much lower than the published data. The atomic radius of Eu is 0.2023 nm, hence we've picked it as our RE ion. To ensure high T_c, atoms of rare-earths have atomic radii in the range of 0.1755 to 0.1855 nm, with F content of 0.1-0.18, the ideal doping.

Experimental details

For 24 hours at T=11500 C, we synthesised EuAs, EuF₃, Fe and Fe₂O₃ compounds in an ampoule to produce polycrystalline EuAsFeO_{0.85}F_{0.15}. Additionally, the homogenization process was carried out for 30 hours at the same temperature. The electric resistance of the produced superconductors was studied using the four-probe technique in magnetic fields H up to 14 T on 5x1x1 mm samples cut from tablets. Accurate measurements of magnetic AC susceptibility and DC magnetization were made using a PPMS device.

WITH THE HELP OF MQL, A REVIEW OF THE LACK OF WEAR ON THE TURN

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Abstract

Turning is a technique used to extract unwanted materials from solid steel, with the ultimate goal in mind to achieve its desired size and shape. The finished part can be formed by rotating the working part to experience the auxiliary process, for example, granulating and lapping. The cutting speed used in the turn is very high and dry cutting conditions are commonly used. The output between hard turns is much higher than traditional matching. Standards of strict pollution control on spinning, waste, emissions, well-being and worker production, Company mission & Vision, Expanding companies to reduce refrigerant costs, powerful management, low transfer, discharge standards to reduce oil (MQL) metal-metal appeals. Companies operating worldwide. MQL prepares the way for the transmission of a small measure of liquid cutting in the form of compact air mist between the cutting tool and the workpiece. Thus, it is responsible for that warm age and the chip clearance at the interface between the cutting tool and the workpiece is limited and better by using the MQL method.

Keywords: MQL supply system, NDM, Turning process, Carbide cutting tool, Lubricant cutting fluid

1. Introduction

To increase tool life, improve machining accuracy and surface finish, cutting fluids are widely used, which can also be used for chip disposal. Now-a-days, it is necessary to use chlorine-free and to target mitigating the consumption of cutting fluids.

For global environmental protection, the use of high-volume cutting fluid increases the cost of disposal of the same ie, waste reducing fluid. Lubricants are widely used to reduce friction and to cool tool-chip and tool workpiece interfaces during the machining process. Also increasing the life of tool,

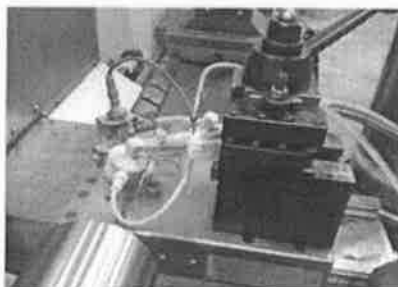
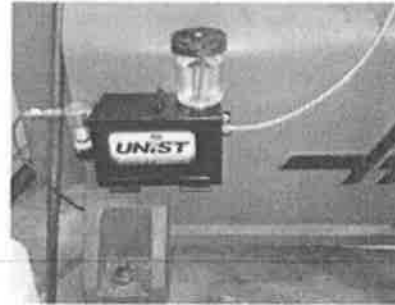


Fig 1: a) MQL supply with cryogenic



b) MQL supply system

For Manufacturing Spectrum industries, the large amount usage of coolant (lubricant) indicates an increase in the machining cost of the product. In the opinion of some researchers, they found that the cost of cutting the fluid is usually related to the cutting tool. In today's scenario, it is important to consider economic factors (improving production efficiency and energy savings) as well as environmental factors (fluid reductions and reduction of human toxicity and waste) at the same time. Therefore, formulating economic and environmental policies, MQL (minimum volume lubrication) has been achieved and rigorously researched. Removable probes are made near dry machining and dry machining of Minimum Quantity Lubrication (MQL). Researched some impressive results with such technology. Turning is one of the machining processes in which the tool is fixed in the tool holder and requires feed in linear motion to remove the metal and by rotating the work piece at the other end. Turning processes support crosswise on the lathe machine, which is labor intensive as a fast machine tool and can be of four types such as profiling, straight turning, external grooving or taper turning? One kind of such Categories of turning processes can produce different sized materials such as straight, conical, curved or oval shape work pieces. Typically, turning uses simple single point cutting tools. Each group of work piece materials consist the right set of tool angles developed over the years. The equipment should then tighten the work piece material. In the case of hard turning of tungsten, die steel etc., the equipment

ROBO ENGINEERING FOR MULTI-TERRAIN

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ABSTRACT

Due to the rapid progress in the field of robotics, it is a high time to concentrate on the development of a robot that can man in all type of landscapes, ascend and descend stairs and sloping surfaces autonomously. This paper presents details of a prototype robot which can navigate in very rough terrain, ascend and descend staircase as well as sloping surface and cross ditches. The robot is made up of six differentially steered wheels and some passive mechanism, making it suitable to cross long ditches and landscape undulation. Static stability of the developed robot have been carried out analytically and navigation capability of the robot is observed through simulation in different environment, separately. Description of embedded system of the robot has also been presented and experimental validation has been made along with some details on obstacle avoidance. Finally the limitations of the robot have been explored with their possible reasons.

INTRODUCTION

Multi Terrain Robots are the category of mobile robots that are capable of showcasing excellent off-road performances. They are able to navigate across bumpy and rough terrains. They mainly have wheels or tracks for locomotion. ATRs have various link mechanisms in order to overcome various sized obstacles. It is always desirable that the ATRs will be autonomous, that is, it will sense its environment with the help of sensors and then will take further decision on its own, with the help of instructions. The goal of this work was to conceive and build a mobile robot which will be a wheeled rover having good off-road capabilities, good grip over undulating, rough terrain, variable size obstacle negotiation capability, staircase ascending and descending capability, ditch/crevasse crossing capability and generating stable motion in undulating surface.

BLOCK DIAGRAM

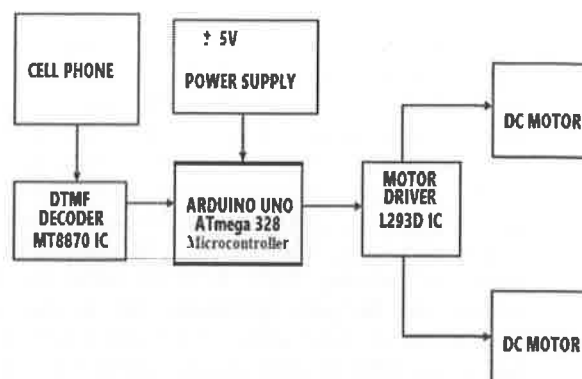


Fig 2.1 Block Diagram of Multi Terrain Robo

HARDWARE COMPONENTS

3.1 BLUE TOOTH

Bluetooth is a standard used in links of radio of short scope, destined to replace wired connections between electronic devices like cellular telephones, Personal Digital Assistants (PDA), computers, and many other devices. Bluetooth technology can be used at home, in the office, in the car, etc. This technology allows to the users instantaneous connections of voice and information between several devices in real time. The way of transmission used assures protection against interferences and safety in the sending of information.

Between the principal characteristics, must be named the hardness, low complexity, low consume and low cost. The Bluetooth is a small microchip that operates in a band of available frequency throughout the world. Communications can realize point to point and point multipoint.

How it works?

Every device will have to be equipped with a microchip (transceiver) that transmits and receives in the frequency of 2.4 GHz that is available in the whole world (with some variations of bandwidth in different countries). Besides the information, there are three channels of voice available.

Overview of the CLEF 2010 medical image retrieval track

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Abstract:

It was decided to hold the seventh round of the ImageCLEF medical retrieval assignment in 2010. Like the collections in 2008 and 2009, the 2010 collection includes photographs and captions from the Radiology and Radiographics journals published by the RSNA (Radiological Society of North America) as well as other sources (Radiological Society of North America). Three sub-tasks were completed under the auspices of the medical task: modality identification, image-based retrieval, and case-based retrieval, all of which were completed under the auspices of the medical task. The goal of the modality identification task was to ascertain the mode of acquisition of the images in the collection by utilising visual, textual, or a combination of approaches to identify them. When performing an image-based retrieval task, the goal was to return an ordered set of images from the collection that best met the information need specified as a textual statement and as a set of sample images, whereas when performing a case-based retrieval task, the goal was to return an ordered set of articles (rather than images) that best met the information need specified as a description of a "case." The number of research organisations registering for the medical task has increased to 51 from the previous number of registrants. The number of groups submitting runs, on the other hand, has remained constant at 16, with the total number of submitted runs increasing to 155. Ad hoc runs made up 51 of them, while case-based runs made up 48 and modal-ity classification runs made up the remaining 46 (see table below). The best results for the ad-hoc retrieval themes were obtained via the use of mixed approaches, with textual techniques also providing satisfactory results. For the

case-based topics, textual means were unquestionably preferable. While textual and visual tactics alone were somewhat successful in the modality de-tection test, it was the combination of these approaches that proved to be the most effective.

1 Introduction

It is currently known as labs, and it is made up of a set of pre-planned evaluation tasks that are carried out. 2 Participation, data sets, tasks, and ground truth are all critical considerations in every project. This section goes into great depth on how the medical retrieval task was set up and how I was able to participate in it over the year 2010. Participation is encouraged (paragraph 2.1) ImageCLEF received registrations for its four sub-tasks from a new record number of 112 research groups in 2010, representing a decline from the seven sub-tasks that were registered in 2009. It was a record-breaking 51 people who registered for the medical retrieval task, and 16 of the participants produced results to the tasks, which was approximately the same number as in previous years, according to the organisers. Each of the following groups submitted a minimum of one run each:

–AUEB (Greece);

–Bioingenium (Columbia)*;

–Computer Aided Medical Diagnoses (Edu??),*;

–Gigabioinformatics (Belgium)*;–IRIT (France);

–ISSR (Egypt);–ITI, NIH (USA);

Multimodal Medical Image Fusion Simulation Based on Matlab

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Abstract:

It is a prominent research topic in the area of medical image processing to explore medical image registration and fusion technology, which is based on medical image registration. Aside from being able to overcome the limitation of just using a single photo, it properly depicts the medical image information of the patient more organically, and it provides a plethora of information, such as human anatomy, about the different image settings. Anatomy, physiology, pathology, and other related subjects are all addressed in this course. As a consequence, more detailed image information for clinical applications is provided. An approach to diagnosing and treating that increases the effectiveness and accuracy of diagnosis and therapy in the realm of medicine in order to make clinical diagnosis and treatment easier to understand. Multimedia medical image fusion is a relatively new method that was developed in the 1990s. A system that combines medical image processing and medical image diagnostics into a single package is known as medical image fusion. It's a rather short process. The growth of medical imaging technology and clinical practise is significantly influenced by developments in the field of development. The importance of diagnosis and treatment cannot be overstated. It is described in this study how typical techniques to multimedia medical image fusion might be improved upon. Incorporated into the Matlab environment to carry out simulation studies; this acts as a reference for other simulation investigations. Professionals and non-professionals in related areas are both invited to participate.

1. Introduction

In recent years, the rapid advancement of computer technology, along with the onset of the information age, has led in medical imaging becoming an increasingly significant component of current medical technology. In addition, in part due to the fact that the imaging principles used by different types of imaging equipment are varied, the images generated by different modes have their own individual properties. There are pros and cons to doing business online. When working in this environment, it is critical to make full use of the present imaging equipment to its fullest capacity. Image fusion technology, which can combine visual information from a range of disparate sources, should be investigated. It has long been acknowledged that the capacity to visualise items and represent them as a whole is highly valued by those working in related fields. The objective of this research is to find out more about This section contains an examination of common multimodal medical image fusion methodologies, as well as simulations of real-world medical picture fusion scenarios. For the purpose of conducting the search for professionals in relevant areas, a Matlab environment was employed. A reference has been provided by a member of the staff as well as fans who are not professionals

2. A strategy for merging multimodal medical images in a single image.

There are three layers to the technique used in medical picture fusion: at the pixel level, at the feature level, and at the decision-making level. At Pixel-level fusion is currently widely used in a variety of applications. At the same time, it acts as a basis for the two fusions that come after it. methods. As the name implies, the major emphasis of this investigation is on the pixel level method. Fusion operations are carried out in accordance with the material's qualities. Based on its essential concepts, it may be separated into two groups: the method of spatial domain fusion and the technique of spatial domain fusion. Transformation of the domain using a method There is no connection between these two operations, and they are absolutely different from one another. It is possible that, in many algorithms, a combination of the two procedures will provide a better fusion result than each strategy alone.

2.1 Methods of multimodal medical image fusion that are often used in clinical practise.

A number of methodologies may be used to achieve multimodal medical picture fusion. Here are some examples. This varies depending on the topic matter of the article. In the field of spatial domain fusion, there are two kinds of

Criminal Detection Using Face Recognition System

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ABSTRACT

The face is crucial for human identity. It is the feature which best distinguishes a person. Face recognition is an interesting and challenging problem and impacts important applications in many areas such as identification for law enforcement, authentication for banking and security system access and personal identification among others. Face recognition is an easy task for humans but it's an entirely different and difficult task for a computer. Face recognition based on the geometric features of a face is probably the most instinctive approach for human identification. The whole process can be divided into three major steps where the first step is to find a good database of faces with multiple images for each individual. The next step is to detect faces in the database images and use them to train the face recognizer and the final step is to test the face recognizer, if it recognizes the faces it was trained with. There is an abnormal increase in the crime rate and also the number of criminals. This leads towards a great concern about the security issues. Crime prevention and criminal identification are the primary issues that police personnel face. With the advent of security technology, cameras especially CCTV have been installed in many public and private areas to provide surveillance activities. The CCTV footage can be used to identify suspects on the scene. The model will be able to recognize criminals, whose pictures the model is initially trained with, using Convolution Neural Networks, Artificial Neural Networks and OpenCV and further send a message to the cops about the location and other details of the criminal.

Keywords: Criminal Detection, Face Recognition, Artificial Neural Networks, Convolution Neural Networks, OpenCV

1. INTRODUCTION

In recent years, we've seen that there has been a marked and sustained growth in the use of Closed Circuit Television (CCTV) surveillance cameras in order to prevent crimes in public places. With the ever growing installation of advanced CCTV infrastructure, almost entire cities can now be monitored, through the major purpose served by the same is purely evidential. It would only be natural to expect an alert or warning system for ongoing (or about to happen) mishaps and crimes, where timely action can be the difference between life and death. Such scenarios are expected to be monitored and identified by personnel viewing live footage. But as the number of CCTVs per unit is keeping rising, this approach is becoming increasingly impractical. Thus what we require is a surveillance unit capable of

thriving in these situations with negligible human input. We shall define a "situation of interest" or a "critical situation" as any sensitive situation that could possibly lead to the afore-mentioned predicaments. Consider the idea of a smart surveillance which would be triggered 'active' only when the statistical chances of the situation being of "interest" are high. The video feed would be recorded only under a "situation of interest" in case it needs to be documented for a legal investigation. In the response to the above trigger could be an alert to be issued to the appropriate authorities along with certain alarms which could help in preventing the situation from escalating further. So, this validates the requirement for a system which could provide smart surveillance, while ensuring privacy and confidentiality.

The surveillance camera activated for recording only when there is a situation of interest. The camera is inactive or it is not recording the video when there is no human presence. The human presence is checked using motion detection algorithm. When a crime is about to be committed, then the human is notified and an alarm system connected to the main system will be activated.

2. Literature review

Choi Woo Chul and Na Joon Yeop: The orders of priority about the intelligent crime prevention technologies & system based on spatial information (e.g. Positioning System, CCTV Technology, and Integrated Management System) are constructed for integrated management in Testbed (Crime-Zero Zone) of Smart City.

[2] Yuchae Jung and Yongik Yoon: In this paper, we propose an abnormal behavioral tracking model for prediction of abnormal situation by using Expectation Maximization (EM) algorithm combined with Viterbi algorithm. The tracking model will detect objects from CCTV image in dynamic environment for the

SOLAR BASED E-UNIFORM FOR SOLDIERS

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ABSTRACT

Soldiers working in harsh climates will benefit from the improved protection provided by solar-powered E-Uniforms. The E uniform's interior electronics is powered by solar panels. Rechargeable lead acid batteries are used to store energy. It is possible to charge a battery using a regular battery. All functions are controlled by the LPC2148 microcontroller. In order to show battery voltage on a 16X2 LCD, an ADC voltage sampler is connected to the system. A new E-Uniform built for troops who operate in adverse weather conditions has been presented in this study. The soldier will be more comfortable working in a variety of settings thanks to this uniform. The circuit is installed on a jacket.

INTRODUCTION:

The Internet of Things (IoT) was first thought of as a network of devices with unique identifiers. Remote computers linked to the Internet might be used to track, control, or monitor the gadgets. IoT expands the usage of Internet providing the communication, and hence internetwork of the devices and physical things, or 'Things'. The two important terms in IoT are "internet" and "things". When you think of the Internet, you're referring to a worldwide network of interconnected servers, laptops, tablets, and smartphones. The Internet facilitates the exchange of information. There are a plethora of ways to say "thing" in the English language. Thing, as defined in the Oxford English Dictionary, is an expression that may refer to anything from a physical item to a concept to a situation or activity. Devices and physical items may connect with each other and collect data in distant places, making it possible for the Internet of Things (IoT) to be used in a variety of activities and services. In this vision, integrated sensors, computers, and communication devices are used to make everyday items (watches, alarm clocks, and other wearables) smart and alive by interacting with distant objects or people through connection. The scalable and resilient nature of Cloud computing is enabling developers to design and host their apps on it. IoT and the cloud go hand in hand since the

cloud serves as a platform for storing and retrieving sensor data from many locations[11]. These causes gave birth to the fusion of both technologies therefore leading to the establishment of a new technology called Cloud of Things(CoT) (CoT). It was possible to access, monitor, and operate the objects (nodes) in CoT from any distant place through the cloud. Due to tremendous scalability in cloud any number of node might be added or withdrawn from the IoT system on a real time basis. IoT may be summarized as an equation: Physical Object + Controller, Sensor, and Actuator + Internet = Internet of Things. With the rise of the Internet of Things, establishing a Smart City is now a reality.

EMBEDDED SYSTEM:

It is a computer system that includes both hardware and software. All of the components of a bigger system may be integrated into an embedded system. embedded systems may be found in a wide range of products, from industrial machinery to vehicles and medical equipment to cameras and domestic appliances to vending machines and toys.

We can't do anything with an embedded system, therefore it's called that. For example, we can only wash our clothing with a washing machine. We shall only use a microwave oven to heat the items. But we did come up with a general-purpose system of our own. Using a laptop, for example, we create the numerous apps. Word documents may be created, for example, in Microsoft Office.

In the past, a mobile phone was only used for a single application. As a result, it falls within the category of an embedded system. Nowadays, smartphones are regarded as "general purpose systems" since they are capable of performing a wide range of functions.

A SYNDICATE BANK STUDY ON TRAINING AND DEVELOPMENT

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ABSTRACT

Never before has the rapid increase in new knowledge and technology and in the base of change and itself demanded a learning response as great as what is now required to remain competitive. Today individuals and organizations must become continuous learners to survive and hence it is not surprising to find that most successful organisations operate in a continuous learning mode.

The challenge of globalization, technological innovation increasing competition and growth through expansion, diversification and acquisition has had a wide-ranging and far reaching impact on HRD. There is a need for a continuous process that aims at providing fresh knowledge and skill inputs to the employees so as to ensure the development of their competencies, dynamism, motivation and effectiveness in a systematic and planned way, thereby improving the productivity and overall organizational effectiveness. As a result, training and development activities have acquired great significance and are now firmly centre-stage in most of the organizations. Hence it can be said that with the advent of free market economy rapid change in the environment, training and development activities have assumed an importance never before witnessed in Indian corporate history.

Training is the process of assisting a person in enhancing his efficiency and effectiveness at work by improving and updating his professional knowledge developing his personal skills relevant to his work and cultivating in him appropriate behavior and attitude towards his work and people he is working with. Development takes place as a result of training and essentially implies growth plus change. Thus, training and development go hand in hand. My endeavor has been to gain an in-depth insight into the process of discovering, harnessing and developing of the human capital to the benefit of both the individual and the organization into days highly dynamic and competitive business world through a comprehensive study and analysis of the latest training and development techniques.

In terms of training design the trainer needs to be alert to the demands made by:

- Learning
- Behaviour

Results required

For best effects it is important to consider what a particular piece of training will deliver in terms of new knowledge, skills, idens and abilities and also what the individual will do with that learning in their job. The trainer will need to develop a design,

which includes or specifies how the learner is to transfer what they have learned to their workplace and integrate it into day-to-day standards and behaviours. The final issue to be considered is how the required results can be measured and be seen to have resulted from the training provided.

Employees sent to various programs need to be evaluated so as to ascertain the effectiveness of the program. Many people agree to the basic fact that no much of a systematic effort towards evaluation exists in the organization. Goods evaluation is based on careful specification of training objectives and performance measures that will be used to determine if the training objectives have been successfully achieved.

INTRODUCTION

It is necessary for any business to have employees that are well-trained and experienced in order to accomplish the duties that must be done. In today's dynamic businesses, work is getting more complex, and the need of staff education and training is becoming increasingly evident. When professions were basic, easy to acquire, and only marginally impacted by technological advances, there was no need for employees to keep their skills and knowledge up to date, as was the case in the past. In the modern world, the situation has, however, radically changed. The transfer and tuning of employee skills is necessitated by the rapid movement of job responsibilities and their adjustment.

When a learning event is designed to instill a relatively permanent change in an individual that will improve their ability to perform on the job, this is referred to as training. New skills, knowledge, attitudes, and behaviors may be learned via training, which can lead to the development of new abilities. The ability to improve performance is a pre-requisite for improved human resource preparation for new jobs, promotions, and the transfer to more up-to-date equipment and technology. Staff at all levels need refresher training from time to time in order to avoid personal obsolescence and enhance competence in order to advance to higher positions within the

A RESEARCH ON THE SELECTION AND RECRUITMENT PROCESS AT DELOITTE INDIA

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ABSTRACT

Recruitment and selection are frequently referred to as "talent acquisition" in the workplace, and they are one of the most important components at the outset of human resource management. Employee ability, education, skill, experience, personality characteristics, and motivation are all elements that contribute to the company's success. A successful recruiting and selection procedure will help the company expand. The primary goal of this research is to investigate the Big Four accounting firms' recruiting and selection processes. The odds and evens of the Big Four's policies are highlighted in this study report. Apart from labor capabilities, India has its own edge in becoming a natural center for outsourcing, with fast development in infrastructure to support the country's improving future. One of them is the Big Four, which consists of the world's four biggest accounting companies. The major four accounting firms are Deloitte, PwC, EY, and KPMG. The Big Four was formerly known as the Big Eight, which was then shortened to the Big Six, then the Big Five, and ultimately the BIG FOUR, which was established only after the death of Arthur Andersen in 2002. The research is analytical in nature, and the information was gathered from secondary sources such as business workers, online journals, and research papers. Although recruiting and choosing the appropriate applicant for the organization is a time-consuming process, it may be done quickly if the organization has a well-defined policy in place.

INTRODUCTION

Arranging individuals as an action in any firm is presently significant. It is a significant segment of an association. Human asset arranging is a pivotal factor in the drawn out achievement of the organization. There are sure systems through which each association should be followed, to guarantee that it has enough measures of staff at the ideal opportunity to accomplish its ideal goal.

HR arranging, enrollment and choice, arrangement and improvement, profession arranging, move and advancement, hazard the executives and execution assessment are the goals of the Department of Human Resources. For every target explicit consideration and satisfactory readiness and execution are required. Any organization should have a certified individual in the right position. Enrollment and choice assume a critical part in the present circumstance. The absence of abilities and utilization of new innovation put impressive focus

in transit in which organizations enlist and select laborers. There is an essential survey of the enlisting and choice cycle. In this specific circumstance, the task is prepared to explain the way toward enrolling and determination. The task incorporates enlisting and choice strategies and definitions, enrollment prerequisites, enrollment appraisal, enlistment proposals.

Wellsprings of enrollment from which an association gets a reasonable solicitation. The association ought to follow the logical enlisting and determination for the significant staff. Occupation examination giving an understanding into the work need. The following choice cycle incorporates choice stages, test sorts, kinds of meetings, average meeting issues and cures. Approaches, strategies on logical determination, Indian choice and troubles. Enlistment and choice are simultaneous and deficient without one another. They are critical and separate segments of the association. Since these issues need genuine models and explanations, the task covers the enrolling and determination interaction of Infosys. Also, a pragmatic contextual analysis. It likewise contains addresses of many top arrangement subject matter experts and the value list for the magazine.

Informal determination and employing:

The choice of applicants was verifiably affected by odd notions, feelings, individual wounds and the board enrollment and staff determination.

The effect of this non-logical enrollment is generally:

- Low efficiency of work
- High turnaround
- Excessive misuse of crude material
- More mishaps and related misfortunes of the association
- The wasteful activity of the entire association and ultimately

Reliable Connection Between the Base Plate and the Exposed Column in Special Moment-Resisting Frames

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Abstract :

Many steel moment-resisting frame homes suffered failure at their column base connections throughout the 1995 Kobe, 1994 Northridge and 1989 Loma Prieta earthquakes. machine reliability analysis of an exposed moment-resisting base plate connection designed for a low-rise metallic special second resisting body is carried out the usage of a structural reliability evaluation software. Modes of failure of the column base are described the use of a restriction system based at the AISC layout manual No. 1-2005. The foremost failure modes of the uncovered column base consist of: yielding of the base plate on the compression aspect, crushing of concrete, and shear failure because of sliding of the bottom plate and bearing failure of the shear lugs in opposition to the adjacent concrete. Sensitivity evaluation is completed to decide the affects of restriction-state and distribution parameters on the reliability of the device. on the demand aspect, the cantilever duration of the base plate extending past the column pass phase and the bending second at the column base are observed to be the principle parameters influencing the failure of the column base connection. at the capacity aspect, the thickness of the bottom plate and the energy of metal are the principle parameters influencing the reliability of the connection. Fragility curves are advanced for every failure mode of the column base plate as well as for the connection as a gadget. these are expressed as a characteristic of the spectral acceleration at the primary mode length of the constructing.

key phrases: steel base plate connection, reliability analysis, second resisting body.

1. INTRODUCTION

A typical column-base connection between the column of a steel moment-resisting frame (MRF) and its concrete foundation, commonly used in US steel construction today, consists of an exposed steel base plate supported on unreinforced grout and secured to the concrete foundation using steel anchor bolts. This moment-resisting connection is generally subjected to a combination of high bending moments, axial and shear forces. A number of steel buildings, particularly low-rise moment resisting frame systems, developed failure at the column-base plate connection during the 1995 Kobe, 1994 Northridge and 1989 Loma Prieta earthquakes. It was found (Bertero et.al, 1994; Youssef et al, 1995) that the rotational stiffness and strength of the base plate assemblages affected the damage these structures suffered not only directly in the column bases, but also in other regions of their lateral load resisting frames.

A number of methodologies for the design of column-base plate connections under various load conditions are found in the literature. The most recent method presented in the AISC Design Guide No. 1-2005 (Fisher and Kloiber, 2005) is already widely implemented in current US engineering practice.

Reliability analysis of a column base connection in a MRF, obtained using the AISC Design Guide No. 1-2005 procedure, has not been carried out to date. Yet, such reliability analysis is needed to assess the safety of this important structural component with respect to its diverse failure modes and to evaluate the adequacy of the design method and limit-state formulation. A sensitivity analysis of the different components of the column base connection is needed to identify the critical parameters in the design process. These issues are the focus of the present paper.

2. RELIABILITY ANALYSIS

Seismic design of an exposed column base connection in a typical low-rise moment resisting frame is carried out in the US following the AISC Design Guide No.1-2005 procedure. In this paper, the column base connection of an exterior column of the ATC-58 3 story-3 bay MRF office building, which is located on the University of California at Berkeley campus (Yang et.al, 2006), is used as an example. This connection is shown in Figure 1.

For seismic analysis of residential buildings, Etabs can be used.

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Abstract

In a burst of energy, seismic waves force the Earth to quake. Earthquakes cause structural damage because seismic waves flow through the soil. This affects the building, the foundation, the soil, and the whole system. The distribution of mass, strength, and stiffness in a building has an impact on the structure's response to an earthquake. Structures are subjected to a wide range of conditions during the course of their existence. A combination of dead and live loads, as well as earthquakes, may create both static and dynamic forces. To evaluate the seismic reaction of (G+15) residential structures in Zone III and Zone V, ETABS employs response spectra and time history methodologies. It is possible to quantify things like floor displacement and drift as well as floor shear, depending on the zone. Here, you'll find terms like Response Spectrum, Response Spectrum Method, and Response Spectrum Scaling.

INTRODUCTION

Earthquake waves produce far larger ground vibrations on the surface of the soil than on the rock's base. Because of their proximity to the rock face, areas closer to the cliff face are more vulnerable to damage. cyclones, earthquakes, flooding and so on have all been a continual danger to human life and property. There has been progress in the development of a disaster warning system, the implementation of preventive measures, and so on. Low, medium, or catastrophic losses in lives and property may occur in a matter of seconds, depending on the earthquake magnitude. While it's doable, there's no way to completely avoid it. We know that preventing and reducing the effects of earthquakes is a global problem. New challenges are necessary before the competition can reach new heights. As the building climbs in height, the structural toughness becomes more critical. Increases in the height of tall structures result in an array of loading effects, including lateral loads like seismic forces, which may have very high loading values. A designer's capacity to deal with lateral loads is becoming more critical.

This research uses ETABS to analyse (G+15)story RC structures subjected to seismic stresses in Zone III and Zone V. IS 1893 (Part 1):2002 requires the monitoring of several loads. This study focuses on four different forms of dynamic analysis.

Different kinds of moments, forces, and displacements for

diverse structures, such as rectangular and L-shape shapes. Structures in the form of a L [1] There is a big difference between the joint displacement values and the rectangular constructions. Buildings with several stories are now being studied for ETABS-based seismic analysis. Various building shapes, mass irregularity, and other factors were taken into account. Reduced storey height causes an increase in the torsional irregularity coefficients. At several levels of a structure, wind and seismic loads are evaluated. If lateral systems are implemented, the structure's stiffness is improved to better handle lateral stresses.

RESEARCH SIGNIFICANCE

The objective of this paper is to study the seismic analysis of residential building for Zone-III and Zone-V regions using ETABS. The modeling and analysis can be prepared for RC multi-storey building for various types of zones. With increase in time, population of India is increasing. So, there is a need for more housing and infrastructure facilities. In recent years, people were shifting to urban places due to jobs and for living purposes which results in large population in cities. So, number of structures and buildings required is very high in cities. This increases pressure on agriculture land near cities. The land becomes scarce which results in multi-storey structures in cities. Since the land is limited, there is a need for vertical improvement in the form of tall structures. This results in saving the agriculture land to grow food items. From this, multi-storied buildings are important to be considered.

METHODS CONSIDERED

Response Spectrum Method

It is linear dynamic analysis. It determines the response in each mode of vibration and overlay the responses in several modes to attain the total response. Response may be in the appearance of deformation, acceleration etc. A graph between maximum response and natural period is called response spectrum.

Time History Method

It is nonlinear dynamic analysis. In this method, the building is subjected to accelerations from earthquake records which represent the expected earthquake at the base of the structure. It gives the structural response through and after the time of application of load.

Evaluation of the Seismic Risk for Existing Concrete Buildings

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ABSTRACT:

Recent earthquakes in India have shown the fragility of existing reinforced concrete buildings. Multi-story structures in Gujarat's metropolitan areas have been severely damaged by the 2001 Bhuj earthquake. Existing Indian RC structures, most of which were built to withstand gravity loads, were in grave danger. As a result of previous earthquakes, it became evident that old buildings needed to be reassessed for seismic safety. In a nation like India, where earthquakes are common, a streamlined assessment procedure is required to carry out a seismic evaluation. It's critical to figure out how earthquake-resistant and risk-management-friendly a structure is. The present design of a reinforced concrete bare black frame, infill frame, and infill frame and soil impact is evaluated using the Response Spectrum analysis approach. This model's performance is evaluated using response spectrum analysis (RSA), which is a seismic evaluation technique. Each format's analysis reinforcement is calculated and retrofitted appropriately. Another retrofitting approach is investigated in this paper. Additionally, in seismic evaluations of existing RC structures, infill plays an important role. Upgrading and masonry infill wall are the main topics of discussion., reinforced cement, upgrading,

INTRODUCTION

Among the many natural disasters, earthquakes may do significant damage to man-made buildings. Engineering techniques need to be honed in order to analyse earthquake structures since their forces are random and unexpected. India has seen several of the world's largest earthquakes in the recent century. More than half of the nation is designated earthquake-vulnerable. The whole Himalayan belt, including the north-east area, is vulnerable to significant earthquakes with magnitudes of higher than 8.0.



Fig 1: Area expose to seismic risk in Indian Classification

Four big earthquakes struck the nation in the recent century: a large one in Assam in 1897, a smaller one in Kangra in 1905, a larger one in Bihar Nepal in 1934, and a smaller one in Assam in 1897. (1950). We've seen a number of recent earthquakes, including the Bihar Nepal earthquake in 1998, the Killari earthquake in 1991, the Jabalpur earthquake in 1999, and most recently the West Bengal earthquake in the last few years (2011). All of these earthquakes have resulted in a massive loss of life and extensive damage to existing reinforced concrete (RC) structures. The most recent structures in metropolitan areas are badly planned and constructed.... Older buildings may not be able to meet the more strict requirements of IS 1893(Part 1):2002, IS 4326:1993 and IS 13920:1993, even

Research, testing, and design for cold formed sections that comply with AISI code

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ABSTRACT

Hot-rolled steel members have been used in the building sector for a long time. Light or moderately loaded structures can't benefit from hot rolled steel parts since they add weight. This issue has been solved by the development of cold formed steel (CFSS). Metal construction in the United States has relied on Z-purlin and other cold-formed steel products like it for more than 40 years because of the broad variety of applications, low cost and ease of production, as well as good strength-to-weight ratios. Z purlins are prevalent in roofing systems with low stress and modest spans. The literature review covers both stiffened and un-stiffened Lip channel portions. The tensile test was carried out using a Z-section test specimen that met with IS1608-2005. Mathematically-created cold-formed object.

Sections created via channelling, cold forming, and lip forming are all included in this category.

Introduction

Hot Rolled structural parts are widely used in construction. "Hot rolled members" are referred to as such because of the high temperature at which they are formed. After decades of improvement, hot rolled steel is all but extinct. Cold-formed steel members first appeared in American and British construction about 1850. In 1939, AISI supported research at Cornell University conducted by George Winter made steel members widespread. That wasn't until 1940 that steel members became common. George Winter was the primary researcher. Cold-formed steel sheets with a thickness of 1 to 3 mm are often used, and they are fabricated at room temperature. For the same reasons, it is also known as a light-gauge steel member. Due to the production method, these components are separate from hot rolled steel sections. Cold-formed sections manufactured from steel sheets typically need a yield strength of 280 N/mm². Steel plates, sheets, and strips are often used in the fabrication of cold-formed steel structural parts. The material is pressed or cold rolled into shape during the production process. These fundamental forms are often made using the press-braking procedure. Panels for walls, floors, and ceilings are most often made using the cold roll forming process. Zees and Cees are two instances of structural components that were created. Sheets and coils up to 1.5 metres wide and 1,000 metres long may be used to make sections.

Component Rigidity

An element that is sufficiently supported in the longitudinal directions by two adjacent components is considered stiffened in the stress direction. Due to the existence of flange supports, the web serves as a compression stiffening element in a channel segment. At least one-fifth of its full width is required for an element to be strengthened. The lowest moment of inertia between neighbouring parts for stiffened components has been calculated by AISI. Stiffened elements don't matter how thin they are, provided that the following requirements are satisfied. For stiffened components, AISI has developed a formula for the minimal moment of inertia between neighbouring parts.

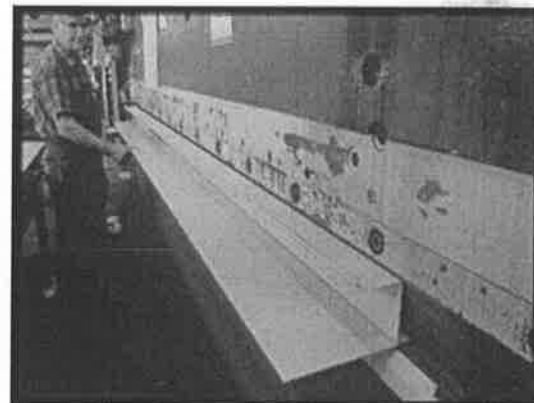


Figure 1: Example of Press Brake Operation



Figure 2: Image showing Rolled Formed Operation Un-stiffened Element

Because the unstiffened portion is held only at one edge, just one longitudinal edge is being supported in the direction of stress. There is just one longitudinal length where flanges are supported in channel sections. A lack of protection has resulted in lower

Machine for Cutting Paper

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Abstract:

The design and fabrication of paper cutting machine using Geneva mechanism is useful to cut papers in equal and accurate dimensions. Geneva drive is an indexing Mechanism that converts continuous motion into intermittent motion, Due to which paper is moved between the equal intervals of cutting period. Then the paper cutting is achieved by crank & lever mechanism. The cutter will be back to its original position by lever crank mechanism. The objective of this concept is to design the Geneva mechanism operated paper cutting machine which eliminates the most time taking process of paper marking and helps in feed equal dimension paper in each rotation. This machine is used to reduce the manual work of paper cutting, and also time saving. This machine is very useful for paper manufacturing industry also we can avoid the human errors and also we can use this equipment also in school, colleges, stationary shop's, paper stores, etc Keywords: Geneva Mechanism, Lever Crank Mechanism, Paper Cutter, Paper Roller, Sprocket.

Introduction

Now a days, there is lot of competition in the market. So there is need of developing a new method or process for effective manufacturing. That process or methods should fulfill the requirement about accuracy Productivity. This paper represents the automatic paper cutting machine by using Geneva mechanism. This equipment is very accurate to cut the papers. This concept will be mainly used in the paper manufacturing industry to cut the papers in huge numbers. The equipment is fabricated in less cost and good efficient. The aim of this concept is to reduce the human fatigue and time savings in industries by eliminating the paper marking time. Here it has analyzed to use Geneva Mechanism. This is the mechanism used to get intermittent motions. This mechanism consists of the following parts like Geneva wheel, rotating disc, bearing, frame and DC motor. In industries the paper cutting machines go through a time taking process of paper marking which is required to cut the paper of required dimensions, so this model is designed by using Geneva mechanism which eliminates the paper marking time and feeds the paper of equal length in each rotation. Geneva mechanism is used as a mechanism for transforming rotary motion into intermittent motion running with acceleration jumps

at the beginning and the end of the active phases. The rotating drive wheel has the pin that reaches into a slot of the driven wheel advancing into it by one step. The drive wheel also has a raised circular blocking disc that locks the driven wheel in position between steps. The Geneva drive or Maltese cross is a gear mechanism that translates a continuous rotation into an intermittent rotary motion. The rotating drive wheel has a pin that reaches into a slot of the driven wheel advancing it by one step. The drive wheel also has a raised circular blocking disc that locks the driven wheel in position between steps. In the most common arrangement, the driven wheel has four slots and thus advances by one step of 90 degrees for each rotation of the drive wheel. If the driven wheel has n slots, it advances by $360^\circ/n$ per full wheel rotation of the drive wheel. A four bar mechanism is a basic 1 degree of freedom mechanism. A 4 bar is created by selecting four link lengths and joining the links with revolute joints to form a loop. A wide variety of paths are possible by arbitrarily choosing a point on the coupler curve. These different curves can be obtained by constructing a physical model of the mechanism and viewing the path of various points without detailed mathematical analysis. It is also possible to develop a mathematical model of the mechanism in terms of its four link lengths. The analytical expressions for these paths are algebraic and require many computations to determine the coordinates for points on the path. A procedure to determine the link lengths of a 4-bar mechanism that will guide its coupler curve in a prescribed manner. The mathematical formulation of this procedure for designing a 4-bar mechanism. The use of a computer for the design of 4-bar mechanisms. This activity precipitated much interest in creating additional analytical approaches to specify mechanisms capable of satisfying a desired task. Interestingly, the number of points is usually three, four or five. This methodology of path generation is referred to as an exact method.

Smart Farming Based on the Internet of Things (IoT): Towards Precision Farming in Agriculture

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Abstract: The Internet of Things (IoT) technology has transformed every aspect of human existence by connecting everything. IoT that is well-developed and brilliant indicates a network of objects or people that form a self-building network. Food produced through smart farming is great and well supported by the people. High-quality farming is one of the most essential arena systems for producing food that is both wonderful and sustainable for the population. One of the most well-known uses of IoT in agriculture is high-quality farming, and several organisations across the globe are taking benefit of this method. Harvest management devices are another sort of IoT technology in farming and an important component of high-quality farming. And weather locations, they should be positioned in the field to gather data tailored just for crop farming, from temperature and rainfall to leaf water and overall crop health. Smart farming makes use of agricultural-based drones. Drones, also known as UAVs (unmanned aerial vehicles), are better equipped than aircraft and satellites to gather farming-related data. With the growing acceptance of the Internet of Things (IoT), linked devices have infiltrated every aspect of our lives, including health, home automation, self-propelled and planned transportation of people and goods, smart cities, and industrial IoT.

Keywords: Drones, Internet of Things, Precision Agriculture.

I. INTRODUCTION

Background:

To link all electronic items to the internet, the Internet of Things (IoT) programme was launched in 2009. In the "Internet of Things," developments are occurring at an accelerating speed. By using the Internet of Things-based items, we can make our lives easier and more efficient at work as well as in our personal life. In India, farmers stick to the old ways of doing things. Farmers that lack fundamental planning, literacy, and expertise make the situation much more unreliable. Projections may go awry in a lot of agriculture and farming-related businesses. As a consequence of the many victims that farmers have to deal with, some of them end up taking their own lives. Such constraints or regulations cannot be ignored because of the need for proper soil moisture, air respect, and crop water or washing with water in crop development. In the vast majority of the world's population, farming is a way to earn a living.

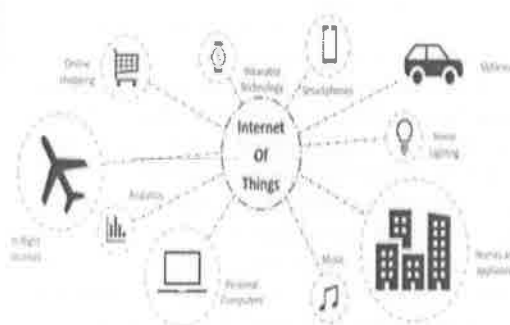


Figure 1 Internet of Things

Some farmers are unable to exhibit their ability to create new and interesting things through their physical acts, therefore they must rely on technical equipment to help them along. It is our goal to use IoT innovation to interact with the negative aspects of farming intelligently. When we used the old strategy of combining several items, we saw it as a single deep water supply system with an ingenious design. To address several critical difficulties regarding the essentials of unwinding, we make full use of IoT principles that may be used for financial gain.

II. SMART FARMING

Farmers seek to always produce enough healthy food to feed the world's population. Using IoT, we have developed a novel crop monitoring or supervising and smart farming innovation. Farming is the most thoroughly explored field of IoT to uncover the truth. Because the world's population is continually growing, ensuring food security is a critical area. Soil moisture monitoring or supervision, conservation condition monitoring or supervision for temperature, moisture, and stream, and self-control or control device management are all needed for farming harvests. In IoT-based smart farming, a system is intended to use sensors to monitor or oversee crop performance and a water system to manage crop watering or washing

WITH THE HELP OF MQL, A REVIEW OF THE LACK OF WEAR ON THE TURN

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Abstract

Turning is a technique used to extract unwanted materials from solid steel, with the ultimate goal in mind to achieve its desired size and shape. The finished part can be formed by rotating the working part to experience the auxiliary process, for example, granulating and lapping. The cutting speed used in the turn is very high and dry cutting conditions are commonly used. The output between hard turns is much higher than traditional matching. Standards of strict pollution control on spinning, waste, emissions, well-being and worker production, Company mission & Vision, Expanding companies to reduce refrigerant costs, powerful management, low transfer, discharge standards to reduce oil (MQL) metal-metal appeals. Companies operating worldwide. MQL prepares the way for the transmission of a small measure of liquid cutting in the form of compact air mist between the cutting tool and the workpiece. Thus, it is responsible for that warm age and the chip clearance at the interface between the cutting tool and the workpiece is limited and better by using the MQL method.

Keywords: MQL supply system, NDM, Turning process, Carbide cutting tool, Lubricant cutting fluid

1. Introduction

To increase tool life, improve machining accuracy and surface finish, cutting fluids are widely used, which can also be used for chip disposal. Now-a-days, it is necessary to use chlorine-free and to target mitigating the consumption of cutting fluids.

For global environmental protection, the use of high-volume cutting fluid increases the cost of disposal of the same ie, waste reducing fluid. Lubricants are widely used to reduce friction and to cool tool-chip and tool workpiece interfaces during the machining process. Also increasing the life of tool,

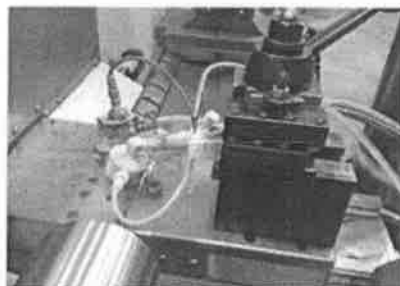


Fig 1: a) MQL supply with cryogenic



b) MQL supply system

For Manufacturing Spectrum industries, the large amount usage of coolant (lubricant) indicates an increase in the machining cost of the product. In the opinion of some researchers, they found that the cost of cutting the fluid is usually related to the cutting tool. In today's scenario, it is important to consider economic factors (improving production efficiency and energy savings) as well as environmental factors (fluid reductions and reduction of human toxicity and waste) at the same time. Therefore, formulating economic and environmental policies, MQL (minimum volume lubrication) has been achieved and rigorously researched. Removable probes are made near dry machining and dry machining of Minimum Quantity Lubrication (MQL). Researched some impressive results with such technology. Turning is one of the machining processes in which the tool is fixed in the tool holder and requires feed in linear motion to remove the metal and by rotating the work piece at the other end. Turning processes support crosswise on the lathe machine, which is labor intensive as a fast machine tool and can be of four types such as profiling, straight turning, external grooving or taper turning? One kind of such Categories of turning processes can produce different sized materials such as straight, conical, curved or oval shape work pieces. Typically, turning uses simple single point cutting tools. Each group of work piece materials consist the right set of tool angles developed over the years. The equipment should then tighten the work piece material. In the case of hard

modeling of prestress loss in extremely high-performance concrete

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Abstract:

The design of prestressed structural parts relies heavily on the accurate estimate of prestress losses. Even though UHPC shows different creep and shrinkage behaviours, a survey of the literature indicated a dearth of data and a limited number of prediction models for UHPC-class materials' creep and shrinkage behaviours. New equations and data-driven models were devised to solve this shortfall in understanding the creep and shrinkage behaviour of UHPC-class materials. Compressive strength, material maturity, and age all play a role in determining how much ultimate creep and shrinkage UHPCs will experience. Results were compared to commercially available UHPC-class materials that had been assessed for creep and shrinkage. The following were the study's primary goals: For each service condition, develop data-driven models to predict the ultimate creep coefficient and the shrinkage strains of UHPC-class materials; (2) examine the current AASHTO LRFD equations for creep and shrinkage of conventional concrete and determine the applicability of the parameters in the equations for UHPC-class materials; (3) compare the predictive models with measured data, AASHTO LRFD equations, and existing European recommendations for UHPC-class materials; (4)

Introduction

To put it simply, UHPC has better mechanical qualities than ordinary concrete, including high compressive and tensile strength, high tensile strain capacity and low water absorption [10–11], as well as long service life [9–10]. UHPC's mechanical qualities set it apart as a construction material, especially for use in precast/prestressed concrete. When employed in pretensioned bridge girders with smaller cross sections and more durable components, UHPC may solve long-standing issues including longer spans, wider girder spacing, and shallower superstructure depth. By virtue of UHPC's better mechanical qualities, more prestressing forces may be used to produce bridge girders with higher structural capabilities than those built from ordinary concrete (e.g., flexure, shear). Because of this, pretensioned UHPC girders may minimise the number of spans (and hence substructures) in multi-span bridges, which can save time and money during construction while providing a stronger structure.

When concrete structures are exposed to long-term compressive stresses, they deform in a time-dependent manner.

In order to accurately estimate a structure's long-term performance, it is vital to understand how deformations and prestress losses could affect the structure's serviceability. There are two types of deformation: creep and shrinkage. When a constant weight on a piece of concrete causes it to distort over time, this is called creep [2]. Creep coefficient is a measure of how much stress a material can take before it breaks. Hydration in cementitious materials and dehydration in concrete members produce shrinkage [2]. When a prestressed member is subjected to creep and shrinkage deformations, the prestress force gradually decreases and the member deflections increase.

There is a paucity of data on the creep and shrinkage behaviour of UHPC-class materials, as shown by a literature study. Specificall

Models for estimating long-term deformation and prestress losses owing to UHPC creep and shrinkage aren't accessible within the framework of US-based structural design guidelines or requirements. Many numerical models and design recommendations have been established outside the United States, such as in France and Switzerland [16,17], where the models were mostly based on the European goods and standards that were readily accessible. To date, the body of information available has been sufficient for a preliminary assessment of creep behaviour, but the depth required to construct a prediction model to assess various service situations is lacking.. For this purpose, the study collects additional data and then builds on the existing conventional concrete creep and shrinkage predictive models that are currently used to design bridges in accordance with the American Association of State Highway and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications (2020), hereafter referred to as AASHTO LRFDS..

Concrete mixtures that self-compact can be created logically.

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ABSTRACT

Construction on the moon raises a host of design issues that have never before been encountered. We'll go through the available resources, structural loads, and other design criteria, as well as some possible building options in a high-level overview. Additional considerations such as radiation protection and meteorite impact safety must be taken into account as well as the primary structural load, which will be internal pressure and airtightness. For a long-term settlement on the moon, it is expected that the buildings will be buried by a thick layer of regolith.

INTRODUCTION

A new wave of interest in space bases and space travel has emerged after the six lunar landings of 1969-1972, when US President Barack Obama decided to send Americans to Mars while also maintaining "an extended human presence" on the moon. Although the proposed voyage to Mars may be considered as a flag-and-footprints expedition, there are no intentions to establish a permanent lunar outpost. Construction concerns for a more ambitious, self-sufficient lunar outpost will be discussed in this study. In order to save on transportation costs, we will assume that the base will be constructed and built for long-term human occupancy. All throughout history, the moon has captivated people, and there are innumerable legends regarding lunar missions. In 1959, the US military had a detailed plan in place for a lunar outpost. More than 400,000 people in 20,000 firms worked on the Apollo project that led to the first Moon landing in 1969, but enthusiasm faded when only 12 men returned with less than 400 kg of Moon rocks and dust. However, the Lunar Explorer, SMART-1, and other publications published recently (e.g. Schrank et al. 1999, Eckart 2000, and Koelle 2001) show that there is a rising interest in space exploration today. Most research long-term space and celestial body exploration includes mention of in-situ resource material supply and use (ISRU). Lunar exploration necessitates this. for the sake of mankind, and to guard against budget cutbacks that may otherwise prevent further exploration of the Moon. The needs for a lunar colony are strikingly similar to those of any human settlement. Furthermore, the same strategy is useful for controlling the environmental effect of its operations and gaining greater resilience to severe occurrences like terrorism or natural disasters.

ENVIRONMENT AND FINANCIAL IMPACT

Local mineral resources and the cost of commerce and travel to bring in resources from other communities determine how much a resource costs and where it is available in a certain community Consider a village isolated from the rest of the world, as this cost changes over time and with the political situation. The extreme instance of a moon colony may be used as an illustration for terrestrial concerns since it is difficult to clear the mind and envisage a terrestrial society as fully isolated. supply transportation shall be reduced as much as possible. This could be accomplished quickly and easily. on the Moon, a self-sufficient colony Spac would likewise benefit from a Moon

Element	Highland	Sea	Earth	Earth crust	Applications
Fe ₂ O ₃ (wt%)	45	27	47	5	Paint, structural use, aerobraking
Al ₂ O ₃ (wt%)	24	21	26	2	Aluminum, ceramics, etc. Debris, regolith
SiO ₂ (wt%)	15	20	20	2	Urethane, epoxy, cement, mortar, ceramics
CaO (wt%)	11	7.5	7.6	4	Ceramics, electrical insulator, paint
MgO (wt%)	8.5	13	10	4	Structural steel
MnO (wt%)	4.5	3.5	3	3	Medical alloying element
TiO ₂ (wt%)	0.33	0.28	2.9	0	Chemical processing, Phase stabilizer
ZnO (wt%)	0.33	0.1	0.23	0	High strength metal
Cr ₂ O ₃ (wt%)	0.005	0.25	0.04	0.2	Medical alloying element
CaF ₂ (wt%)	0.05	0.11	0.6	7	Chemical processing, Phase stabilizer
MgAl ₂ O ₄ (wt%)	10.00	0.17	0.012	0.2	Medical alloying element
Si ₃ N ₄ (wt%)	0.005	0.002	0.11	0.3	Paint, ceramic
CaF ₂ (wt%)	0.12	0.15	0.1	0	Chemical processing
Na ₂ CO ₃ (wt%)	0.005	0.005	0.005	0	Chemical processing, Phase stabilizer
Fe ₃ O ₄ (wt%)	0.005	0.005	0.005	0	Chemical processing, Phase stabilizer
Fe ₂ SiO ₄ (wt%)	0.005	0.005	0.005	0	Chemical processing, Phase stabilizer

colony's presence.

The absence of a breathable atmosphere on the Moon is the most critical component for survival. However, the Moon colonists will not have an issue with oxygen supply. More than 40 percent of the lunar soil (really a fine dust, typically referred to as regolith) may be removed by simple methods (huge amounts of oxygen will occur as a by-product of several mineral enrichment

SPIDER BOT LEGS,

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ABSTRACT

since the wheel was invented back in the Stone Age, it was the primary component used in all forms of mechanical transportation. Even today it is the component of choice for almost any type of moving machine like cars. However, the wheel has always had a major disadvantage with short instant elevation changes like stairs. For most uses, climbing stairs or steep jagged rock piles is not a problem which is why the wheel is still almost always used. For the other applications, people looked at animal and human legs which are already proven to work effectively on this type of terrain. The two most effective leg mechanisms are currently Joe Klann's mechanism which resembles a spider leg and Theo Jansen's mechanism which resembles a human leg. We have chosen Theo Jansen's mechanism which has more advantage than Klann's mechanism. The main objective of our paper is to replace the function of wheel with an alternative in order to overcome the difficulty of travelling in uneven terrain. This paper is useful in hazardous material handling, clearing minefields or secures an area without putting anyone at risk, walking in slant positions, walking in mud without struck.

The Jansen linkage is comprised of a eleven-bar mechanism designed by a Dutch artist by the name of Theo Jansen in his renowned collection "Strandbeest." The system reproduces the movement of a leg and is driven. Its scalable design, energy efficiency, and foot show promise of applicability in robotics. Theo Jansen himself has shown the usefulness of this mechanism during his "strandbeest" sculptures which use duplicates of their linkage whose cranks have been flipped by end sails to create a walking movement.

It may be utilized as a military robot using a few modifications on it such as Guns, Radar, GPS, etc. Where military rangers can not go, it may be utilized as a surveillance bot. Even Russian Army has produced some prototypes of the and these robots will be contained in the military sooner since it's an all terrain vehicle it may be utilized for Planetary Exploration such as Mars since it's highest payload to weight ratio compared to some other bot. Additionally it's maximum efficacy for transferring as it's motivated from nature (MOVES LIKE HORSE), it consumes less electricity. It's also very much shock and light absorbing if it's composed of lighter and proper stuff like carbon fiber etc.

We use this mechanism to drive four legged mini robot and actualize this mechanism using the robotic medium.

INTRODUCTION

Transporter vehicles have traditionally used wheel mechanisms like cars and trains. Wheels are ideally suited for movement without vertical fluctuations of the body, and tires with inner rubber tubes absorb shock from a rugged road. On the other hand, biologically-inspired robotics learn mobile flexibility

from the morphology of multiple legs and their coordination

Good examples of this are arthropods, like spiders, and the robots are conventionally designed with actuators placed in every joint. In such implementation, robots are good tools to investigate how an animal moves, but they are unable to be a substitute principle for wheels because they don't much take into account the maximum load capacity. Joint's actuators promise mobile flexibility, while the actuator's torque performance impacts on the toughness of the robot's body. Therefore, in the design of disaster robots, which need to move on rubble and carry rescue devices, continuous tracks or crawlers are popular

Theo Jansen, a Dutch kinetic artist who has attempted to create a bridge between art and engineering by focusing on biological nature, proposed a linkage mechanism to mimic the skeleton of animal legs. This is called —Theo Jansen mechanism, and provides the animal with a means of moving in a fluid manner. Interestingly, his artificial animals require no electric power for actuators, and do work by weak wind power to drive the gates of multiple legs through a transformation of internal cyclic motion to an elliptical orbit of the legs [4-6]. Even in a version where the body was heavy and five meters in height, the linkage mechanism worked smoothly for walking with minimal power loss. Concepts of the linkage mechanism are in fact found extensively in heavy industrial machines, which are accompanied with hydraulic actuators, such as cranes and shovels. Thus, the linkage has the potential to act as a substitute for wheels, especially in rugged fields. A problem with the Theo Jansen mechanism is the availability and extensibility of walking patterns under bumpy conditions.

The current mechanism concentrates on smoothness at the precise moment the legs touch the ground, and minimizes the force of impact in the toe in order to prevent vertical fluctuations of the body and the breakage parts in the case that the body is heavy. It brings weakness in adaptation to changes of walking fields especially in the presence of obstacles. In order to lift the legs during locomotion, an extension mechanism is crucial for transitions between walking

REVIEW OF SOLUTIONS FOR CLOUD COMPUTING SECURITY AGAINST MANY ISSUES

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Abstract: - The interest of the entire planet has been aroused by cloud storage, a quickly evolving digital technology. Cloud computing is Internet-based computing, whereby machines and devices on demand, such as the power grid, are supplied with common services, applications and knowledge. The convergence of conventional computer technologies and network technology, such as grid computing, distributed parallel computing, etc., is the result of cloud computing. More interest has been drawn to cloud storage. Cloud infrastructure has begun to be pursued by more and more businesses and government departments. Security challenges have, though, arisen on an increasing scale with the widespread usage of cloud storage. To encourage the broader uses of cloud computing, it is important to address these protection problems. The purpose of this research is to recognise the most susceptible security risks in cloud computing, allowing both end-users and suppliers to learn about the core security threats associated with cloud computing. This would encourage researchers and security experts to learn about the needs of consumers and suppliers and to critically examine the numerous proposed security models and tools.

Keywords: Grid computing, middleware, replication, risks, virtualization, cryptography.

I. INTRODUCTION

The Internet has become a guiding influence in the advancement of diverse technology. Cloud Infrastructure is arguably one of the most debated amongst all of these. For nearly all companies seeking to make their entrance into it, cloud infrastructure is seen as a development in the modern scenario. As the new direction to address alternate distribution models with IT capabilities, the cloud is evolving. In the form of apps, networks and more, it is a means of providing IT-enabled services.

"Cloud computing can be described as "A computing cloud is a collection of network-enabled resources that include scalable, Quos-assured, typically customizable, inexpensive on-demand computing platforms that can be accessed in an easy and omnipresent manner"[1]. Cloud infrastructure is the synthesis of a technology, a network that offers Internet hosting and storage facilities, in plain terms. Request device infrastructures with decent service efficiency. In order to access high quality software across the Internet, Cloud Infrastructure is the introduction of engineering concepts. The key purpose of cloud computing is to offer high-quality service levels with flexible and affordable on-demand computing

infrastructures. The internet-based, extremely flexible distributed computer frameworks in which intellectual services are delivered as a commodity is supported by cloud computing. The benefits of allowing use of cloud infrastructure are:

- (i) lowered expenses for hardware and repairs,
- (ii) Connectivity in the world, and

Flexibility and a fully automated process in which the user does not have to think about updating apps, which appears to be an everyday thing. It is important to split cloud computing into two parts, the consumer and the cloud. The consumer is linked via the internet to the cloud in most scenarios. It is also possible to provide a private cloud within an enterprise where a person is linked with an intranet. The customer sends requests to the server and the service is delivered by the computer. Two main aspects of the cloud paradigm are multi-tenancy and elasticity. Multi-Tenancy allows the same example of operation to be exchanged by multiple tenants. Elasticity requires capital dedicated to a service to be adjusted up and down depending on the existing service specifications. Both features concentrate on optimising the use of energy, expense and affordability of facilities.

II. ARCHITECTURE OF CLOUD COMPUTING

It's useful to break it into two parts when learning about a cloud storage system: the front end and the back end. Via a network, normally the Internet, they link to one another. The front end is the hand used by the owner of the machine, or client. The back end is the part of the system's "cloud"

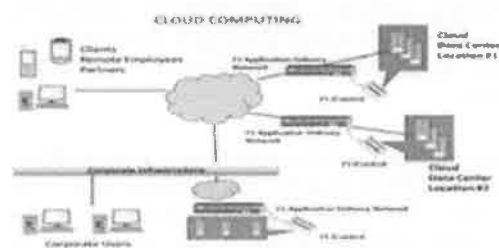


Fig 1: -The architecture of cloud data storage service

Indian engineering students must complete a case study on the English language training requirements.

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Abstract

The efficiency of English language training at Indian engineering institutes is investigated in this study. Due to a lack of confidence and poor communication skills, many Indian engineering graduates are unable to find work. Engineering graduates in India continue to struggle with weak communication skills despite several studies stressing the significance of enhancing their employability skills. Engineering schools in India are the focus of this investigation, which aims to shed light on why so many of the country's graduates struggle in English-speaking classes. Many third-year students still lack the courage to tackle their final-year campus assignments, according to research. It was also discovered that faculty members' approaches need to be improved since many students seek more involved sessions to develop their language abilities. Engineering students' low self-esteem and low degree of trust in English teachers, as shown by the survey findings, highlight the need for better engineering education.

Keywords: the importance of being able to communicate well in the field of engineering

1. Introduction

For many years, English has been an essential element of Indian school curricula, and it continues to play an important role in securing employment with reputable companies. As a result of British colonialism, the English language has been ingrained in the minds of many Indians who are well-educated. As a result, it has become a common language among educated Indians, who speak a variety of regional languages. A large number of well-educated Indians learned English in the 1700s because it helped them rise through the ranks of government. As time went on, English's impact on India continued to grow. Currently, the English language plays a significant role in higher education and the media, as well as in the management of corporate and public organisations. In India, English has grown to be a significant force for positive development (Graddol, 2010). In the past ten years, the number of engineering schools in India has grown at an astronomical rate. Hundreds of thousands of engineering students are graduating from India's 3393 colleges every year, according to a news report in India Today. Engineering graduates have flooded the

job market, and their employability has become a major concern in both the school and business sectors. Because of the high standards of today's Indian job market, engineering graduates are expected to have a variety of transferable skills when they go on job interviews. Candidates are required to speak clearly and confidently in English. In today's India, English language proficiency is a must-have talent for every job seeker. Unfortunately, an increasing proportion of Indian engineering graduates find it a frustrating challenge to communicate clearly and accurately in English. Most Indian colleges, public and private, require students to take two semesters of English as part of their first two years of engineering education. students' ability to communicate effectively in all four areas is the major goal of this course (LSRW). Professors in these programmes have advanced degrees such as the M.Phil. or Ph.D. English literature is the field of study for most of these academics. Professors in India are unfamiliar with concepts such as ESP or CLT since they were not educated in the methodology of English language teaching (ELT). As a result of the British Council's introduction of professional development programmes for English instructors in

schools, research in ELT approaches has emerged in India (Padwad & Dixit, 2011). Due to a variety of factors, despite the numerous conferences and workshops on novel methods of language education, classroom reality presents a quite different image. Professors of English are woefully underprepared. Students from varied educational backgrounds in the same classroom. Third, the total number of pupils in each class (60 per class). Lack of time to finish the curriculum. 5) Written examinations are given more weight (traditional method in India). As a result of this, there is a great deal of stress on instructors. A dearth of high-quality textbooks. 7) Exercises from prior university exams may be found in workbooks used by students. Failure to get help from the administration of colleges and universities 9. 10) Treating English as a separate academic discipline. Irrelevant syllabus design, number eleven on this list.

A PERCEPTION OF THE MULTI-TRAFFIC SCENE BASED ON SUPERVISED LEARNING

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ABSTRACT

Wet days, evenings, rainy seasons, rainy seasons, ice, and days without street lights are all high-risk traffic accident scenarios. The Present Situation The support systems are intended to be employed in ideal weather conditions. Classification is a method for identifying the optical characteristics of more effective vision expansion procedures. Improve computer vision in the most unpleasant way possible Weather contexts, a multi-class weather categorization system, many weather features, and supervision made learning possible. The first step is to extract basic visual properties. When additional traffic images are taken, the function is revealed. The team has eight different dimensions. There were also five supervisors. Instructors are educated in a variety of ways. According to the extracted features, the image accurately portrays the maximum recognition of etymology and classmates, based on the accuracy rate and adaptive skills. The suggested technique of promoting invention through prior vehicle innovation is laid forth here. The night light alters on an ice day, and the view of the driving field expands. Picture feature extraction is the most efficient way for simplifying high-dimensional image data, and it is the most important step in pattern recognition. Because it's tough to extract specific information from the M N 3-dimensional image matrix. As a result, crucial information from the image must be obtained in order to evaluate a multi-traffic scenario.

INTRODUCTION

As a consequence of automotive accidents on the highway, a significant number of lives and properties are lost. The deployment of modern driver assistance systems has the potential to decrease traffic accidents by a substantial amount (ADAS). In the case of extreme weather, a multi-traffic display of the circumstances might be valuable to humanitarian organisations. When it comes to increasing visibility, there are a variety of options available, each of which is based on the situation.

This will aid in the acceleration of the implementation of ADAS. Until recently, little attention was devoted to the difficulties that car cameras have while operating in adverse weather. The contrast between images taken on the inside and

photographs taken on the outside is distinguished by the intensity of the edges. Concentration curves are utilised to produce four various degrees of fog, which are generated using a neural network. It is necessary to develop a novel way to discriminating between different climates. This collection of towns includes Milford as well as a plethora of smaller communities. View-based mapping and localization are currently being employed in external environments that are constantly changing. Continue to keep a watchful eye out for any significant developments. When using a driving assistance system, it is essential that you maintain control of the car at all times. To address the problem of picture brightness discrepancies, Fu and Al propose a skyline-finding technique that relies on sight in order to fix the situation. There is a wide range in the amount of data that is automatically collected from one system to the next. the amount of light that is emitted and the amount of lighting There are a variety of games to choose from, including Fetch, which is offered. Classifications that will be beneficial The ability to recognise road segments in a range of traffic circumstances has been shown.

2. SYSTEMANALYSIS

2.1 EXISTINGSYSTEM

As a consequence of automotive accidents on the highway, a significant number of lives and properties are lost. Vehicles equipped with advanced driver assistance systems (ADAS) are more likely to be involved in fewer traffic incidents. In the case of extreme weather, a multi-traffic display of the circumstances might be valuable to humanitarian organisations. Depending on the weather circumstances, a variety of techniques for improving

Engineering Students' Need for Soft Skills Education

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Abstract:

Because of the fierce rivalry for employment in global corporations and in a wide range of technical fields, soft skills are now required. Aspiring professionals in engineering and management need more than just academic and technical abilities to succeed in the workplace. They also need to be able to communicate effectively with colleagues and clients. The focus of this presentation is on the need

of providing engineering students with training in soft skills. Focused focus is given to a certain subject in most engineering institutes. Despite the fact that students must be given technical training, multinational corporations all over the world are asking for more. To master soft skills, today's engineering students must develop a broader set of hard abilities than those in their respective fields typically demand.

INTRODUCTION

There are a wide range of job possibilities available in India thanks to the arrival of multinational corporations. It wasn't only the hiring procedure that underwent radical alteration. For a long time, in our country, the sole requirements for well-paying work in multinational corporations (MNCs) were academic-technical training and certification. Since a result, this is no longer true, as there has been a paradigm shift in the demands of multinational corporations. Consequently, this is no longer the case. To obtain a competitive edge, organisations throughout the world know this. Employees must be able to interact with customers and coworkers in a professional manner, which necessitates training in soft skills. Soft skills are in high demand in multinational corporations. The world's largest supplier of information technology (IT) is India. The problem is that in India, most engineering and management graduates lack the soft skills needed to succeed in the workplace, especially in the area of communication. In addition to academic and technical expertise, employers look for soft skills such as the ability to think critically, communicate clearly, negotiate effectively, and manage one's time well. In India, the Job Market The financial, tourism, and production industries, as well as ITES (Information Technology Enabled Services), have all witnessed significant expansion in the global economy. However, this development is sluggish owing to India's soft-skill problem, which has limited the efficacy and expansion of the country's soft-skill workforce. The number of new workers needed to keep pace with the company's rapid expansion has risen as a result of this circumstance. According to staffing firms, India continues to have a dearth of "employable engineering, technology, scientific, and management graduates," which is a paradox in and of itself. The number of well-paying jobs is increasing rapidly, and a substantial number of engineering graduates are graduating each year without the soft skills necessary to succeed in the workplace. There are a lot of things that need a Hard skills, which include academic knowledge, competence, and hands-on experience, are required for job applicants. The importance of both hard and soft talents cannot be overstated.

Soft-Skills The sociological phrase "soft skill" refers to a person's EQ, or emotional intelligence quotient. In addition to interpersonal skills, they might be referred to as life skills, employable skills, personal habits, friendliness and optimism, social graces and behavioural competencies. To be a successful professional, one must possess a wide range of soft skills, particularly in the corporate world. Emotional control is a life skill that must be mastered before humans can effectively govern their lives. All employees need a certain set of soft abilities. English language instruction, psychology, human resources management, and sociology all play a role in soft skills. Having strong soft and hard talents is essential for those who wish to have a happy and successful

Fast Adaptive Kalman Filter for Online Speech Enhancement Using Signal Subspace Algorithm

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Abstract:

Voice enhancement is a method for improving the quality of a speech signal that has been affected by noise. We employ a variety of filters, including standard, Fast Adaptive, and Weighted, to accomplish this goal. Conventional Kalman filters need the calculation of AR (auto-regressive) model parameters, and the inverse matrix operation, which is non-adaptive, in order to be implemented. Adaptive Kalman filter and perceptual weighting filter are introduced in this study as a way to remove matrix operations and therefore decrease computation time and complexity. The initial value of the state vector $Z(n)$ in adaptive filtering is continually updated to reflect changes in the human auditory system's masking features, which is how the perceptual weighting filter gets its start. This strategy outperforms conventional methods, according to the simulation findings.

Keywords: Speech enhancement, adaptive Kalman filter, and perceptual weighting filter are all examples of adaptive Kalman filters

Introduction

Speech augmentation has been a popular study topic in recent years due to the rapid growth of multimedia communications and related applications. Speech becomes substantially less understandable when there is excessive background noise. Noise reduction or speech enhancement algorithms are used to reduce background noise and increase the quality and intelligibility of speech by reducing background noise. The randomness of the noise and the intrinsic complexity of the speech make it difficult to remove different forms of noise from the recording. The level of noise reduction and the amount of speech distortion created by processing the speech stream are frequently trade-offs in noise reduction approaches. In the field of voice enhancement, many strategies have been developed, such as spectral subtraction, wiener filter, Kalman filter, and weighted filter. Quality and intelligibility of the processed speech signal are critical to these approaches' effectiveness. Most strategies are aimed at improving the voice signal to noise ratio. Using the Kalman Filter Using state space approaches and recursive algorithms, the Kalman filter makes recursive predictions. An

estimation of the state of a dynamic system. White noise is the most common kind of noise that may affect this dynamic system. Measurements that are connected to the state but also disrupted are used to enhance the Kalman filter's estimation of the state. This is how the Kalman filter works: 1. Predicted outcomes In addition to that, The initial stage is to use the dynamic model to anticipate the current condition. In order to reduce the estimator's error covariance, it is adjusted using the observation model in the second phase. In this respect, it's the best estimate there could be. For each time step, the preceding time step's state is used as the starting point. As a result, a recursive filter is used to describe the Kalman filter. It is necessary to first compute LPC in an AR (auto-regressive) model before reducing the noise. Kalman filtering without generating LPC coefficients in (3) and (4) is illustrated, although this approach still consists of matrix inversion and redundant data that is non-adaptive. It was hypothesised that an adaptive Kalman filtering technique, coupled with a perceptual weighting filter, may improve the quality of voice. Perceptual weighting filter was used to produce the first value of the state vector $Z(n)$ in the adaptive algorithm, which was continually updated. An adaptive method that can be used to estimate ambient noise is needed, and since we don't know what environmental noise is, this approach includes the forgetting factor in (4) and (5) so that it may be updated based on observations to capture the actual noise.

2. Kalman Filtering Algorithm

2.1 Conventional Kalman Filtering Method:

White noise, colour noise, and other sorts of noise were all present. We assume that the White noise that drove the speech signal is a linear output of the recursive process here. It is possible to create a pure

CERTIFICATE-BASED AUTHENTICATION IN MANETS: SCENARIO-BASED SIMULATION EXPERIMENTS AND METRICS

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ABSTRACT: - In wired networks the certificate-based authentication is well studied. Adapting certificate authentication protocols for mobile ad hoc networks (MANETs) is, though, a non-trivial job, primarily because there is generally no set infrastructure or centralized management in a MANET as opposed to traditional wired networks. For example, a traditional authentication scheme based on certificates uses a set trustworthy Certificate Authority (CA) to establish, distribute, renew, and revoke certificates. In the MANET method it is normally not feasible to incorporate such a fixed unified CA in the network due to problems including node versatility, restricted wireless media and regular connection failures. A variety of ways to solve the particular problem of applying certificate-based methods for remote authentication on mobile ad hoc networks is suggested. Our contribution is twofold in this paper. We first analysis the specifications of a protected distributed authentication scheme for MANETs and then review some of the current certificate-based authentication systems, in the sense of distributed authentication, by examining their features including pros and cons. Finally, a set of modeling tests and metrics on the situation was proposed to test these characteristics.

Key Words: -Ad hoc networks and cameras, authentication, measurement, emulation.

1. Introduction

Mobile Ad hoc networks (MANETs), partially due to the possible usage of MANETs in various apps, have gained significantly greater attention. However, the usage of these networks presents many complicated problems because of the complex existence of nodes, the random topology, the restricted wireless range of nodes and communication errors. Since all nodes in the network operate together to relay information, the wireless channel is vulnerable to active and passive attacks by malicious nodes, such as service denial, eavesdropping, spot-spoofing, etc. The design of encryption in these networks is therefore of prime importance.

Confidentiality, honesty, authenticity, availability and non-reputability are the five elements of a protection system. Authenticity is, thus, the most critical question, because an authenticity infringement contributes to a system-wide compromise. The public key management scheme that uses certificates is one of the commonly used authentication methods in traditional wired networks.

The stable delivery of public keys to all nodes in the network is one of the primary problems in a certificate-based framework. The PKI [1] describes public key management methodologies utilizing X.509 certificates. There is a centralized certificate server in a wired network, which is responsible for developing, renovating and revoking certificates. In ad hoc networks, this is not necessary when there is no set framework and unified control. In addition to this, recurrent connection failures can occur due to complex network topology, contributing to issues such as authentication and timely contact with the certificate server.

Several methods for public key management were introduced to address these shortcomings and to take maximum advantage of the certificate authentication mechanism [2]. In this article we examine some of these approaches and address their benefits and drawbacks. The remainder of the document is structured accordingly. Section 2 outlines the criteria for a handheld ad hoc network certificate-based authentication scheme. Section 3 includes an examination and a short summary of the processes employed. Section 4 contrasts the schemes with the specifications. In Section 5, we mention scenarios and methods for the analysis of these processes through simulation.

2. Requirements of effective certificate-based authentication for ad hoc networks

Five specifications have been established to ensure a safe and efficient authentication in a mobile ad hoc network with any certificate-based authentication scheme.

R.1 Disseminated authentication: It is not normally practical to have a fixed centralized CA in the network on ad hoc networks due to problems such as regular connection errors, node mobility and restricted wireless medium. Furthermore, a server may become a single point of vulnerability in networks that need high protection. Consider the war situation, for example, in which the soldiers scatter over a wide region. In such a scenario, a central server could

OPEN CV PYTHON OBJECT DETECTION

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ABSTRACT:

The concept of object detection in Python using OpenCV library and how you can utilize it to perform tasks like Facial detection. An object detection system finds objects of the real world present either in a digital image or a video, where the object can belong to any class of objects namely humans, cars, etc. In order to detect an object in an image or a video the system needs to have a few components in order to complete the task of detecting an object, they are a model database, a feature detector, a hypothesizer and a hypothesizer verifier. This paper presents a review of the various techniques that are used to detect an object, localize an object, categories an object, extract features, appearance information, and many more, in images and videos. An idea about the possible solution for the multi class object detection is also presented.

INTRODUCTION

Face detection is a computer vision technology that helps to locate/visualize human faces in digital images. This technique is a specific use case of object detection technology that deals with detecting instances of semantic objects of a certain class (such as humans, buildings or cars) in digital images and videos. With the advent of technology, face detection has gained a lot of importance especially in fields like photography, security, and marketing.

1.1.1 Introduction to OpenCV-Python

OpenCV was started at Intel in 1999 by Gary Bradsky and the first release came out in 2000. Vadim Pisarevsky joined Gary Bradsky to manage Intel's Russian software Open CV team. In 2005, OpenCV was used on Stanley, the vehicle who won 2005 DARPA Grand Challenge. Later

High temperature superconductors' electrical and magnetic properties are investigated using a variety of data collecting techniques.

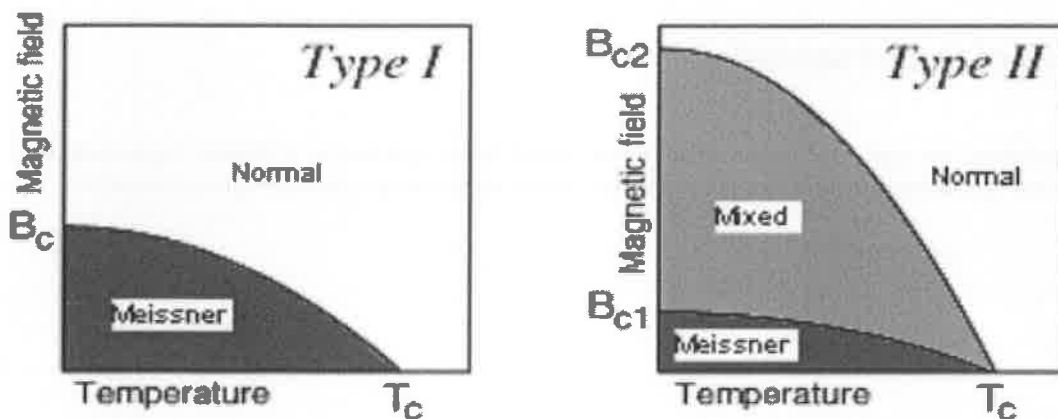
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Abstract:

Mercury's superconductivity was discovered in 1911 by physicist Heike Kamerlingh Onnes. The absence of electrical resistance below a certain threshold temperature characterises superconductivity. A current of electricity in a superconducting wire loop may last endlessly without any external power source. Magnetic characteristics of superconductors are very intriguing. The Meissner effect in 1933 Meissner and Ochsenfeld discovered the Meissner effect when the superconductor is cooled below the superconductor's magnetic field temperature at which a person's body can no longer stand. There is no electricity beyond this point. The superconductor's surface generates resistance and electrical currents. As a means of shielding the superconducting material a metal object with an attractive force a superconductor's surface electrical currents allow it to hover above it. Oppose the magnet's magnetic field by generating a magnetic field of its own. Figure 1 depicts the two main kinds of superconductors currently in use.

1. Introduction

today. Idiopathic Spontaneous Hyperthermia and Meissner phases are seen in superconductors. The superconductor's magnetic field is totally discharged. The second kind The normal and Meissner phases are also present in superconductors. Nonetheless, magnetic fields and temperatures are in a condition of muddled equilibrium. Vortices (normal cores) are formed by the magnetic field as it penetrates the material. A superconducting current field is around it.



Type I and Type II superconductor phase diagrams are shown in Figure 1. (right). Temperatures above T_c and magnetic fields above B_c are considered typical for Type I, whereas temperatures below T_c and magnetic fields are considered abnormal. Meissner phase material is normal in magnetic fields below B_c . Types of II, the material is in the solid state when heated over T_c and subjected to magnetic forces greater than state of normality. Temperatures below the T_c and magnetic fields between B_{c1} and B_{c2} are not compatible.

A study on mother tongue's impact on English communication

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Abstract:

English is a worldwide, universal, and international language.... When learning a new language, our first instinct is to employ sounds from the language we learned it in. When it comes down to it, every person has some degree of mother tongue influence (MTI). For individuals proficient in the second language, the number of listeners is steadily increasing. Learning a new language by speaking and fixing your own faults is a gradual process. The original English pronunciation of mother tongue sounds. It's a business language, in that sense.

INTRODUCTION

Communication of ideas, thoughts and wants through sounds is a technique of survival for the mind and body. As a second language, English is used. Language. The fact that it is a language we do not speak has Assimilate into the world's lexicon Teaching English is the primary goal. is not to sound like a native speaker or to improve one's language skills by Accents from either the United Kingdom or the United States are acceptable. Here, we're aiming towards a certain goal: examine the impact of the native language on one's ability to communicate in the English language among the university student body and the best ways to overcome a some of the issues that an Indian English language student. We begin speaking the second language when we begin to express ourselves verbally in that language. Initially, we employ sounds from our native language while speaking English. As a result, everyone bears the impact of their mother tongue first and foremost. Listening to individuals who are proficient in English more and more practising speaking and listening in the new language Over time, as you practise identifying and repairing your initial sounds of the maternal tongue English. The ubiquitous "z" sound serves as an illustration. it is possible to find at the end of English words, however startingpoint. Because of the language barrier, it's difficult to get by in this new and improved. "English is unquestionably the world's most widely spoken language. As the second most widely spoken language in the world, it's a70 nations use it as their primary language, with the majority of those using it being English-speaking. Countries are in charge of around 40% of global output. The ability to communicate effectively in English is an essential skill in today's society. We also need a second language to go along with our native speech. Shared language that allows us to speak with one other with other countries. The most widely spoken language is English. Language that most people in the area are familiar with world. Because of this, it is critical to be fluent in English. It is easier to get a message through if it is communicated effectively.

In order to make it accessible and understandable to a wide audience, the English terms used must be straightforward. Everyone. Nowadays, children are being taught English as a second language. At the very beginning. Students are required to talk only in English. While they're on campus and speaking in English. An important part of day-to-day life is communicating in English. Daily routines. Banks, train terminals, and bus stops all utilise English. Stations, airlines, educational institutions, health care facilities, and private individuals' industry, etc. With other languages, English is a common one. Countries. For educational purposes, a large number of students go by plane. jobs. As long as they're communicating with you in English, you may control how they interact with the local population. And students are the primary English language learners because they have the opportunity to do so. They need to acquire a strong education if they wish to have a successful career Confidence in one's ability to speak English in a variety of situations interrogating individuals for jobs. The fluidity of the language is disrupted by the mother tongue. Communication. Students who lack self-

The Antibacterial Effect of Mechanically Synthesized Copper (II) and Silver (I) Complexes with Cefuroxime on Some Cephalosporin-Resistant Bacteria

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ABSTRACT

Due to the potential for complication to alter a drug's pharmacological, toxicological, and physical-chemical characteristics, it is an essential stage in the creation of new medicines. These results provide the first solvent-free synthesis of cefuroxime copper (II) and silver (I) complexes (mechanochemical). Physicochemical techniques, such as infrared spectroscopy, were used to characterize the complexes. Composition, temperature of melting, solubility, conductivity, and sensitivity to visible light are all factors. The location of the complexes was influenced by these findings. For example, it has been reported that the formulations [Cu(CFU)2H2O] and [Ag(CFU)NO3], where CFU stands for cefuroxime, are effective. A discussion on antimicrobial therapy using the disc diffusion technique, the complexes were evaluated for antibacterial activity against a wide variety of microorganisms. Bacillus subtilis, Streptococcus pneumonia, Typhi is the name for this subtype of Salmonella. Resistance to methicillin in Klebsiella pneumonia and Escherichia coli Infections caused by Staph aureus (Staph aureus), Pseudomonas aeruginosa, and MRSA. The evidence suggests this is the case. The activity of complexes is increased in comparison to the free ligand.

INTRODUCTION

Development of An Indoor Location System Based on Wi-Fi Using Artificial Intelligence Methods

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Abstract:

Indoor placement in enclosed spaces has been an increasing demand in recent years, and this research aims to provide a solution utilising current gear. This method, which relies on satellite communication to locate a device in open space and is widely used, doesn't work inside. It's a well-known statistic for determining the distance between wireless nodes by measuring signal intensity. There are a slew of environmental factors that might impact the signal strength, leading to inaccurate readings. An artificial neural network may be fed data on the transmission strengths of signals received from several transmitters inside a defined restricted area using the newly proposed method. The trained neural network's outputs have been shown to be significantly more successful and trustworthy than the path-loss calculation's outputs in the past.

INTRODUCTION:

Wireless sensor networks are becoming more common in real-world applications and are employed in a broad range of industries. It is possible to use them in a wide range of applications, from site security and assisted living to home automation and health monitoring. There is a need for a solution to the indoor location challenge in a variety of industries. Generally speaking, the placement issue may be broken down into two sections. An open-field positioning system is one that utilises the Global Positioning System (GPS) to provide accurate results. Thus, a moving object's location and speed may be monitored in an open region. Moving nodes may be tracked using GSM and UMTS networks, which are supported by GPS. As an example, while a mobile phone user is connecting with GSM base stations, a user's signal strength may be utilised to determine the distance, direction, and speed of an item that is moving. The triangulation method may be used to forecast the user's location since the base station locations are well-known. A user's location may be determined directly from the GPS satellites if they are in communication with their smartphone and the GPS capability is available on that device. However, the GPS device costs a lot of money and cannot be utilised in locations that are covered. The use of GPS in confined area positioning systems is not practical, hence other methods must be used. The received signal intensity may be assessed if the

transmission power is kept constant. In terms of cost, this strategy is the most efficient one. Because measuring signal strength does not need the installation of additional devices. Techniques such as time of arrival (TOA), angle of arrival (AOA), time difference (TDOA) and received signal strength (RSS) are employed for indoor locating in literature studied. It is possible to set up wireless positioning systems in one of two ways. Mobile aided and network assisted are two different methods. In the mobile aided strategy, the mobile node attempts to identify the nodes it can connect with in the vicinity of its current location. As part of the network-assisted technique, the central processing unit takes measurements of signals from mobile nodes and transmits them to a reference node for transmission to the central processing unit. Numerous papers have been written on the topic of wireless network placement. Results of established estimating techniques were evaluated by Hara and Anzai [1]. RSSI provides benefits over TDoA in a congested environment where the line of sight between the nodes is often disrupted, according to the results given The ITU indoor model was designed by Chrysikos at al. [2] for a particular venue. [3] Türkoral at al. devised a distance estimate technique for two nodes based on RSSI metrics, and they used three alternative transmission models for each node. They claim that a new algorithm for localization has been developed that includes an error-checking and repair approach. The RSSI-based fingerprint feature vector approach proposed by Zhang et al. [5] divides the covered area into grids and deploys access points. Several RSSI-based localization algorithms for wireless sensor networks and indoor-outdoor applications were tested in a survey study conducted by Mistry & Mistry [6]. Livinsa and Jayashri [7] provide an RSSI-based localization technique for improved indoor location distance prediction. As a result of employing varying number of anchor nodes, they were able to get the best distance estimate for outdoor environments and the lowest localization error. An technique based on RSSIS was proposed by Vadivukkarasi and Kumar [8]. Since GPS cannot be utilised in

Optical, thermal and dielectric characteristics of a novel organic nonlinear crystal have been studied. Nonahydrate single crystal of bis (2,3-dimethoxy 10-oxostrychnidinium) phthalate

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Abstract

Bis (2,3-dimethoxy-10-oxostrychnidinium) phthalate nonahydrate was synthesised, grown, and characterised for the first time in this work. The XRD examination of a single crystal demonstrates that the crystal is monoclinic in structure. Vibrational and NMR spectroscopy examinations revealed the molecule's structure and the kind of vibrations occurring inside it. It was observed that the UV absorption edge was 330 nm, with a large optical transmittance window that included the visible spectrum. Up to a temperature of 90.56 C, the crystal is physicochemically stable. The TG data was used to derive a number of thermodynamic parameters. The developed crystal's SHG efficiency was found to be phase matchable and to be 2.8 times more than that of KDP in the Kurtz powder second harmonic generation.

1. Introduction

Low birefringence suggests its appropriateness for non-linear optical (NLO) devices. Due to the carboxylic acid's supply of protons to quaternium nitrogen, there were two distinct wavelengths in the PL spectrum: 355 and 406 nm. Dielectrics and other modern gadgets Due to their high nonlinear coefficient, physical and chemical durability, and quick responsiveness to electro-optic effect, organic materials are becoming increasingly popular. Organic materials have been shown to be superior to traditional inorganic substances in many applications due to their higher electronic susceptibility (χ) and simplicity of device processing due to molecular hyperpolarisability (b) [1]. For example, optical switches, optical communications, and optical data storage have previously been implemented [2]. Host molecules with acidic groups prefer to crystallise with the host compound, which has six asymmetric carbons and no hydrogen bonding donor group. The brucine is protonated at the N (2) position after the acid-base process. Phosphoric acid (KAP) or potassium hydrogen phthalate (KHP) with mula's chemical The alkali acid phthalate salt K (C₆H₄COOHACOO) is a semi-organic salt. [3] The orthorhombic system in which KAP crystallises is Pca21. Analyzers and monochromators in high-resolution X-ray instruments rely on them extensively in the X-ray spectrum. Epitaxial growth

of orientated polymers and hierarchical development of structured materials have recently been performed on KAP crystals [4]. There are two proton-donating carboxylic groups in KHP that make Bis(2,3-dimethoxy-10-oxostrychnidinium) phthalate nonahydrate salt easily reactable to brucine. Crystal structure of Bis 2,3D10 PN was published by Krishnan et al. [5]. Hydrogen bonds between the brucinium cations and phthalate anions are NAH O and OAH O. They create ribbon structures that are head-to-tail, with the carboxy phthalate and water molecules intertwined along the 'a'-axis. For the first time, we describe the growth, structural, optical, thermal, laser damage threshold, and second harmonic generation properties of Bis 2,3D10 PN single crystals in this work.

2. Experimental

Development of crystals of Bis 2,3D10PN It was created by dissolving potassium hydrogen phthalate (Merck: 99 percent, AR grade) and brucine (Sd. Fine: 99 percent, AR grade) in a mixed solvent of ethanol and water, in a 1:1 M ratio. Figure 1 depicts the chemical process. An automated temperature-controlled motorised magnetic stirrer was used to ensure that the solubility of the Bis 2,3D10 PN salt in ethanol and water was homogenous before conducting the solubility investigations. The crystalline salt of Bis 2,3D10 PN was obtained by allowing the solution to evaporate at room temperature. The gravimetric technique was used to determine the solubility of Bis 2,3D10 PN in a 1:1 mixture of ethanol and water at a temperature range of 32–42 C. On the basis of Figure 2(a), it can be deduced that Bis 2,3D10 PN is soluble in both ethanol and water (1:1). The quality of the synthesised material was improved by re-crystallizing it five times. Continuous stirring for six hours at 30 C produced the saturated solution according to the solubility values. To prevent the solvent from evaporating too quickly, the prepared solution was poured into a beaker and filtered using Whatman filter paper. After that, a 30 C constant temperature bath was used to maintain the produced solution with an accuracy of 0.01 C. A 2,3D10 PN crystal of

Utilizing generalised trapezoidal fuzzy numbers, a novel ranking method

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ABSTRACT

Fuzzy numbers play a crucial position in decision making, optimization, forecasting, and other fields of study. Prior to taking action, fuzzy numbers must be assessed by an executive. The ranking technique proposed by Chen and Chen (Expert Systems with Applications 36 (2009) 6833-6842) is proven to be erroneous in this study utilizing multiple counter cases. In this research, we explore several cutting-edge techniques for ordering fuzzy generalized trapezoidal numbers. The proposed method is helpful since it helps to sort generalized and normal trapezoidal fuzzy numbers in the correct order. All of the necessary characteristics of fuzzy quantities are present in the proposed ranking function, as stated by Wang and Kerre (Fuzzy Sets and Systems 118 (2001) 375-385).

Keywords:

Generalized trapezoidal fuzzy numbers, and the ranking function.

INTRODUCTION

Fuzzy set theory [1] has the potential to provide useful solutions to real-world issues. Though it may be used to sort real numbers, it has no such effect on fuzzy ones. It is difficult to establish if one fuzzy number is more or smaller than another as fuzzy numbers are represented by a range of potential outcomes. Using a ranking function to sort the fuzzy integers is an effective method. The set of fuzzy numbers $(F(R))$ is defined in terms of real numbers, and each fuzzy number is then ordered along the real line. Fuzzy set theory has become increasingly concerned with the precise ordering of fuzzy numbers, which is a crucial step for making judgments in a fuzzy environment.

For Jain, ranking was an original concept. In [0,1], Yager [3] suggested four indices that may be used to

sort fuzzy values. Fuzzy number sorting is addressed in Kaufmann and Gupta [4]. [5] Campos and Gonzalez [5] offered a subjective technique of assessing fuzzy integers. Liou and Wang [6] devised an integral value index. For fuzzy integers, Cheng [7] presented a ranking system based on distance. The similarities between Kwang and Lee are many.

Fuzzy number probability distributions were used to build a ranking method by [8]. Modarres and Nezhad [9] introduced a preference function-based ranking method, in which the fuzzy numbers are evaluated incrementally, with the most preferred value being determined at each stage. Chu and Tsao [10] claim that Fuzzy integers may be ranked using the space between the centroid and the original location. Deng and Liu [11] recommended using a centroid-index method for sorting fuzzy integers. Additionally, the centroid idea was employed in the ranking indices created by Liang et al. Chinoy & Chinoy. An algorithm was presented in [14] for sorting generalized trapezoidal fuzzy integers. Abbasbandy and Hajjari came up with a new approach based on the left and right spreads at different levels to rank trapezoidal fuzzy numbers. Fuzzy risk analysis based on ranking generalised fuzzy numbers with varying heights and spreads was presented by Chen and Chen [16].

PRELIMINARIES

In this section some basic definitions, arithmetic operations and ranking function are reviewed.

A. Basic Definitions

In this section some basic definitions are reviewed.

Definition 1. [4] The characteristic function μ_A of a crisp set $A \subseteq X$ assigns a value either 0 or 1 to each

High solar energy conversion efficiency and intriguing defect physics are two characteristics of ZnSiP₂.

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Introduction

Group IV, II–VI, and III–V semiconductors are the most common materials used in optoelectronics because of their tetrahedral coordination. II–IV–V₂ (e.g. ZnSiP₂) has received less attention for optoelectronic devices than the ternary II–VI analogues such as I–III–VI₂ (e.g. CuInSe₂), which have been widely studied. 2–9 Many unary and binary semiconductors may be included into the lattice of II–IV–V₂-chalcopyrite compounds, as shown in Fig. 1, which displays the wide variety of band gaps and lattice constants that can be found in II–IV–V₂ chalcopyrite compounds. As a result, many of the II–IV–V₂ compounds are especially suitable for large-scale applications such as photovoltaics since they are generated from very affordable and non-toxic elements (eg. Zn and Mg) (PV). 10–12 Wide range of frequencies There has been very little research on the II–IV–V₂ materials, despite the potential for tandem PV, LEDs, photonic circuits, and lasers. 13–15 It has been a challenge to work in tandem PV.

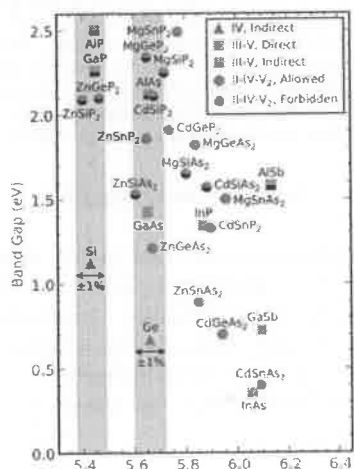


Fig. 1 Theoretically determined band gaps versus lattice constants for some of the more earth abundant II–IV–V₂ chalcopyrites. Also shown are III–V materials along with Si and

Ge from group IV. The gray vertical bars overlaying Si and Ge highlight materials with similar lattice constant, within 1%

Find materials with large band gaps that can be used in tandems, especially those that are compatible with Si. 16,17 There are two compounds that are particularly interesting as epitaxial top cell materials on a silicon substrate: ZnSiP₂ and ZnGeP₂. Si PV's supremacy may be leveraged by using these materials

as low-cost, readily available top cells (490 percent market share). 18 ZnSiP₂ characterization for PV purposes is the subject of this paper. Crystals produced in a flux (usually Zn or Sn) or by halogen-assisted vapour transport have been used since the late 1950s to study ZnSiP₂'s basic characteristics. 2,11,12,19–36 ZnSiP₂ has a very tiny lattice misfit with Si of 0.5 percent, a 2.1 eV band gap, minimum atomic disorder, and is structurally stable at temperatures up to 800 °C, according to the results of these crystals. When ZnSiP₂ is doped with n-type elements (Se, Te, In or Ga), p-type crystals (Cu) are formed. 11,19,20,28,31 There has been some characterization done that is directly relevant to tandem silicon photovoltaic cell applications. ZnSiP₂ heterojunctions with Si have been suggested and discussed by a number of scientists. 12,25,40,41 Heteroepitaxial crystallisation of Si on ZnSiP₂ substrates, 39 formation of polycrystalline ZnSiP₂ on Si, 42 and epitaxial ZnSiP₂ on Si via vapor–liquid–solid growth have all been used to illustrate the growth of Si/ZnSiP₂ interfaces.

43 Despite the fact that photoconductivity has been shown, no PV devices have been developed. 2,3,44 As the ZnSiP₂ has negligible parasitic below-band gap absorption and an excellent index of refraction matching with Si (reflection at the Si/ZnSiP₂ interface would be less than 1 percent), the device may be predicted to have strong light transmission from its top cell and into the bottom cell. 37 ZnSiP₂ is a suitable material for use as a top cell atop a Si PV

A Switched-Capacitor Bidirectional DC-DC Converter with a Wide Voltage Gain Range for Electric Vehicles with Hybrid Power Sources

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Abstract— An exchanged capacitor bidirectional DC-DC converter with a high advance up/step-down voltage gain is proposed for electric vehicles (EVs) with a half breed vitality source framework (HESS). The converter displayed has the benefits of being a basic circuit, a diminished number of parts, a wide voltage-gain extend, a low voltage stress, and a shared opinion. Likewise, the synchronous rectifiers permit zero voltage exchanging (ZVS) turn-on and turn-off without requiring any additional equipment, and the proficiency of the converter is improved. A 300W model has been created which approves the wide voltage-gain scope of this converter utilizing a variable low-voltage side (40V-100V) and to give a consistent high-voltage side (300V). The greatest effectiveness of the converter is 94.45% in step-down mode and 94.39% in step-up mode. The test results additionally approve the possibility and the adequacy of the proposed topology.

Index Terms—Switched-capacitor, Synchronous rectification, Bidirectional DC-DC converter, EVs, HESS, Wide voltage-gain range

I. INTRODUCTION

To address the challenges of fossil fuels as the primary energy source for transport (including reducing stockpiles and polluting emissions) [1]-[2], electric vehicles (EVs) powered by battery systems with low or zero polluting emissions, are increasing in popularity. Although the developed advancement of batteries can provide higher population performance for EVs, the unlimited charging or discharging current (i.e. inrush current) from batteries will result in shorter battery cycle life, as well as reducing the efficiency [3]. The combination of a battery and super-capacitors as a hybrid energy source system (HESS) for electric vehicles is considered as a good way to improve overall vehicle efficiency and battery life [4]. Super-capacitors have advantages of high power density, high cycle life, and very good charge/discharge efficiency. They can also provide a large transient power virtually instantaneously and are therefore suitable for meeting sudden EV power changes such as acceleration or meeting an incline.

The HESS can make full use of the performance of batteries and super-capacitors: the super-

capacitors supply power for acceleration and regenerative braking with the battery meeting the requirement of high energy storage density for long range operation [5]. A challenge for the HESS is that the terminal voltage of super-capacitors is low, and varies over a wide range as they are charged or discharged. Therefore, a bidirectional DC-DC converter with a wide voltage-gain range is desired for the HESS to connect low-voltage super-capacitors with a high-voltage DC bus. There are two broad classifications for bidirectional DC-DC converters, namely isolated converters and non-isolated converters. Isolated converters, such as half-bridge and full-bridge topologies are implemented using a transformer [6]-[8]. In addition, the half-bridge converter in [6] needs a center-tapped transformer which results in a complex structure, and the full-bridge converters in [7]-[8] require a higher number of semiconductor devices. High-frequency transformers and coupled inductors can be used in isolated converters to obtain high step-up and step-down ratios [9]-[11]. However, in [9], the realization of bidirectional power flow requires ten power semiconductors and two inductors. The converter in [10] requires two inductors in addition to the transformer, and three inductors are used for the converter in [11]. The structure of these converters is complex, the cost is high, and it is difficult to standardize the design. When the turns ratio of the high frequency transformer increases, the number of winding turns increase correspondingly and the leakage inductance of the transformer may result in high voltage spikes across the main semiconductors during switching transitions. In order to reduce the voltage stress caused by the leakage inductance, a bidirectional DC-DC converter with an active clamp circuit in [12] and a full bridge bidirectional DC-DC converter with a Fly back snubber circuit in [13] were proposed. Besides, the dual active bridge converter in [14] and the phase-shift full-bridge converter in [15] also utilized the leakage inductance to achieve the soft-switching, and the energies stored in the leakage inductance were transferred to the load. When the input and output voltages do not match the turns ratio of the transformer, the power switch losses will increase dramatically [16], which reduces the

Application for Business Bridge Research Paper

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Abstract:

Investment in India is a business-based idea. I will be in my project giving investors with a platform and connecting people with strong business concepts. This will change how much you can invest and where the money can be invested. Good investment returns. Good investment returns. Here are two forms - one for investors and one for business persons with contacts details. There is a case in which people have spare funds to park this amount Banks or Gold. Banks or Gold. I am here studying the possibilities of directly investing these excess cash Company linking investors and corporate people. I build the application that brings investors and business people together and vice-versa. I shall charge both ends for the use of my application. The need to design this initiative was to bridge the enormous communication gap business persons and investors and also no time to communicate on the common platform. In order to address these drawbacks, I build this platform. Application.

Introduction

Perhaps one of the most crucial papers to learn how to write is a business proposal. Whether you are a freelancer or you have a company of yours, this is the difference between success and failure. In today's threatened business world, entrepreneurs spend hours proposing company proposals Possible customers, and get no results. There are those on the other hand are like snipers who can acquire the deal after only one business private marketing network proposal to create a venture organization.

1.1 Targets

The need to design this initiative was to bridge the enormous communication gap business persons and investors and also no time to communicate on the common platform.

1.2 System Specifications

Hardware Requirements:-

➤ Windows OS

Software Requirements: -

Operating System: Windows OS

Front-End: HTML, CSS, and JS

Back-End: Angular JS, PHP, MYSQL

Android Tools: Android Emulator xampp-win32-5.5.19-0-VC11

Android SDK - adt-bundle-windows-x86 IDE: Eclipse Mars

Jdk-8u66-windows-i586

Literature review

Job Description Business Advisor Whether they are self-employed or work for a larger organization, consultants are required to support new and established companies. You study the business plan and financial statements of a company to correctly advise them on investment, Marketing and prospective options for funding. Technology can now report financially without the support of a business consultant, however, it is the business consultant's role to study the reports!!! Requirements to become a business consultant!! Education Business consultants must have A bachelor's degree in business, finance or similar subjects. Many consultants have a master's

PREDICTION OF CROP YEILD Using ML

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ABSTRACT

In India's economy, agriculture is by far the most significant industry, and it has the greatest impact on the country's gross domestic product (GDP). An estimated 50 percent of the country's workforce is employed in the industry, which accounts for around 18 percent of the country's Gross Domestic Product (GDP). People in India have been engaged in agriculture for a long time, but the results have never been satisfactory owing to a variety of variables that influence crop productivity at different times of the year in different regions. A high agricultural production is required to meet the demands of the world's approximately 1.2 billion people in order to ensure that they are met. All of the variables that influence crop output are directly related to soil type, precipitation, seed quality, and the existence or lack of technical infrastructure, to name a few. To meet the increased demand, new technologies are required, and farmers must use their resources effectively by embracing new technology rather than relying on inefficient farming practises. The purpose of this project is to demonstrate how to develop a crop production forecast system using Data Mining methods. The dataset pertaining to agriculture was the topic of the investigation. Several classifiers, including the J48, LWL, LAD Tree, and IBK are used to forecast it. The performance of each classifier is evaluated by comparing its performance to the others using the WEKA tools for enhancing Python with machine learning performance (python with machine learning). In order to evaluate total performance, it is necessary to include Accuracy factors such as linear regression, as well as the accuracy of Random forest and KNN classifiers, were employed in this study, and one of them was the accuracy of linear regression. The overall performance of the classifiers is then assessed by comparing their Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), and Relative Absolute Error (RAE) values to the values of Root Mean Squared Error (RMSE) obtained from the training data (RAE). As a result, the technique will perform more correctly as the number of errors lowers. Classifiers are evaluated based on how well they perform in classification by making comparisons with one another.

1. INTRODUCTION

The purpose of information extraction and forecasting is to identify patterns in huge data sets. Information extraction and forecasting is the process of analysing, extracting, and predicting crucial information in order to identify patterns in the data. When businesses want to translate raw data from their customers into information that can be utilised to improve the efficiency and effectiveness of their operations, they employ this strategy. The pre-processing and alteration of data is a critical component of the Data Mining process, and it accounts for a large portion of the total time spent on it. This process begins with the selection of data and continues until patterns are uncovered that may be used to forecast crucial insights. The data is then analysed further. It is necessary to perform two jobs during the preprocessing stage: outlier identification and the detection of missing data. Transformation, on the other hand, is concerned with the establishment of a relationship between two or more separate parts. In this study, historical climatic and agricultural output data were mined and evaluated with software created expressly for this purpose, resulting in a large number of projections being generated. It is possible to make judgments that can help in the expansion of agricultural production when you have access to precise data. In order to lower the costs involved with making decisions about the soil and crop that will be planted in a field, it is critical to provide farmers with a Decision Support System (DSS).

The usage of this software system while analysing raw data, academic papers, or business models aids analysts in forecasting or detecting key information that may be utilised to analyse an issue and solve it through decision-making. Farmers are likely to gain from this strategy since it will aid them in making critical decisions that were previously done inefficiently or based on educated speculation. When it comes to creating the final version of the prediction system, the application of data mining techniques will be utilised. Previous research has demonstrated the relevance of data mining approaches in the agriculture industry, and the current findings corroborate this. It is

Full-Bridge PWM Converter with Auxiliary Active Clamp for Zero-Voltage and Zero-Current Switching

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AbstractAn improved presentation of the previously presented ZVZCS FB PWM converters has been offered with the development of a new ZVZCS FB PWM converter. It is possible to achieve ZVS (for driving leg switches) and ZCS (for slacking leg switches) without the use of lossy components or the saturable reactor by integrating an optional dynamic cinch and managing the brace switch properly. The novel converter is attractive for high-voltage and high-power (>10 kW) applications because of its many advantages, such as its fundamental circuit architecture, high efficacy, and simplicity. The rules of action are explained and analysed. A 1.8-kW 100-kHz shielded entryway bipolar transistor (IGBT)-based exploratory circuit is used to demonstrate and test the novel converter's features and design considerations. Index Terms—DC–DC power conversion.

INTRODUCTION

IGBT's are commonly utilised in switching power conversion applications because of their specific benefits, such as their ease of driving and high frequency switching capabilities. The newest IGBT's can function at 10–20 kHz without a snubber circuit because to ongoing improvements in their performance. It's also being replaced by IGBT's for applications that need several or a few kilowatt of power since IGBT's are more suited to handling high-voltage and high-power applications than MOSFET's. Due to IGBT's tail-current characteristic, their maximum working frequency is restricted to 20–30 kHz [1]. It is necessary to lower the turn-off switching loss in IGBTs in order to operate them at high switching frequencies.

An external snubber capacitor or zerocurrent switching (ZCS) may be a solution to this problem. If you're looking for an efficient way to get rid of a carrier, you'll want to go with ZCS. It's no secret that ZVS full-bridge pulsewidth modulation converters have garnered a lot of

attention [2–5]. The ZVS conditions for the switches are provided through a phase-shifted PWM approach that utilises all of the bridge's parasitic parts. For high-frequency, high-power applications, ZVS with no extra components and low-device voltage/current stresses make it a highly appealing alternative to MOSFETs. It's unlikely that IGBTs would work well with the ZVS FB PWM converter because to the relatively small ZVS range, unless the leakage inductance is really big. However, Defects like as duty-cycle loss and parasitic ringing in the secondary restrict the converter's highest possible power rating, as well. A ZVZCS FB PWM converter [7] used IGBTs for a high-frequency converter. All principal switches employ IGBTs with no antiparallel diodes. IGBTs on the leading leg give the ZCS state to IGBTs on the trailing leg during freewheeling, thus the main current is reset using reverse avalanche-breakdown voltage. There are, however, a few downsides to this option. There is no remaining stored energy in the leakage inductance after the leading-leg IGBT's. During the freewheeling phase, there is parasitic ringing in the primary. Low and fixed reverse avalanche-breakdown voltage limits duty cycle control to 15–30 V. Unless the leakage inductance is very low, the overall efficiency of the circuit will be significantly reduced. The ZVZCS FB PWM converter was provided using a new technique [8]. During the freewheeling phase, the primary current is reset using a dc blocking capacitor and a saturable inductor

Deep Learning for Real-time Classification of Facial Emotions

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Abstract:

The discipline of computer vision and artificial intelligence relies heavily on facial expression identification. To make human-computer interaction effective in expanding artificial intelligence and humanoid robot applications, real-time facial recognition must be able to function at a high speed and accuracy rate. In this work, we used deep learning approaches to detect the faces in real-time video footage and identify the emotional states of these faces. For this investigation, we developed our own dataset of six distinct face expressions. After creating a convolutional neural network and training it using scratching, we were able to reach a 50% accuracy rate.. After that, we tripled the amount of photographs in our database and now have an accuracy rate of 62%. After expanding the number of photos in the dataset by 80 percent, we achieved a 74 percent accuracy rate using the transfer training approach and AlexNet's pre-trained networks. Our network trained with our own dataset scored a 72% accuracy rate when tested against the Compound Emotion dataset. The most likely explanation for this drop is because our dataset and the Compound Emotion dataset have different postures for photographs of furious emotions. However, we were able to accurately identify joyful and sad emotions with an accuracy rate of 100 percent and 89%, respectively. We've found that the work we're doing is effective when tested with a variety of individuals in a variety of environments and lighting situations.

INTRODUCTION

People's emotions may be conveyed in an instant via their facial expressions. Computer vision and artificial intelligence research rely heavily on facial expression-based emotion identification practices[1]. Wearable sensors can be used for emotion identification, however visual inputs without a physical link are more significant and more adaptable [2]. The use of artificial intelligence systems has expanded as a consequence of computer technology advancements. Using facial expressions to recognise emotions in real-time applications, such as humanoid robots that use artificial intelligence systems, is critical. Facial expression recognition technology has made significant advancements in a wide range of industries, including medical, retail, and the entertainment industry [3]. Due to the lack of pictures in most datasets used in face emotion recognition research, it is difficult to conduct facial emotion recognition. The vast majority of research towards real-time emotion recognition has used static pictures as the test subject. When the studies in the literature

over the last two decades have been evaluated, the number of studies on face emotion identification using computer vision methods has increased significantly in tandem with the development of computer technology. Convolutional neural networks

(CNNs) are typically not selected for visualising visual characteristics in most face recognition and detection applications [4]. In order to interpret a CNN model trained on a range of datasets for emotion identification, Breuer and Kimmel employed visual approaches. Face emotion recognition datasets are used to evaluate the performance of CNN, and certain facial emotion recognition datasets are also used.

Using two distinct forms of CNNs, Jung et al. [6] created a method. Feature extraction from visual datasets is one method, while geometric property extraction from face landmarks is another. As an example of unusual research on video, Kahou et al [7] trained deep convolutional neural networks using visual datasets and then applied it to videos. An emotion identification system based on video frames in real time with deep learning is proposed in this work. Unlike previous applications, the system maintains high accuracy results regardless of environmental circumstances and the number of models it is used with.. Six primary emotions, including anger, fear, happiness, neutrality, sadness, and surprise, have been given their own dataset. This dataset was then used to train the CNN model. AlexNet, a pre-trained network, was also used in experiments with this dataset. Furthermore, the CNNs were tested against a common dataset. Data processing, face detection, CNN architectures, and transfer learning methods are all

ANALYSIS OF DISEASES USING NUTRITIONAL INGREDIENTS FROM FOOD

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ABSTRACT

In the prevention and treatment of noncommunicable illnesses, such as cancer, it has long been recognised that a well-balanced, nutritious diet is essential (NCDs). Research has been conducted on the nutritional components of food that are beneficial in the rehabilitation of noncommunicable diseases, on the other hand, but only a small amount has been done. Because of the use of data mining technologies, we were able to conduct a thorough investigation into the association between food components and illnesses. In order to get started, we compiled a list of more than 7,000 disorders, after which we decided which foods were recommended for each condition and which foods were strictly forbidden. Using the China Food Nutrition as a reference, we went on to predict which nutritional ingredients are most likely to have beneficial impacts on disease using noise-intensity and information entropy.

At the conclusion of the research, we proposed an improved technique called CVNDA Red, which is based on rough sets and is used to select the necessary core ingredients from among the most favourable nutritional components. CVNDA Red is based on rough sets and is used to select the necessary core ingredients from among the most favourable nutritional components. A contraction of the phrases CVNDA and Red, which translates as "CVNDA Red." CVNDA Red is a trademark of the CVNDA Corporation. According to our knowledge, this is the first research in China to analyse the association between nutritious elements in food and illnesses via the use of data mining techniques based on rough set theory, which we believe is the case. We have shown via experiments carried out on real-world information that our data mining technique outperforms the conventional statistical approach, with accuracy 1.682 times greater than the conventional statistical methodology. By way of aside, our research has been beneficial in uncovering the first two to three nutritional components contained within foods that may be used to aid in the rehabilitation of a range of common conditions such as type 2 diabetes, hypertension, and cardiovascular disease. These experimental findings indicate the utility of using data mining to choose nutritional components in food for illness analysis when choosing nutritional ingredients in food when selecting nutritional elements in food when selecting nutritional components in food.

1. INTRODUCTION

As defined by the National Council on Chronic Illnesses (NCDS), chronic illnesses are those that are primarily caused by occupational and environmental factors, as well as lifestyle and behavioural variables. According to the organisation, chronic illnesses include obesity and diabetes as well as hypertension and tumours, among other diseases. Global Health Organization's (WHO) Global Status Report on Noncommunicable Diseases (Global Status Report on NCDs) states that the number of people who die each year from NCDs is increasing, resulting in a significant economic burden for the whole world's population. Noncommunicable diseases (NCDs) are responsible for over 40 million deaths per year worldwide, accounting for approximately 70% of all mortality on the globe.

Chinese chronic disease and nutrition statistics show that the number of patients suffering from noncommunicable diseases (NCDs) in the country outnumbers those in any other country on the planet, and that China's current prevalence rate has risen far above that found in any other country on the planet. According to government statistics, the number of people aged 60 and over in China has surpassed 230 million, with noncommunicable diseases (NCDs) accounting for around two-thirds of those affected (NCDs). As a consequence, relevant departments in each nation, particularly in China, such as medical schools, hospitals, and disease research organisations, are all worried about noncommunicable diseases (NCDs), which are a result of this (NCDs). It is vital to eat nutritious meals (NCDs) in order to maintain health and avoid the advent of noncommunicable diseases (NCDs) (NCDs). As a result of the rising adoption of this paradigm in China, the nation has also re-configured the relationship between food and health. However, data mining is still considered to be a novel method of investigating the nutritional features of food that might be used to help in the rehabilitation of people suffering from ailments in China, according to experts.

Quantized thermal conductance in metallic heterojunctions

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ABSTRACT

It is critical to understand how charge and heat are transferred at the nanoscale in order to create next-generation electronics and high-efficiency energy-harvesting devices for future applications. When it comes to probing the quantum limitations of transport, metallic atomic-size contacts are perfect systems. Several recent studies have shown that the thermal conductance and electrical conductance of gold atomic contacts may be quantized at room temperature. However, the quick breaking dynamics of metallic junctions at room temperature, which might surpass the average reaction time of the thermal measurement, represents a significant experimental barrier in such studies. An integrated heater that also serves as a thermometer is used in this break-junction arrangement, which combines Scanning Tunneling Microscopy with suspended microelectromechanical systems with a gold-covered membrane. Other metals, including as Pt, PtIr, and W, were used as tip materials instead of gold to demonstrate heat transfer measurements across single gold atomic contacts. The relationship between thermal conductivity and contact size is investigated as a function of the contact size and the materials employed. In our experiments, we have discovered that by utilising Pt and Pt-Ir tips, we may increase the mechanical stability and likelihood of creating single Au atomic connections. In the next section, we demonstrate the quantization of electrical and thermal conductances, followed by a demonstration of the Wiedemann-Franz law at the atomic scale. We anticipate that these discoveries will expand the flexibility of experimental methodologies for examining heat transport in metallic quantum point contacts, as well as the ability to investigate the thermal characteristics of molecular junctions.

Introduction:

The investigation of the heat transport characteristics of nanoscale metallic contacts is of critical importance for the scaling of electrical interconnects because of their small size and low resistance. Metallic atomic-scale contacts represent the absolute size limit and have been employed as ideal systems to test electrical conductance quantization over the last several decades¹. Meanwhile, they were used as electrodes to make contact with single organic molecules and investigate the charge transport capabilities of such molecules.²

It is possible to see quantization effects when the size of the conductor is equivalent to the wavelength of the charge carriers (F). Due to the fact that the typical transversal size of about a few atoms is on the order of the Fermi wavelength of the metal ($F = 0.5 \text{ nm}$) and the length (up to few nm in the case of atomic chains) are both well below the electron mean free path (10–100 nm) at room temperature, metallic atomic contacts are classified as quantum one-dimensional ballistic systems in this context.^{1,3} Charge transport in this regime is often characterised using the Landauer-Büttiker formalism⁴, which connects the electrical characteristics of the mesoscopic conductor with the quantum mechanical transmission and reflection probabilities of the electron wavefunctions.⁴

Break-Junction methods, such as Scanning Tunneling Microscopy with Break Junctions (STM-BJ) or Mechanically Controlled Break Junctions (MCBJ), have been used extensively to investigate the quantization of electrical conductance in atomic junctions (MCBJ).

² In these approaches, the electrical conductance is measured by repeatedly creating and breaking nanoscopic metallic contacts while the electrical conductance is measured. As a result of the quantization effects and atomic rearrangements, the breaking process is characterised by a gradual reduction in electrical conductance.⁵ The production of single atom connections prior to total rupture is characterised by the establishment of a distinctive conductance value that is dependent on the number of electronic channels accessible for conduction and the likelihood of transmission of those channels.⁶ Example: Single gold-atom contacts have an electrical conductance of $1 G_0$, where the electrical conductance quantum $G_0 = 2e^2/h$ is defined as the electron charge divided by the Planck constant. This corresponds to a single electron channel with complete transmission and spin degeneracy.

AIR POLLUTION DETECTION AND PREVENTION USING ML MODELS

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Abstract

Governments in both developed and developing countries are fully aware that air quality control is a crucial responsibility that must be completed. Conditions such as weather and traffic congestion, fossil fuel burning, and industrial features such as power plant emissions all have a substantial impact on environmental contamination and are thus considered to be environmental polluting factors. In terms of influence on air quality, particulate matter (PM 2.5) is the most significant of all the particulate matter that can be measured, and it deserves more attention than it now receives. Human health may be negatively affected when there is an excess of ozone in the air, which is conceivable when the amount of ozone is high in the atmosphere. No amount of emphasis can be placed on how vital it is to monitor its concentration in the atmosphere on a regular basis in order to effectively control it. In this study, logistic regression is used to determine if a data sample is contaminated or not polluted, based on the distribution of the data sample data. It is possible to estimate future levels of PM2.5 using autoregression, which is a statistical method that is based on previously gathered data. Being aware of the amount of PM2.5 that will be present in the air in the following years, months, or weeks allows us to work toward lowering its concentration to levels lower than those considered to be hazardous. Based on a data collection that includes daily atmospheric conditions in a certain city, this technique was developed to attempt to anticipate PM2.5 levels and identify air quality in a given place.

Keywords — Pollution detection, Pollution Prediction, Logistic Regression, Linear Regression, Autoregression

1. INTRODUCTION

Throughout the history of our planet, air has been regarded as the most important characteristic asset for the survival and existence of all life, and it is absolutely necessary for the survival and presence of all life. Today, air is considered the most important characteristic asset for the survival and existence of all life. Aerial oxygen is required by all forms of life, including plants and animals, for their essential endurance and presence in order to live and to be present in their surrounding environment. As a result, in order to thrive, all living things require a large

amount of clean, fresh air that is free of harmful gases in order to sustain their existence. An alarming amount of pollution is being released into the atmosphere by an expanding global population, its automobiles, and commercial enterprises all over the world. Depending on the conditions, being exposed to a polluted environment can have a variety of long- and short-term repercussions for a person's health.

Given that air quality forecasting models can provide early warnings when pollution levels are anticipated to approach unsafe levels of contamination, it may be beneficial to improve the accuracy of air quality forecasting models in certain situations. Vehicle exhaust, industrial facilities, and activities with a restricted geographic reach are some of the most prominent causes of pollution fixations in metropolitan areas. A variety of factors, including the following, have the potential to negatively impact human health and the environment as a result of air pollution, including: A high concentration of pollutants in the air, such as particulate matter (10 microns and 2.5 microns), carbon monoxide (CO), and Nitrogen Oxides (NO+NO₂), causes thousands of people to die prematurely every year. In recent years, the city's urban and contemporary neighbourhoods have suffered greatly from poor air quality, which has been exacerbated by the tremendous natural piling that has occurred in the area. On the next day, we officially launched our investigation into the air quality in Ghaziabad, which was the formal start of our investigation. There has been a substantial amount of public interest in the task of monitoring and improving the quality of the air we breathe in recent years. This research's overarching purpose is to identify and evaluate acceptable artificial intelligence strategies that can aid in better forecasting the fixation of air pollution, which is the primary focus of this investigation. The

DIAGNOSTIC OF EYE ILLNESSES (GLAUCOMA & ARMD)

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ABSTRACT

As population aging has become a major demographic trend around the world, patients suffering from eye diseases, such as Glaucoma, ARMD are expected to increase. Early detection and appropriate treatment of eye diseases are of great significance to prevent vision loss and promote living quality. Conventional diagnosis methods are tremendously dependent on physicians, professional experience and knowledge, which lead to high misdiagnosis rate and huge waste of medical data.

In this project, a deep learning model based method which is inspired by the diagnostic process of human ophthalmologists is proposed to automatically classify the fundus photographs into 2 types with or without ARMD categories also, with Or without Glaucoma. The project consists of two different neural network models developed to recognize the diseases, Glaucoma and ARMD. Better accuracy is obtained as we use deep learning. This project will be an aid to eye specialists in giving an efficient treatment. Eyesight is one of the most important senses, the developed project can help people all over to maintain eye care. This project uses Kaggle Glaucoma and ARMD datasets. This model predicts Glaucoma with 90% accuracy and ARMD with more than 70% accuracy.

1. INTRODUCTION

The rising prevalence of age-related eye diseases, particularly age-related macular degeneration, places an ever-increasing burden on health care providers. As new treatments emerge, it is necessary to develop methods for reliably assessing patients' disease status and stratifying risk of progression. The presence of drusen in the retina represents a key early feature in which size, number, and morphology are thought to correlate significantly with the risk of progression to sight-threatening age-related macular degeneration. The damage of optic nerve which is especially responsible for the proper eyesight, if damaged causes Glaucoma. Glaucoma is not only caused for elderly people, but also can affect people of any age. Manual labeling of drusen or any damage in the eye, on color fundus photographs by a human is labor intensive and is where automatic computerized detection would appreciably aid patient care.

This project aims to develop appropriate algorithm to detect these diseases. The retinal or fundus images of eye, are processed to recognize any

symptoms of diseases, such as Glaucoma, ARMD(Age-related macular degeneration). Based on the symptoms, the disease is identified, if any. This project will be an aid to eye specialists in giving an efficient treatment. Eyesight is one of the most important senses, the developed project can help people all over to maintain eye care.

1.1 Problem Definition:

Eye sight is one of your most important senses: 80% of what we perceive comes through our sense of sight. Early detection and appropriate treatment of eye diseases are of great significance to prevent vision loss and promote living quality. The aim of the project is to develop a deep learning model which uses Convolutional Neural Networks to detect whether the given image of fundus is suffering from Glaucoma or Not and ARMD or not. Detection of Eye Diseases i.e., Glaucoma & ARMD model is built using Keras API of Tensorflow 2.0. The deep learning techniques will aid in fast and accurate diagnosis.

1.2 Project Scope:

This project aims to detect the ARMD and GLAUCOMA diseases using deep learning model. In this project, a novel convolutional neural network model with the CNN architecture is trained with a transfer learning technique. The proposed model accepts fundus images as inputs and learns from their features to help to make a prediction. This project is developed with a motive to help Eye care workers, to help reduce the time taken for generating a diagnosing report of disease recognition, which would manually take upto 2 weeks of time. This system can be used for mass Eye care camps across remote areas, which would hugely benefit the people living in such areas.

English Vocabulary for the Finance Industry

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Abstract

English nowadays is increasingly influenced by the use of English in Finance. Knowledge of fresh, specialised English vocabulary not only enhances speech and writing, but it also facilitates the development of fruitful diplomatic ties between nations. An intermediate-level course in Financial English is the focus of this essay. It is our goal to demonstrate how to teach Business English and provide some insight on the new and fascinating words and their widespread usage. The majority of the information was gleaned from Cambridge University Press – Professional English Online and a variety of dictionaries, with a few citations to news articles covering current events in society.

Keywords: how to teach or learn financial English at an advanced level

Introduction

A language reflects the culture in which it is spoken. However, in terms of the lexeme's semantic evolution, it seems that each epoch shared certain traits with the one before it. In Shakespeare's sonnets, for example, "and I my self am mortgaged to thy will" (Shakespeare 1609, In (eds.): R. Proudfoot et al. 1998: 40), lexemes communicate meaning and connect the old and new ideas. The lexical and lexical meanings of many languages have changed throughout time, and a conscious language speaker should keep up with these changes. The vocabulary in the field of business English is constantly evolving due to the massive introduction of new terminology. English for Specific Purposes (ESP) is an umbrella phrase for teaching business English (ESP). ESP, as its name implies, is a kind of learning that has a specific goal in mind, such as for professional, academic, or technical goals (Hashimoto, 1994: 101). When it comes to "ESP," "ESP is an approach to language education in which all choices as to content and manner are based on the learner's motive for learning" (Hutchinson and Wafers, 1987: 19 as cited in Hashimoto, 1994: 101). Because "business English is not just about language, but also about language usage," we need to design appropriate resources and use a variety of strategies while teaching business (English) pupils (Robinson, 1990 as cited in Stan, 2013:102). Because of this, it is critical to offer the methods for teaching and learning the vocabulary of English for Specific Purposes (such as Financial

English), despite the fact that scientific research on the subject is lacking. Grammar, on the other hand, is an essential and indispensable component of learning and teaching a foreign language. An intermediate-level course in Financial English is the focus of this essay. To help instructors and students of Business English discover a better approach to teach vocabulary and acquire financial language, this article will hopefully be acknowledged as a guide for both groups of people. Three types of vocabulary learning and teaching methods exist (explicit, independent and incidental vocabulary learning). This is a more intermediate-level course, thus the language has been modified to better suit the audience.

2. Different approaches to vocabulary learning and instruction

Vocabulary learning and teaching may be done in three ways: Extensive vocabulary instruction Development of strategy on one's own 3. Acquiring new vocabulary on the side Those who read this article will be able to connect these methods to some of the ways for acquiring and teaching Financial English terminology that are covered later in this book. The direct method of acquiring vocabulary is essential to explicit vocabulary acquisition. L2 lexeme acquisition is the goal of this course. Financial English vocabulary study approaches including dictionary usage, vocabulary lists and translations, matching terms with multiple meanings and semantic mapping are all included in this guide. According to Trong Tuan (2011), (Nation 2001: 1689). This method to vocabulary acquisition focuses too much on translation in the primary language (Schmitt, 2000as referenced in Trong Tuan 2011: 1689) and is too teacher centred (Schmitt, 2000). In the case of primary school students, however, it may be helpful (Coady, 1997as cited in Trong Tuan 2011: 1689). The method of teaching and learning vocabulary using pictures, which will be discussed in more detail in the following paragraphs, falls under the category of autonomous vocabulary learning. This method relies on context or "graphics, graphs, charts..." to help deduce the intended meaning. As

Ternary liquid crystal combination having complicated E7/6CB/6BA electro-optical, thermal, and dielectric characteristics

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Abstract:

In this work, a new liquid crystal mixture complex was devised and synthesised using the nematic liquid crystal mixture E7, hexylcyanobiphenyl (6CB) and hexylbenzoic acid (6BA) (6BA). The thermal and morphological characteristics were studied by differential scanning calorimetry (DSC) and polarised optical microscopy (POM) (POM). The DSC and POM data demonstrate that the liquid crystal complexes display liquid crystalline qualities with smectic and nematic phase. While the E7 ratio is 80 percent, the mixed complex has the broadest nematic range and shows E7 features. When the E7 weight ratio is less than 80 percent, with the creation of hydrogen bonds the number of mesogenic phases rises and the nematic range declines. The electrical characteristics of acquired samples were examined using impedance spectroscopy method. The birefringence and contrast ratio of samples also studied with the assistance of light transmittance experiment.

Keywords: Electro-optical characteristics, birefringence, contrast ratio, DSC, and POM are all terms related to liquid crystal mixes.

1. Introduction:

Functional soft materials between liquids and crystals, liquid crystals (LC) have lengthy orientation orders [1–2]. Researchers are interested in LCs despite the fact that they were developed by Friedrich Reinitzer in 1888. LC screens, cellphones PCs tablet, optical and biological sensors, [3–8] are some of the most common uses. There are primarily two methods for fine-tuning the thermal and electro-optical characteristics of LCs materials. There are two primary approaches to creating novel materials with improved properties: synthesis of new LC materials or obtaining LC mixes, and dispersion (grafting or doping) of nanostructures and/or polymers and/or dyes into LCs. Some binary and ternary LC mixtures' physical, thermal, and textural features have been examined by our team of scientists [16–19]. Sundaram et al [20] provided a simple and inexpensive method for producing mesogenic 7OBA and nonmesogenic citric acid LC complexes. In addition, researchers are interested in hydrogen bonded liquid crystals complexes because new materials may be created through intermolecular hydrogen bonding [21]. Researchers have looked at

binary complexes of 4-methoxycinnamic acid (4MCA) and p-n-alkoxy benzoic acid (nOBA) [22]. Ferroelectric liquid crystals between dextrolevotartaric acid and nBAO, n=7 to 12, have been studied by Mahalingam and co-workers [23]. Although TiO₂ nanoparticles and fluorescent dye dispersion were reported in literature to increase nematic LCs' birefringence [24, 25], this was not the only method. Furthermore, it was discovered that adding TiO₂ nanoparticles to nematic LCs reduced dielectric anisotropy [26]. Manohar et al [27] have showed that InP/ZnS core/shell quantum dots (QDs) nanoparticles also boosted the birefringence value. The 0.25 wt % concentration of Cd_{1-x}Zn_xS/ZnS core/shell QDs greatly boosted the ACCEPTED MANUSCRIPT memory parameter [28]. [20, 21]. The phase transition of an E7 LC mixture containing carbon nanotubes has been found to be somewhat altered [29]. Gold nanoparticle doping in polymer dispersion LCs improved dielectric anisotropy [30]. Thersold voltage of nematic LCs may be considerably reduced by Fe magnetic nanoparticles [31] as well. Thermal, dielectric, and birefringence characteristics of the novel LC mixture created by utilising E7 nematic E7 and 6CB and 6BA mixtures were studied in this work.

2. Experimental:

Materials:

Faculty of Advanced Technologies and Chemistry, Military University of Technology Poland, acquired E7 liquid crystal combination. Hexylcyanobiphenyl and 4-hexobenzoic acid liquid crystals were purchased from Sigma Aldrich, respectively. Figure 1 depicts the molecular structures of the liquid crystals that were employed in this study. Instec supplied the planer alignment LC cells with cell gaps of 8 nm.

Preparation of E7/6BA/6CB ternary mixture:

This can be seen in Table 1 where the four ternary combinations were formed by weighing at 80/15/6CB/5BA, 60/30/6CB/10BA, 40/45/15/6Ba

SECURITY ANALYSIS AND IMPROVEMENTS OF ACCESS CONTROL IN THE INTERNET OF THINGS

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ABSTRACT:

The Internet of Things is an omnipresent concept with physical objects connecting with the Internet and programmed with specific identifications to guarantee that they can recognise and continuously gather and share data over a network. The Internet of Things As a consequence, the security of data sharing and interconnected sensor nodes grows very rapidly, the safety of network, data and sensor devices is a major concern of the IoT network. This paper analyses the authentication system and the Internet of Things access management. protocol is costly for exchanging packets and according to our study the security assessment is not sufficient enough for such a protocol. We therefore suggest changes to the protocol to fill the holes observed. The protocol enhancements allow for many user services, including anonymity, mutual authentication and a secure session key configuration. Finally, the efficiency and safety assessment reveals that the improved protocol provides several advantages over common attacks, improving stability at low connection costs. The Philosophy of the InternetInterconnection to the Internet helped objects or devices to achieve certain common goals for each other and for people. IoT should be integrated seamlessly in our society in the near future and citizens will fully depend on this technology for comfort and simplicity. In a single paper, we tried to make improvements and access control techniques accessible.

KEYWORDS: Internet things; wireless sensor network; access control.

1. INTRODUCTION

There are now a number of imagined and implemented applications using smart devices and sensing nodes, forming a global and Internet-based

Internet of Things (IOT) platform. Under the ITU concept, the basic IOT design can be as perceived almost every physical thing in the world could precisely — it's all about Not transformed to computers but small computers have a small footprint and intelligent nature. IOT involves numerous technologies, including architecture, sensors, etc. Coding, transmitting, processing data, network, discovery, etc. Kevin Ashton was the first to coin the Auto-ID Center's co-founder and managing director at MIT. The term Internet of Things in the supply chain management context in 1999. However, in the concept was expanded over the past decade with new IOT network applications like Electronic health and transport services. The development of IOT comes from the convergence of Wireless technology, microelectromechanical (MEMS) and digital technology development Electronics in which miniature devices are able to understand and calculate and wirelessly chat. In the age of IOT, human contact and friendship Machines are increasingly regarded as machines that are smarter and more human Tasks and people have to trust the computer and feel secure in this scenario. That's one thing might be a patient with a medical implant for real-time tracking in a medical application or an accelerometer for moving in a field setting connected to the cow. Figure 1 shows the An incipient application that focuses on the hype cycle for emerging technologies, and is the fastest running, annual Internet of Things (IOT) cycle on the interconnection of things or devices and to people or consumers to accomplish certain general objectives.

Figure 1. Gartner 2013 New technology hype cycle.

Review of Literature and Open Challenges for Predicting Cyberbullying on Social Media in the Big Data Era Using Machine Learning Algorithms

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ABSTRACT

It wasn't until the advent of information and communication technology (ICT) that social contacts began to expand beyond geographical bounds. With the recent advancements in communication technology, the time and space constraints of conventional communication are no longer an issue. They have ushered in a new age of user-generated content, online networks of people, and statistics on human activity. Social media (SM) platforms, in particular, have been misused to develop a new type of anger and violence that happens only online. This study examines a brand-new method for displaying hostile conduct on social media websites. The development of predictive algorithms to combat aggressive behaviour in SM is also explained in this section. Cyberbullying prediction models in SM have a number of challenges, which we address in our evaluation of cyberbullying prediction models. When it comes to cyberbullying detection, this document gives an overview of the whole procedure. When it comes to predicting cyberbullying behaviours, several machine learning methods are being used, however the main focus is on feature selection techniques and their subsequent application to data collecting and feature engineering. New study avenues have also been identified as a result of the highlighted concerns and limitations.

INDEX TERM Big data, cyberbullying, cybercrime, human aggressive behavior, machine learning, online social network, social media, text classification.

INTRODUCTION

To better predict and detect the detrimental consequences of big data, researchers with limited resources may employ machine or deep learning methods [1]. People and human behaviour, especially cyberbullying [3] are covered extensively. Although it's now feasible to do a massive data analysis, it may also reveal previously unreachable knowledge using deep learning from this acquisition. If [1] is the case, then

Big data analytics has improved the quality of social media and other human-related data sources (SM).

Even the capability of foreseeing the future has become a fact of everyday life. We may use machine learning algorithms to analyse SM data and integrate it with huge data in order to predict the future of

different algorithms. A method for detecting and preventing hostile behaviour must be devised by analysing data on human behaviour and interactivity. To ensure this article was approved for publication, Kathiravan Srinivasan, the article's associate editor, was in charge of supervising its examination and approval. theorem fusion, many faces and angles, and as well as methodologies drawn from a wide range of academic fields. The availability of large-scale information generates new research problems, novel computational tools, transdisciplinary approaches, and excellent opportunities to statistically investigate many vital concerns. For example, traditional statistical techniques are difficult to scale and are inaccurate in this context. Structured data on human behaviour and small-scale human networks are often employed to assist these tactics in practise (traditional social networks). As a consequence, implementing these strategies on massive online social networks is fraught with difficulties (OSN). Due to OSNs' fast growth, they both encourage and facilitate the spread of violent behaviour. As for OSNs, researchers may use the information they give in the form of OSN data to develop effective techniques to recognise and restrict improper conduct and/or aggressive behaviour. It is possible for criminals to carry out hostile activities and to create networks for the purpose of doing crime via the usage of OSN. Complex systems demand tactics that include both the content and the network when trying to detect and restrict aggressive behaviour.

Because of this, the remainder of this paper is organised as follows. Users may participate in abusive behaviour in a new manner on social media networks, as detailed in Subsection I.A. Reasons for constructing prediction models to counteract SM hostility are laid forth in this section. To I.C., building cyberbullying prediction models is of paramount significance. This study's methodology is explained in detail by I.D, so please elaborate. Section 2 examines in depth the cyberbullying prediction models of SM websites, from data

DOUBLE LAYER METAMATERIAL SUPERSTRATE IMPROVES MICRO-STRIP PATCH ANTENNA PERFORMANCE

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Abstract: A metamaterial antenna operating at a frequency of five in this article. Eight GHz are given. The superstrate cover of the metamaterial functions as a mirror that focuses EM radiation on the odd houses of the metamaterial, enhancing the efficiency of the patch antenna alongside its defense against body conditions. The proposed metamaterial lens consists of a double layer with a 9-through-nine cut-ring resonator matrix (SRR) that is located over a rectangular sample fed patch that resonates at 5. Eight GHz. Eight GHz. The type increases the gain and guidance of a simple patch antenna to 7 dB. The simulation results of the proposed antenna are presented in this letter and addressed.

Keywords: Metamaterial (MTM), Split Ring Resonator (SRR).

1. INTRODUCTION

An overwhelming boom in the area of telecommunications has contributed to substantial desires and has culminated in the main antennas equipment exchange, depending on the frequency, statistical charge or range of transmission.

The antenna is one of the highest components in the wireless communication networks, as the antenna's overall output alone will severely influence the overall performance of the whole device. The design objective of an antenna is periodically controlled by the requirements given by the skipper. Many implementations suggest that the antenna must be compatible and that it may have an excessive orientation during transmission. Those specifications, namely high guidance, are the key trends among antennas and typically offer engineers working in this field a marvelous mission. Traditional antenna technology requires different radiating elements to produce the antenna array [1] to achieve high directivity. However, such a configuration of a frame includes a complicated feed network and requests that a few antenna considerations be held well. Due to the fact that a malfunctioning antenna factor of one or more can also sometimes have serious consequences on the overall efficiency of the antenna system, different exciting responses were suggested to improve the Patch Antenna Directiveness: the main was used to alter the antenna parameter using

the DGS approach and the second proposed these days was modified to s

More recently, a new approach is being suggested to increase the antenna's directivity mainly focused on the usage of artificial substances such as left-over metamaterials [4]. These modern types, consisting of periodic unit frameworks compactly crowded into a strong tissue, open the door to look at some wonderful homes that cannot be done with natural materials.

Most study has been carried out to achieve the high antenna directivity using metamaterial systems [5–12]. MTMs may be produced utilizing different methods, including photonic crystal [9], electromagnetic band gap [12–13], selective surface frequency (FSS) [10–11] or other periodic artificial fabrics engineered to have a low 0 refractive index [12–13]. Especially, horrible null or near zero index refractive metamaterials are used to create a possible packaging of several Wh. Those are, for instance, best lens [14], clocking invisibility [15], and microwave gadget miniaturization [16].

In this paper we have given a metamaterial antenna with 5.8 GHz WLAN program. The superstrate double-layered metamaterial used in this layout is constructed by means of a cut-off ring resonator (SRRs), which was first developed with Pendry et al. in 1999 [17] to achieve poor permeability in a positive frequency range. This element's most enticing attribute is its capacity to view a quasi-static resonant frequency at wavelengths that are far wider than its own duration. We've investigated the effect of metamaterials Radom on the directivity, benefit and bandwidth of the antenna by way of the use of CST Microwave studio. It's far observed that by using optimizing the separation distance between the antenna and the double layer metamaterial superstrate the directivity of the antenna has been increased via 7 dB.

PRIME NUMBERS ANALYSIS AND THE RIEMANN HYPOTHESIS presents an analysis of prime numbers

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Abstract:

Many different elements of topology, cryptography, and other fields rely on prime theory calculations. This article examines prime number theory from a fresh perspective in an effort to give new measurements and insights into the arrangement of prime numbers. Python's prime package package was used for the computations, which can be installed as a module using pip install prime package.

Introduction

Euler and his colleagues had laid the groundwork for prime analysis, which the Riemann Hypothesis built on. The conclusions of the Riemann Hypothesis are used to further investigate the nature of prime numbers in this work. As mathematics is the sole means of expressing the universe apart from our personal perspective, prime numbers are found throughout the discipline. Perception. Primate number theory is so very important in practically every field of excellent reason for this investigation is provided. I'll begin by saying that by examining the best-selling items and putting together a system to categorise them. Then, go further into the examination of quadrants before concluding this article with the direct prime formulas. Python was used for all of the research in this publication.as well as pre-packaged best products available. Two unique primes will be defined as prime products in this study. In this case, p1 is divided by p2. items that are of the highest quality of two primes are employed in the IT sector to secure information.'sill start by putting up the context for my discussion of prime. products. There is just one prime plane MP in which all prime products pp may be found. And it's possible that Planes flying in formation. The dominating plane of any prime may exist on numerous planes. On numerous planes at the same time, he is known as "Optimus Prime". In order to determine the prime factorization formula, for a certain plane of travel Optimus is a brand.

Unsolved issues abound in number theory, which deals with prime numbers, and have been attempted by the finest minds for centuries. Mathematical propositions that have yet to be proved, but which we firmly believe in, are some of the open questions. The term "conjecture" or "hypothesis" is used to describe such unsubstantiated theories. We've previously touched on the idea that there may be an unlimited number of pairs of prime integers that are only separated by two digits. Even numbers may be expressed as the sum of two prime numbers, according to Goldbach's conjecture, a well-known theory. For instance, $16 = 13 + 3 + 54 = 47 + 7 = 76$. Achieving any of the above will earn you everlasting fame.³

Riemann's hypothesis, perhaps the most famous unresolved issue in mathematics, was presented by the same Bernhard Riemann cited before. An 1859 study by Riemann outlined a hypothesis about how far away from the real value of the number of primes to x , (x) , was an estimate offered by Riemann's prime number theory. Or to put it another way, what can be stated about "error term" in prime number theorem — the discrepancy between the true amount and the proposed formula? This is one of the seven challenges for which the Clay Foundation will award a \$1,000,000 prize to the person who finds a solution! If you haven't been swayed by this award yet, maybe it will.

What's the big deal? Who is interested in it? The complexity and inherent beauty of a problem are the primary criteria used by mathematicians when evaluating a solution. Both of these attributes apply highly to prime numbers. However, there are practical applications for prime numbers as well. In the last several decades, research on prime numbers has had a significant impact on encryption (the science of encrypting secret communications). Earlier, we addressed a hypothetical novel by Carl Sagan, in which an alien civilization uses

A crane hook's design and stress values are computed.

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ABSTRACT

As a result of the buildup of a considerable amount of forces, crane hooks are constantly at risk of failure.. CAD software is used to create a solid model of a crane hook so that the stress distribution can be examined while the hook is fully loaded. The 3D representation of a crane hook's stress concentration may be seen in real time. As part of this study, a CAD programme called SolidWorks is used to create a crane and determine von misses stresses by applying force to it. After the design and calculation of stress values, material selection and discussion of each material's characteristics are performed.

INTRODUCTION

A crane is a sort of equipment that may be used to raise and lower goods, as well as to move them horizontally, using a hoist, wire ropes or chains, and sheaves. It is mostly used for the purpose of moving large objects from one location to another. It employs one or more basic devices to provide mechanical advantage, allowing it to lift and move weights that are normally beyond the capabilities of a human being. The loading and unloading of freight, the transfer of materials in construction, and the assembly of heavy equipment are all frequent uses for cranes in the industry.

Ancient Greeks constructed the earliest construction cranes, which were propelled by people or animals of burden like donkeys. For the construction of towering

structures, these cranes were used. Later, larger cranes with human tread wheels were constructed, allowing for the lifting of even bigger loads. During the High Middle Ages, cranes were used for ship loading and unloading, as well as for the building of ship towers. There were first wooden cranes, but cast iron and steel replaced them throughout the Industrial Revolution. Although hoists in watermills and windmills might be powered by the harnessed natural force, for many centuries, power was provided by the labour of men or animals. Mechanical power was originally supplied by steam engines, which were first used in the 18th or 19th centuries and were still in use far into the late 20th century. The first steam crane was built about this time. In modern cranes, most are powered by internal combustion engines or electric motors and hydraulic systems, although manual cranes are still used in places where providing power would be too expensive.

Depending on the task at hand, cranes may be found in a wide range of shapes and sizes. The tiniest jib cranes may be employed in a workplace, while the highest tower cranes are used to erect skyscrapers. For a brief while, small cranes were also utilised for high-rise building construction in order to make it easier to get into tight spots. We might also come across bigger floating cranes that are utilised for oil rig construction and ship salvage.

This article also covers lifting machines that do not strictly fit the above definition of a crane, but are generally known as cranes, such as stacker cranes and

A Review of Research on The MSRTC Bus Station Quality

Improvement Survey

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ABSTRACT

The MSRTC bus station in Amravati, India, conducts a quality function deployment (QFD) survey in order to better understand and identify the needs and requests of its customers and to enhance the quality of the service provided by the bus station. The survey was done using the prescribed questionnaire and delivered to 5000 users in order to discover the demands of the consumers. In the first stage of QFD, the results of these surveys were utilised as feedback. Taking into account every component of the public transportation system, a total of 20 major features and 17 subfeatures were created. The results of the surveys used in this research show that the ticket prices and frequency of the transportation system should be the primary emphasis of this article in order to enhance public transportation quality. Search terms include: MSRTC; Survey; Transportation Service; Infrastructure; QFD

INTRODUCTION

Poor quality service and unmet expectations have made the Maharashtra State Road Transport Organization (MSRTC) a state-owned corporation that offers transportation services to distant or unreachable rural communities in Maharashtra. As a result, many passengers choose to use private transportation, which offers a higher level of comfort. MSRTC's excellent services and facilities are being advertised, despite the fact that they are claiming otherwise. However, ongoing assessments are required to maintain and monitor the infrastructure at each bus stop, as well as the quality of the services they provide. The level of service given at each bus stop should then be monitored using input from passengers in the form of answers. MSRTC bus station in Amravati, India, was examined in this research for its quality of services and amenities by transforming customer feedback into new offerings that actually meet their requirements. In this article, a survey analysis is conducted using information gathered from passengers via questionnaires, interviews, and observations at bus stops pertaining to MSRTC services and amenities, as well as direct

comments from passengers on MSRTC services. As part of this study's research design, the QFD

technique (Quality Function Deployment) procedure is employed in order to identify the emphasis that consumers place on their varied expectations, which are then translated into functional design and linked to operational processes.

LITERATURE REVIEW

This research covers a wide range of topics related to the improvement of service quality. In order to improve the quality of service, researchers use a variety of tools, including those developed by Dr. Arvind Chaudhari, who is currently conducting a study to determine the actual location of passenger comfort facilities at bus stations and the degree to which passengers are satisfied with the services provided by these facilities. It was a pleasure working with Dr. Prakash Vishnu. Public and private transportation services are examined in terms of passenger satisfaction and the causes for passenger discontent in the case of MSRTC on the basis of several psychological and physical characteristics. For the Maharashtra State Road Transport Corporation, Madhuri Rahatgoonkar and Mayura Mathankar both attempted to measure the amount of happiness of passengers and the level of awareness of passengers about its services. To improve road passenger transportation services, Pakdil et al. [22] developed a QFD technique that combines traveller feedback with practical information from the transport service provider. As far as meeting customers' voices goes, staff attention for their customers, technical conditions of buses and error-free facilities were considered to be the most important factors. The sample size of 285 respondents from one focus group was a drawback of this research. In this case study, the QFD technique was used to discover the desires and requirements of urban public transportation users and to improve service quality in Belgrade's urban public passenger transportation. Using QFD to improve public transportation service quality is discussed in this study.

A Switched-Capacitor Bidirectional DC-DC Converter with a Wide Voltage Gain Range for Electric Vehicles with Hybrid Power Sources

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Abstract— An exchanged capacitor bidirectional DC-DC converter with a high advance up/step-down voltage gain is proposed for electric vehicles (EVs) with a half breed vitality source framework (HESS). The converter displayed has the benefits of being a basic circuit, a diminished number of parts, a wide voltage-gain extend, a low voltage stress, and a shared opinion. Likewise, the synchronous rectifiers permit zero voltage exchanging (ZVS) turn-on and turn-off without requiring any additional equipment, and the proficiency of the converter is improved. A 300W model has been created which approves the wide voltage-gain scope of this converter utilizing a variable low-voltage side (40V-100V) and to give a consistent high-voltage side (300V). The greatest effectiveness of the converter is 94.45% in step-down mode and 94.39% in step-up mode. The test results additionally approve the possibility and the adequacy of the proposed topology.

Index Terms—Switched-capacitor, Synchronous rectification, Bidirectional DC-DC converter, EVs, HESS, Wide voltage-gain range

I. INTRODUCTION

To address the challenges of fossil fuels as the primary energy source for transport (including reducing stockpiles and polluting emissions) [1]-[2], electric vehicles (EVs) powered by battery systems with low or zero polluting emissions, are increasing in popularity. Although the developed advancement of batteries can provide higher population performance for EVs, the unlimited charging or discharging current (i.e. inrush current) from batteries will result in shorter battery cycle life, as well as reducing the efficiency [3]. The combination of a battery and super-capacitors as a hybrid energy source system (HESS) for electric vehicles is considered as a good way to improve overall vehicle efficiency and battery life [4]. Super-capacitors have advantages of high power density, high cycle life, and very good charge/discharge efficiency. They can also provide a large transient power virtually instantaneously and are therefore suitable for meeting sudden EV power changes such as acceleration or meeting an incline.

The HESS can make full use of the performance of batteries and super-capacitors: the super-

capacitors supply power for acceleration and regenerative braking with the battery meeting the requirement of high energy storage density for long range operation [5]. A challenge for the HESS is that the terminal voltage of super-capacitors is low, and varies over a wide range as they are charged or discharged. Therefore, a bidirectional DC-DC converter with a wide voltage-gain range is desired for the HESS to connect low-voltage super-capacitors with a high-voltage DC bus. There are two broad classifications for bidirectional DC-DC converters, namely isolated converters and non-isolated converters. Isolated converters, such as half-bridge and full-bridge topologies are implemented using a transformer [6]-[8]. In addition, the half-bridge converter in [6] needs a center-tapped transformer which results in a complex structure, and the full-bridge converters in [7]-[8] require a higher number of semiconductor devices. High-frequency transformers and coupled inductors can be used in isolated converters to obtain high step-up and step-down ratios [9]-[11]. However, in [9], the realization of bidirectional power flow requires ten power semiconductors and two inductors. The converter in [10] requires two inductors in addition to the transformer, and three inductors are used for the converter in [11]. The structure of these converters is complex, the cost is high, and it is difficult to standardize the design. When the turns ratio of the high frequency transformer increases, the number of winding turns increase correspondingly and the leakage inductance of the transformer may result in high voltage spikes across the main semiconductors during switching transitions. In order to reduce the voltage stress caused by the leakage inductance, a bidirectional DC-DC converter with an active clamp circuit in [12] and a full bridge bidirectional DC-DC converter with a Fly back snubber circuit in [13] were proposed. Besides, the dual active bridge converter in [14] and the phase-shift full-bridge converter in [15] also utilized the leakage inductance to achieve the soft-switching, and the energies stored in the leakage inductance were transferred to the load. When the input and output voltages do not match the turns ratio of the transformer, the power switch losses will increase dramatically [16], which reduces the

DESIGN OF THE MULTI-CYLINDER ENGINE CAMSHAFT

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ABSTRACT

The cam shaft and its associated parts control the opening and closing of the two valves. The associated parts are push rods, rocker arms, valve springs and tappets. It consists of a cylindrical rod running over the length of the cylinder bank with a number of oblong lobes protruding from it, one for each valve. The cam lobes force the valves open by pressing on the valve, or on some intermediate mechanism as they rotate. This shaft also provides the drive to the ignition system.

In this work, a camshaft is designed for multi cylinder engine and 3D-model of the camshaft is created using modeling software Solidworks with different materials aluminum alloy, forged steel & cast iron.

Present using the cast iron material for camshaft, we are replaced with aluminum alloy & forged steel.

Modeling done on Solidworks software.

INTRODUCTION

A cam is a rotating or sliding piece in a mechanical linkage used especially in transforming rotary motion into linear motion or vice versa. It is often a part of a rotating wheel (e.g. an eccentric wheel) or shaft (e.g. a cylinder with an irregular shape) that strikes a lever at one or more points on its circular path. The cam can be a simple tooth, as is used to deliver pulses of power to a steam hammer, for example, or an eccentric disc or other shape that produces a smooth reciprocating (back and forth) motion in the follower, which is a lever making contact with the cam.

Overview

The cam can be seen as a device that translates from circular to reciprocating (or sometimes oscillating) motion. A common example is the camshaft of an automobile, which takes the rotary motion of the engine and translates it into the reciprocating motion necessary to operate the intake and exhaust valves of the cylinders. The opposite operation, translation of reciprocating motion to circular motion, is done by a crank. An example is the crankshaft of a car, which takes the reciprocating motion of the pistons and translates it into the rotary motion necessary to operate the wheels. Cams can also be viewed as information-storing and -transmitting devices. Examples are the cam-drums that direct the notes of a music box or the movements of a screw machine's various tools and chucks. The

information stored and transmitted by the cam is the answer to the question, "What actions should happen, and when?" (Even an automotive camshaft essentially answers that question, although the music box cam is a still-better example in illustrating this concept.) Certain cams can be characterized by their displacement diagrams, which reflect the changing position a roller follower would make as the cam rotates about an axis. These diagrams relate angular position to the radial displacement experienced at that position. Several key terms are relevant in such a construction of plate cams: base circle, prime circle (with radius equal to the sum of the follower radius and the base circle radius), pitch curve which is the radial curve traced out by applying the radial displacements away from the prime circle across all angles, and the lobe separation angle (LSA - the angle between two adjacent intake and exhaust cam lobes). Displacement diagrams are traditionally presented as graphs with non-negative values. A camshaft is a shaft to which a cam is fastened or of which a cam forms an integral part.

The cam is driven by timing gears, chains, or belts located at the front of the engine. The gear or sprocket on the camshaft has twice as many teeth, or notches, as the one on the crankshaft. This results in two crankshaft revolutions for each revolution of the camshaft. The camshaft turns at one-half the crankshaft speed in all fourstroke-cycle engines.

CAMSHAFT FUNCTION

The camshaft's major function is to operate the valve train. Cam shape or contour is the major factor in determining the operating characteristics of the engine. The lobes on the camshaft open the valves against the force of the valve springs. The camshaft lobe changes rotary motion (camshaft) to linear motion (valves).

Cam lobe shape has more control over engine performance characteristics than does any other single engine part. Engines identical in every way except cam lobe shape may have completely different operating characteristics and performance. See Figure 9-1. The camshaft may also operate the following:

IoT SOCIAL DISTANCING & MONITORING ROBOT FOR QUEUE

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Abstract

Covid transmission may be prevented by establishing a perceived distance between those who distribute it and those who receive it. No one can currently be stationed in each row seven days a week for the sole purpose of monitoring potential violations of social distance. Banks, government offices, shopping malls, schools, theatres, and so on are among the institutions. Several of them are available. It is not uncommon for long lineups to form throughout the day. Measurement of social distance amongst queuing people is an important part of our research. robot.

I. INTRODUCTION

As of the end of 2019, COVID19 has spread around the world and has the potential to become a severe health and safety hazard for communities, healthcare workers, and members of the general public. Healthcare systems throughout the world [1] are in desperate need of change. Throughout the duration of the Robots will be sent all across the globe if a pandemic occurs, according to plans being developed. In order to improve patient care and reduce the pressure on the healthcare system throughout the world the system of health-care delivery It is feasible that individuals will be forced to cohabitate with one another. The infection had been existing for a lengthy period of time, but it had not spread. In fact, it is one of the most often used types of transportation. to maintain control over the situation, vital and effective methods must be implemented. Maintaining social isolation is very important for a variety of reasons. It has the power to slow or stop the spread of infectious diseases, for example. Diseases that are related to COVID19, as

well as the virus's expansion. The coronavirus's primary function is to maintain social distance between people. By We make every effort to limit close physical contact between persons to a bare minimum. reduce the chance of contracting the illness and It should be disseminated across the community. Maintaining a careful watch on People's social isolation from one another has become the norm in modern society. This is an important step in the battle against the spread of COVID19 [2] is an abbreviation for COVID19 [2], which is an acronym.

Developing a unique method for detecting cancer is our goal at this time. in a crowded location, passively observing a small group of people in an environment that does not adhere to social expectations. Distancing restrictions have been put in place. When it comes to the distance between two places, distance is relative. [3] There is a distance of metres between them. It is necessary to put the social experiment to the test in order to evaluate it. To bridge the gap between the lineups, we built a robot that could cross the distance. It is necessary to maintain social distance. The robot frame system is equipped with four wheels, which enables it to control the robotic vehicle while in motion. It takes use of the tail tracking concept in order to keep a continuous queue going. Additionally, it is necessary to keep track of activities that violate social distance [4]. The The stern may be adjusted to the left and right by use of an infrared sensing system. Pay close attention for any violations. At the present, the robot is equipped with a camera. Obstacle detection is accomplished by the

Managing a Project: Techniques Change Requests Handled During Expressway Development: Types and Amounts

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Abstract: Construction modification orders and their resulting cost increases may be an issue for transportation authorities. This subject has both practitioners and scholars interested in discussing. With alternate delivery methods, the management of modification orders is even more crucial because of the difficulties of dealing with this issue. Change orders and project delivery techniques are seldom studied in connection to one other. Despite the fact that this is an important problem. It was shown that delivery methods and highway construction modification orders are linked in this study. Only those types of change orders that have been studied in literature and business are included for this study. The research included data from 162 US roadway projects conducted between 2004 and 2015. Supplementing the quantitative data were interviews with representatives of the many agencies involved in the various initiatives studied. The data show that unanticipated conditions have the greatest influence on overall cost rise, followed by agency-directed modification orders. There was evidence that owner agencies taking advantage of an initial contract excess, which is more common in design-build delivery, frequently added value via modification orders directed by the agencies themselves. This study's findings may help agencies and researchers better understand the causes of change orders in various delivery systems and devise effective mitigation techniques.

Introduction

Despite their best efforts, transportation authorities seldom achieve their goal of avoiding post-construction alterations. Scope development for construction projects may be tough due to its complexity and uniqueness. Owners must issue change orders since scope revisions, errors, and unplanned scenarios are inevitable in the vast majority of projects. On average, transportation agencies in the United States face \$4 billion in annual modification requests, according to the most recent US highway construction literature. Scholars have studied change orders from a variety of perspectives because of their importance to both individual projects and the industry

Prefabricated multistory SAPE publicizing seismicity using SAP

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Abstract:

The paper investigates the inelastic seismic response of current multi-tale bolstered Concrete (RC) homes to a quantity of seismic situations applicable to medium seismicity regions of the middle East. 4 RC buildings are taken into consideration, representing ordinary and irregular ductile second-Resisting frame (MRF) structures. these are designed and exact in step with layout provisions hired in this area. A validated analytical device and delicate fiber modeling technique capable to simulate the cyclic reaction of structural participants are followed. The seismic reaction from considerable dynamic crumble analyses is monitored on the member and the structure tiers for a numerous set of input floor motions. Investigating the inelastic reaction of the buildings designed to the 2 layout provisions provides insight into the conduct of systems designed to extraordinary levels of pressure reduction elements. It additionally offers global calibration to the country wide layout codes inside the vicinity and aids in information the variations and similarities with international design provisions. This enables to enhance the design codes, which is the handiest mean to lessen earthquake losses and increase public safety.

keywords: Prefabricated, Multistory shape, exposure, Engineering Seismicity, SAP

1. INTRODUCTION

The lack of reliable design codes that account for the latest technology and deep experience alongside local construction practice and simplified requirements has a profound influence on the large human and economic losses observed from recent earthquakes of 2005 Kashmir (Pakistan) and 2006 Yogyakarta (Indonesia). These events have clearly demonstrated the potential for a major catastrophe from future earthquakes, which may hit even more densely populated and industrialized regions than the affected regions (e.g. Durrani et al., 2005). Inadequate design of buildings significantly increases their vulnerability to earthquake damage. Structures which are properly designed on the basis of well-calibrated and extensively verified seismic codes are less vulnerable as a result of their efficient energy dissipation systems. Modern seismic codes and guidelines (EC8, 2004; ASCE, 7, 2005) have been developed based on extensive research related to specific regions and observations of actual damage that has occurred to structures in past events. The continuous update of

design codes in the Middle East requires extensive research to calibrate the design provisions and assess the seismic performance of contemporary buildings to mitigate potential earthquake-related losses. The European codes for design of concrete structures (EC2, 2004) and design of structures for earthquake resistance (EC8, 2004) are currently the official standards for design of RC buildings in different countries in Europe. EC8 adopts a trade-off between strength and ductility by allowing designing to three progressive ductility levels, with increasing capacity design requirements. These standards represent state-of-the-art design provisions, which may be applied to different regions with diversity in structural systems, seismicity and construction techniques. On the other hand, the 2001 version of the Egyptian code for design and construction of concrete structures (ECCS 203, 2001) and the Egyptian code of loads (ECL, 2003) represent typical design provisions adopted in the Middle East. ECCS, 203 has been updated to enhance the ductility by adopting the concept of capacity design. ECCS, 203 also adopts different levels of reinforcement detailing: (i) structures located in the lowest seismic zone are designed and detailed without additional requirements and (ii) structures located in medium and high seismic zones are designed, dimensioned and detailed either as non-ductile or as ductile, with additional provisions to improve ductility.

2. STRUCTURAL DESIGN AND ANALYTICAL MODELING

Four RC buildings were selected in the current study to represent characteristics of contemporary medium-rise RC buildings designed to modern seismic codes. The buildings are split into two sets based on their configuration, as shown in Table 1. Within each group, a pair of buildings is considered, representing two different designs. The two configurations are for a twelve story regular frame building and an eight story irregular MRF structure. All beam crosssectional dimensions are 0.3 0.6 m. while they are 0.3 0.8 m in the ground floor of the 8-story building. Column crosssections are identical throughout the buildings height.

Highway Construction Consultants to Calculate Total Cost and Maintenance

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Abstract

It is difficult for STAs to manage complex transportation networks while coping with aging, experienced, and turnover STA construction workforces as well as a rise in the use of advisory services to monitor STA construction operations. Keeping up with project needs requires the employment of construction-related human resources, which STAs get from Construction and Engineering Inspection (CEI) consultants. However, no data has been gathered on the effect of CEIs on project costs and schedules. Data from 305 completed highway building projects across 16 STAs is being used to fill up this information gap. CEI consultants were found to have more full-time equivalent construction employees on their projects than projects using solely agency personnel, according to the research. When compared to programs that depended only on agency employees, it had no impact on project costs. CEI consultants The average expense overrun on CEI projects was 20.2 percent, but the average schedule overrun on projects

staffed by agencies was 27.7 percent. On average, the project was completed sooner than expected. A statistically significant difference existed between the beginning and ending times of the experiment.

More and more complicated projects are being built by STAs under more aggressive time constraints. STAs are going through a lot of personnel changes at the same time that this transformation is taking place. STAs are losing veteran staffers to retirement, and they are being replaced by younger, less-experienced workers who are taking on greater responsibility early in their careers. Retiring employees in certain STAs are not even being considered for replacement. STA employees across all divisions are feeling the effects of these adjustments, but those in charge of building roadway infrastructure are especially hard hit (1, 2). Between 2000 and 2010, STA lane kilometers rose by an average of 4.1 percent, whereas the number of full-time equivalent employees declined by 9.7 percent over the same transit period. In

Reinforced concrete structure renovation using advanced retrofitting techniques

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Abstract:

New technologies and materials have been developed and put to use throughout history to overcome the limits of previous ones. Because of the present coal regulations, many seismically vulnerable reinforced concrete buildings cannot resist earthquakes. Additionally, the seismic waves Due to a design flaw, construction flaw, increased loads, and the behaviour of existing structures are all impacted. A number of recent earthquakes have clearly shown the urgent need for structural upgrading and strengthening. A major update is one of the greatest solutions for protecting a building against future earthquakes or other natural disasters, such as hurricanes or floods.

The renovation lessens the structure's vulnerability to damage in the event of an earthquake in the near future. It seeks to strengthen a framework. Be sure you adhere to current seismic design standards. A lot of effort has been put into developing new strategies to improve the seismic performance of buildings in recent years. In relation to constructions. The purpose of this article is to offer an overview of different new and cost-effective methods. Reinforcement of damaged buildings by the use of retrofit methods. In order to improve the performance of any building, a concept known as seismic construction protection has been developed. Future quakes are expected. Future earthquakes in India of varying magnitudes lately, resulting in a significant loss of life and property. Structural repairs may benefit from the use of new materials and procedures. Existing buildings that have been damaged or unaffected by earthquakes need to be reinforced.

A structural engineer's primary goal is to reconstruct the structures as quickly and effectively as feasible. In order to successfully restore a certain building, the correct materials, methods, and processes were crucial. It is clear that innovative structural restoration methods offer several benefits over

traditional methods. The selection of materials for repair operations, such as steel and reinforced fibre polymers, was mentioned in certain instructions for this study. Numerous factors, seen from a variety of angles, influence the material and method selection process. The amount of money needed, the suitability of the materials, and their general applicability Repairs to buildings that have been damaged or destroyed. Standard repair materials, appropriate technology, manufacturing and conservation and preservation are used in accordance with the project's goals. Fire safety, geotechnical safety, and other similar technical factors may be part of a rehabilitation project. Environmental factors such as water penetration and storm damage may have an impact on the structural integrity of a building.

Treatments, rehabilitation, epoxy, cracks, corrosion, prevention, and retrofitting are some of the key words. There are a variety of different types of beam armoring available, including reinforced polymer fibre sleeves, steel sleeves, and concrete sleeves.

Introduction

The preservation of a historic building is described as the use of methods to preserve the structure's present shape, integrity, and materials. In order to maintain the historical, cultural, or architectural significance that the property has, it is necessary to undergo rehabilitation in order to turn it into a usable new property. When a property is restored to its original state, it is called restoration. The term "rebuilding" refers to the act of re-creating a property. For rehabilitation, it is necessary to identify the desired outcomes in advance and to gather existing building data. Rehab-focused design. The present retrofitting approach is chosen based on its current state of affairs. As a result, the existing structure's current and future performance must be determined. Factors such as performance improvement, viability, environmental impact, ease of maintenance after refurbishment, and economics should be taken into

To protect miners, heavy industries must have a mining safety system.

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ABSTRACT

This paper shows the design and building of an experimental mine-protection device using a wireless sensor network as part of a safety system for mining operations. Research on miner health and welfare and safety actions is also included in this overview.. Next, the subsystems of the test system are modelled. It employed electronic circuitry, with a microcontroller as the primary CPU. This often refers to a programme with a graphical user interface (GUI) (GUI). Exams are available for certification in a wide range of fields. The sensors have an accuracy of 89.01 percent, 90.5 percent, 90.5 percent, and 89.53 percent with a resolution of 0.105?? C, 0.12 percent RH, 0.05 m/s, and 0.23 dB SPL. Ventilation switching and a noise-blocking system were included as monitored outputs. [Reference Number] here.

Mine security using wireless sensing networks, an Arduino Mega, a WIFI module, an LCD display, and sensors

1. Introduction

Workers' health and safety are at risk in a mining operation. These dangers emerge as a result of the various methods utilised to get certain minerals. The bigger the danger, the deeper the mine is. These safety concerns are all the more pressing in the coal industry. As a result, worker safety should always be a top priority in any mining operation, whether it is for coal or another resource. In an underground coal mine, ventilation and the possibility of collapse make it more dangerous than an open pit mine. A major risk to employees' health and safety exists regardless of what kind of mining is being done.

Opencast and underground mining safety has improved dramatically over the past few decades as a result of several safety measures, worker education and training, and health and safety regulations. Indian industrialization could not have taken place without coal, which has been India's principal source of energy for decades. To put it simply, coal accounts for more than two thirds of the world's electrical supply. Other byproducts, on the other hand, might pose a threat to the environment and the people working on the manufacturing line. A ZigBee-based real-time detection monitoring system is now being developed in the event that this is not practicable.

2. SURVEY ON LITERATURE:

Wireless sensor networks are used in this research to develop and build an experimental mine-protection device that may be used in mining operations. Research on miner health and welfare and safety

actions is also included in this overview.. Next, the subsystems of the test system are modelled. It employed electronic circuitry, with a microcontroller as the primary CPU. This often refers to a programme with a graphical user interface (GUI) (GUI). Exams are available for certification in a wide range of fields. The sensors have an accuracy of 89.01 percent, 90.5 percent, 90.5 percent, and 89.53 percent with a resolution of 0.105?? C, 0.12 percent RH, 0.05 m/s, and 0.23 dB SPL. Ventilation switching and a noise-blocking system were included as monitored outputs. [Reference Number] here.

5.BLOCK DIAGRAM:

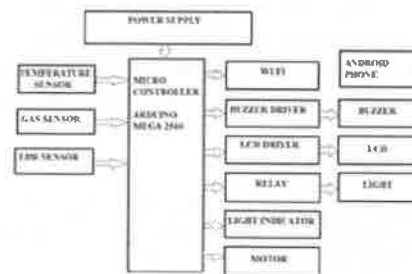


Figure 1: Block Diagram

EXISTING SYSTEM:

In the prior system, the focus was placed on wired networking. Wired technology has a physical constraint in that it is vulnerable to breakage. While employees rewire portions of the company, the flow of work will be disturbed. The use of a device of this kind is fraught with peril and requires extreme caution. It's rigid and doesn't have a well-established network.

SYSTEM RECOMMENDED:

Wireless sensor technologies are used in the proposed device. The sensor sheet, logic layer, and development layer are all included in the proposed system. With several threats, real-time considerations

GIS integration in location-based highway construction planning

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ABSTRACT

This research shows that a GIS may be used to apply LBP on a highway construction project on its own. For highway building projects, LBP has been used in the past but only as a supplement to other methods. Highway construction projects are now being planned and scheduled using a variety of digital technologies. A single platform for all of the data will make it easier to keep track of, comprehend, and execute plans and timetables with more precision and comprehension. It is possible to store both graphical and non-graphic highway project data in GIS. With the use of GIS, tools have been created that can calculate job quantities, plan work activities, and estimate costs depending on where the work is taking place. With the use of GIS, highway project designers have the ability to alleviate many of the issues they now encounter.

Keywords:GIS;highwayconstruction;linearscheduling;location-basedplanning

I.INTRODUCTION

Repetitive construction projects include activities that are done at several places on the project. Repetitive linear projects are ones that cover a large area and are carried out repeatedly. Examples of linear projects include motorways, tunnels, trains, and pipelines. These projects resemble assembly lines in manufacturing, except instead of moving the product along a fixed path, workers and equipment move along the length of the project as it is

machinery for crews to sit idle for long periods of time. the most serious of tasks.

1.1 Thelocation-basedplanningprocess

LBP changes the emphasis of planning from activities to places. The goal is to keep tabs on the movement of workers as they move between the several places where the project is being worked on. Each site has its own set of tasks and their associated amounts.Crews working on a certain project go from site to site until the job is complete.

An area is considered "complete" after all of its duties have been fulfilled. Design flaws, risk in project delivery and total manufacturing costs may be reduced by this method.

LBP, Contrary to popular belief, CPM has not found widespread acceptance despite its aptitude for planning recurring projects (Tokdemir et al. 2006). Contrary to commercially available planning and scheduling software that implements CPM, this method is not widely available, there is no computer implementation of it. When it comes to managing large civil and infrastructure projects, Dynaroad is the best option. However, it is mostly utilized in Scandinavian nations like Finland, Sweden, and Norway, where it is not well known. Here are some of the most important aspects of location-based

Complete highway project (100 km)					Level 1	
Highway segment awarded to contractor A (50 km)			Highway segment awarded to contractor B (50 km)		Level 2	
15 km	15 km	20 km	20 km	15 km	15 km	Level 3
Each 100 m segment of highway with estimated quantities, construction material, and crew requirements					Level 4	

planning.

1.2 Thelocationbreakdownstructure(LBS)

It is a work breakdown structure like those used in activity-based project planning. It is possible to determine a roadway project's LBS by segmenting its linear geometry. In the LBS, each segment is seen as if it were a real location. It's common for LBS to be hierarchical, with various layers of organization. Higher levels have a

lesser number of major places, whereas lower levels have a greater number of smaller locationsAs seen in Figure 1, It is possible to plan and finish sub-projects at the highest level without relying on one another. Only one team at a time should be allowed on the lowest level, and the expenses of each assignment should have been pre-calculated. Depending on the terrain of the site and the

Performance Enhancement of Three Port Excessive Frequency Transformer with Remote Triple Active Bridge Converter

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Abstract— This paper discusses and compares few strategies for efficiency improvement of three-port Triple active Bridge(TAB) Converter. Transformer isolated 3 port segment shifted Triple active Bridge dc-dc converters are very efficient in nature imparting high performance, ZVS operation over huge range, galvanic isolation and bidirectional electricity glide functionality. The natural flip-on ZVS for switching devices in DAB or TAB converters is a very beneficial property for the use of Mosfets, because it reduces the device losses by means of a massive margin. The herbal ZVS is lost for section shifted converters at low power running regions, inflicting reduction in performance. This paper discusses a contrast among phase shift operation at constant frequency vs segment shift operation at varying frequency and varying responsibility cycle operation at constant frequency, which ends up in a more running range of natural flip-on ZVS for this reason enhancing the performance. A evaluation of the three strategies have been offered in this paper with experimental outcomes from a 10kW hardware prototype fabricated from SiC Mosfets.

Keywords— Triple Active Bridge, Phase Shifted Converter, ZVS turn-on, SiC MOSFET, Efficiency Improvement

I. INTRODUCTION

Integrating large scale(few MWs) Renewable Energy Sources(RES) into grid, is a challenging task and it requires efficient and reliable converters. Moreover, Renewable Energy Sources like PV or Wind has intermittent power fluctuations which require some form of Energy Storage Systems(ESS) to support the power fluctuations. The integration of energy storage is an interesting topic of research as the integration can be carried out at modular building block level, where the ESS is integrated with RES at a lower power level. The second method to integrate ESS is to use a separate high power converter in parallel to RES converter for grid integration. In this paper, the

method of integrating RES with ESS at modular level is discussed, since it presents the advantage of reducing the power fluctuations at building block level.

Phase shifted dc-dc converters[1]-[5] have been very interesting topic of research in power electronics. The phase shifted dc-dc converters provide the advantages of bidirectional power flow capability, natural ZVS turn-on, high efficiency, wide range of operating voltages. In this paper, a three port Triple Active Bridge(TAB) converter(figure 1)is used for integrating Renewable Energy Sources(RES) and Energy Storage stems(ESS),[5],[8]-[11]. The natural turn-on of switching devices in DAB or TAB converter provides high for switching SiC Mosfets as they have significant amount of switching losses during turn-on, with two components of switching losses (a)switching loss due to rising device current and falling device voltage, (b) discharge of charge held by device capacitance C_{ds} in the device channel[6][7]. The hard switching turn-off of SiC-Mosfets have very low loss actually taking place during the turn-off as most of the turn-off energy is stored in device capacitance C_{ds} . Hence, achieving a natural ZVS turn-on in SiC-Mosfets reduces the switching loss by huge margin and provides the flexibility to designers for opting higher switching frequency for the high frequency transformer. However, the natural turn-on ZVS for switching Mosfets depends on the direction and magnitude of line current during turn-off, device capacitance and line inductance. From [10],[12], the ZVS is achieved at higherline currents at mid-to-high power operating regions. At low power operating regions, the ZVS is drastically lost due to loss of natural turn-on ZVS with reduction of operating power level, resulting in decrease of line current. In this paper, two methods are used to investigate the efficiency improvement of Triple Active Bridge(TAB) converter by extending the ZVS operating range. TAB converters are

Model for End-to-End Wireless Data Transmission based on the MPVLC Li-Fi Standard

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Abstract: *The Li-Fi system uses visible light to transmit multimedia data, making it a cutting-edge innovation. As an alternative to Wi-Fi, the Li-Fi communication system uses light signals to convey data. Transmitting multimedia data using LED bulbs, which enable quicker transmission, is made possible by Li-Fi, a technique that uses light particles to carry multimedia data. Several aspects must be taken into account while constructing a Li-Fi based transmission system prototype, such as high data rate, distance, and the LOS (Line of Sight). Using these parameters, you may model a Light Fidelity system. The range and cost-effectiveness of a multi-point VLC system and solar component with better data rates at limited network coverage and powerless locations are the primary challenges. For high data rates, the VLC source and destination components must be compatible. Lights are traditionally used in communication as a means of incursion and as a way to maximize delay. VLC is a favoured communication paradigm because of its high throughput and secure transmission from light particles, which is a solution to the aforementioned light-based transmission challenges. To improve capacity, efficiency, and availability at limited network coverage, the suggested Multi-Point Visible Light Communication Li-Fi model delivers high-speed communication.*

Keywords: *Li-Fi, LED, Solar Panel, Wireless, Multimedia Data, PC, Mobile.*

I. INTRODUCTION

The transmission of information using a light source is continually progressing via visible light communications. LED bulbs are used to transmit data using the Li-Fi concept, which uses light as a communication channel to represent a logic signal rate [1]. The data from the transmitter device will be detected by a reception device that is either attached to a solar panel, photodiodes, or a camera [2]. Activation as a value "1" occurs when the destination recognises the light particles, whereas activation as a value "0" occurs when the destination does not recognise the light particles at all from the source [3]. The source may be activated and deactivated using the light state.

Using a linear transmission model, this is the simplest kind of wireless transmission. Colours between the activated and deactivated states allow for high-speed data transmission. Visionary advancements in the field of visible light communication, including immunity to challenges from older systems, have led to a vast uncontrolled bandwidth (THz). Data traffic and harmful activity may be reduced in next-generation networks by using the Visible Light model's short-range communication. In wireless communication, VLC is a component that may be used to overcome large-scale communication issues.

Visible Light Communication (VLC) has gained increasing attention in recent years as a viable target choice for the next generation of wireless communications networks [6]. VLC is a cutting-edge technology that makes use of the most recent advances in Light Emitting Diodes (LEDs) for both lighting and data transmission. Using VLC, a green technology that can effectively reproduce models to address problems shortly is an excellent way to generate light energy. With a data rate ranging from 5x102 Mbps to 10x102 Gbps [7], it's capable of delivering solutions for a wide range of wireless local and personal area networks, indoor localization and navigation, and vehicle networks. Li-Fi is an element of VLC that demonstrates high-speed, bidirectional, fully networked connections for quick transfer.

The 400 THz unlicensed bandwidth of VLC is a significant advantage over RF technologies, which have a restricted and controlled bandwidth of less than 300 GHz [8]. While RF needs a separate base station that uses more power, LED light bulbs may be utilised for data connection and lighting, giving VLC an advantage in terms of inexpensive installation costs and low power consumption. Image sensors and other light-wave-carrying sensors may be used to detect the incoming light from LEDs, making it feasible to detect light-wave data from the transmitter. [9].

II. LITERATURE REVIEW

A. Submission of the paper

The high modulation bandwidth light-emitting diode is used for both communication and lighting.

EBIT-EPS ANALYSIS

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ABSTRACT:

The EBIT-EPS method to capital structure selects the capital structure that maximises EPS throughout the predicted range of Earnings Before Interest and Tax (EBIT) (EBIT). When determining the effect of various financial structures on shareholder returns, this is employed. The objective of this study is on the merits and downsides of EBIT-EPS analysis. Earnings Before Interest and Tax, Earnings Per Share, and Capital Structure are some of the most often used terms in financial analysis.

INTRODUCTION TO EBIT- EPS ANALYSIS:

Earnings before Interest and Taxes (EBIT) refer to profits before interest and taxes. Net Operating Income is how salespeople refer to this pay explanation, while EBIT is how finance professionals refer to it. However, after deducting labor costs from deals on a remuneration order, it is the amount of money that an affiliate has (hence the term net working pay). Another thing to keep in mind is that this is the amount of money the affiliate was paid before the interest and commitments were removed (accordingly, EBIT).

Earnings after Taxes is abbreviated as EAT. By agents, this is referred to as Net Income or Net Profit after Taxes, but by finance professionals, it is referred to as EAT.

Earnings per Share (EPS) are the abbreviation for earnings per share. This is the most money that regular monetary patrons are willing to spend (per piece of stock had). This pay could be delivered as rewards, held by the affiliate and reinvested, or a combination of the two. As a strategy for measuring the impact of effect, the EBIT-EPS analysis fundamentally integrates the association of optional financing procedures under multiple EBIT assumptions. With varied degrees of success, a corporation

can raise funding for its project proposal from a variety of sources.

For example, it can (I) only use respect capital, (ii) only use responsibility capital, and (iii) only use inclination capital (iv) Use a combination of (I) (ii) and (iii) to varied degrees (V) a combination of (I) (ii) and (iii) to varying degrees (vi) a combination of (I) (iii) to varying degrees and from childhood on The ideal benefit per share would be established by a mix of multiple sources, given the degree of pay before premium and commitments (EBIT) (EPS)

EBIT (earnings before interest and taxes) is a measure of a company's profitability.

On a pay statement, it is the amount of pay that an affiliation has after deducting working costs from deals; however, advantage before interest and commitments agents prefer to use the term net working pay for this remuneration clarifications thing, while finance individuals generally propose EBIT; in any case, on a pay statement, it is the amount of pay that an affiliation has after deducting working costs from deals; however, advantage before interest and commitments agents prefer to use the term net working pay for this retune (accordingly the term net working pay). Another thing to keep in mind is that this is the affiliation's compensation before interest and commitments are removed (hence EBIT).

Earnings After Tax (EAT):

This is referred to as Net remuneration or Net benefit after charges by assistants, but it is always referred to as EAT by finance professionals.

Earnings per Share (EPS):

The amount of money that traditional monetary clients are willing to spend is the benefit per share (per a piece of stock stated).

SECURITY ANALYSIS AND IMPROVEMENTS OF ACCESS CONTROL IN THE INTERNET OF THINGS

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ABSTRACT:

The Internet of Things is an omnipresent concept with physical objects connecting with the Internet and programmed with specific identifications to guarantee that they can recognise and continuously gather and share data over a network. The Internet of Things As a consequence, the security of data sharing and interconnected sensor nodes grows very rapidly, the safety of network, data and sensor devices is a major concern of the IoT network. This paper analyses the authentication system and the Internet of Things access management. protocol is costly for exchanging packets and according to our study the security assessment is not sufficient enough for such a protocol. We therefore suggest changes to the protocol to fill the holes observed. The protocol enhancements allow for many user services, including anonymity, mutual authentication and a secure session key configuration. Finally, the efficiency and safety assessment reveals that the improved protocol provides several advantages over common attacks, improving stability at low connection costs. The Philosophy of the Internet/Interconnection to the Internet helped objects or devices to achieve certain common goals for each other and for people. IoT should be integrated seamlessly in our society in the near future and citizens will fully depend on this technology for comfort and simplicity. In a single paper, we tried to make improvements and access control techniques accessible.

KEYWORDS: Internet things; wireless sensor network; access control.

1. INTRODUCTION

There are now a number of imagined and implemented applications using smart devices and sensing nodes, forming a global and Internet-based

Internet of Things (IOT) platform. Under the ITU concept, the basic IOT design can be as perceived almost every physical thing in the world could precisely — it's all about Not transformed to computers but small computers have a small footprint and intelligent nature. IOT involves numerous technologies, including architecture, sensors, etc. Coding, transmitting, processing data, network, discovery, etc. Kevin Ashton was the first to coin the Auto-ID Center's co-founder and managing director at MIT. The term Internet of Things in the supply chain management context in 1999. However, in the concept was expanded over the past decade with new IOT network applications like Electronic health and transport services. The development of IOT comes from the convergence of Wireless technology, microelectromechanical (MEMS) and digital technology development Electronics in which miniature devices are able to understand and calculate and wirelessly chat. In the age of IOT, human contact and friendship Machines are increasingly regarded as machines that are smarter and more human Tasks and people have to trust the computer and feel secure in this scenario. That's one thing might be a patient with a medical implant for real-time tracking in a medical application or an accelerometer for moving in a field setting connected to the cow. Figure 1 shows the An incipient application that focuses on the hype cycle for emerging technologies, and is the fastest running, annual Internet of Things (IOT) cycle on the interconnection of things or devices and to people or consumers to accomplish certain general objectives.

Figure 1. Gartner 2013 New technology hype cycle.

A COMMODITY TRADING IN INDIABULLS

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ABSTRACT:

The financial services industry in India is developing at a fast pace, making it one of the world's most dynamic economies. Economic liberalisation began in 1991, and since then, the industry has seen a dramatic shift. Over the last decade, the Indian capital markets have witnessed a major shift. India is currently one of the world's more established marketplaces. India has the third-largest investor base in the world, behind the United States and Japan, with over 20 million stockholders. Indiabulls is the country's top financial services and real estate company, with over 640 branches throughout the country. Financial services and products including securities, derivatives trading, depositary services, research & advisory services, consumer secured & unsecured credit, loan against shares, and mortgage & housing financing are offered by Indiabulls to more than 4,50,000 consumers. For five weeks, we worked at Indiabulls Securities Ltd, Jayanagar branch, Bangalore. We were given the opportunity to participate in the day-to-day operations of the company by making sales calls to prospective customers and persuading them to buy our goods. When necessary, we had to meet them face-to-face. Online trading was also a part of our business.

INTRODUCTION

India is the development of the United States. Now there are many people in the afternoon and it is exciting to invest money in inventories to earn excessive profits and receive taxes honestly. There is a greater probability of a negotiated percentage if the value of shares in India is paid out through more incidents that prevent beliefs. Alternative markets are assessed by providing alternative major crimes to order and ship, on the one hand.

Long-term products are commodities "Positive goods used in our daily lives may be improved as financing techniques. Copper is an exceptional, low-value mineral conductor. For our breakfast and bread, wheat is used. Gold that redesigns the reloads, reloads, jewels and power it's delicate. It's delicate. Our engines are a variety of products offered on world-renowned stock exchanges.

India Bulls Ltd • India Bulls Ltd. India Bulls Ltd. Are you a US financial consultancy and brokerage leader?— Alternative assets and investment fund financing, portfolio offers and other assets of private equity. The company owner thus decided to study the change in goods.

History of industrial goods.

The greatest wealth has traditionally been gained through the trade of products. The stock markets began thousands of years before they existed. The Bombay Cotton Trade Association transformed India's first future market in 1875 into a conversion

- India had a huge future market for various commodities, like peanut oil, wheat, rice, crude jute and precious metals, gold and silver, before World War II erupted and so on. In India in the 1960s, commodity futures were regarded to be a fairly efficient trading market.

- In most commodities in the mid 1960s, wars, natural disasters and the resulting shortage of merchandise, purchases and future sales were banned.

- Three years have passed before the reappearance on the Indian market of commodity futures. This long wintering of the future of commodities in India has become a "time off."

The ATM roll-out again targeted at exchanging commodity expansion in future. • In 1993, he joined the committee to investigate the sale and purchase of future commodities contracts for various products. This allowed the purchase and sale of 16 commodities and their future contracts, and international oil and pepper transactions were completed in 2002. India has 20 exchanges of commodities, 42 items agreed

A Complete Technical Review on Retrofitting Reinforced Concrete Techniques

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Abstract:

New technologies and materials have been developed and put to use throughout history to overcome the limits of previous ones. According to existing code regulations, many reinforced concrete buildings prone to earthquakes are unable to endure the tremors. In addition, earthquake due to a design flaw, construction flaw, new loads, and the behaviour of existing structures are altered. The recent earthquakes have clearly shown the urgent need for structural modification and strengthening. It is possible to improve an existing structure in order to make it more resistant to earthquakes and other natural disasters, which are more probable in the future.

Structural damage from earthquakes will be less likely to occur as a result of the renovation. It seeks to strengthen a framework. Seismic design rules should be followed to the letter. Structures' seismic performance has improved dramatically in recent years as a result of extensive study into different improvement and restoration strategies. In terms of construction. Many creative and cost-effective methods are discussed in this article. Reinforcement of damaged buildings by retrofitting. In order to improve the performance of any building, a concept known as seismic construction protection has been developed. earthquakes in the future. earthquakes in the future. Several earthquakes of varying magnitudes have lately struck India, resulting in considerable damage to both human life and property. Structural repairs may benefit from new materials and procedures that have been developed lately. Existing structures that have been damaged or are still standing might benefit from seismic strengthening

As a structural engineer, your first priority is ensuring that structures are restored in a timely and effective manner. In order to successfully restore a certain building, the correct materials, methods, and processes were crucial. There are various benefits to using innovative structural restoration methods over traditional methods. The selection of materials for repair operations, such as steel and reinforced fibre polymers, was mentioned in certain instructions for this study. From a variety of viewpoints, the materials and methods that are best suited for a given project are influenced by a wide range of factors. The amount of money needed, the suitability of the materials, and their general applicability. Repairs of damaged buildings. Repair materials that are both commonplace and cutting-edge, as well as the most appropriate technology and production processes. Fire safety, geotechnical safety, and other technical factors may all play a role in a building rehabilitation. Weathering and water infiltration, dangers and solutions, and structural performance in earthquakes and wind loads are all covered.

KEYWORDS: retrofitting, treatments, rehabilitation, cracks, corrosion, preventive measures, epoxy, rehabilitation. Grouts, reinforced polymer fiber jackets, steel jackets, beam jackets.

The Relationship Between Structural Divisions And The Health Of RC Homes

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Abstracts:

A evolved macroscopic model is applied to the evaluation of an example structure to demonstrate the use and blessings of the version. The lateral potential of a three storeys reinforced concrete (RC) constructing earlier than and after rehabilitation become assessed the use of pushover analysis and nonlinear dynamic analysis. The nonlinear dynamic time history analysis became performed the use of El Centro document at some point of the Imperial Valley earthquake scaled to one of a kind peak ground accelerations (PGA). A rehabilitation approach the use of structural walls become designed and tested the usage of pushover analysis and nonlinear dynamic evaluation with the El Centro file as the ground motion time history input.

INTRODUCTION

The lateral resistance of multistorey reinforced concrete frame structures, designed before the availability of current seismic design codes, may not be adequate. In addition, buildings designed to low levels of seismic loads according to older codes that have since been upgraded, may also be deficient. The use of nonductile detailing in these codes results in low seismic capacity. One of the major challenges that faces structural engineers is how to determine the seismic capacity of these buildings and decide if they need rehabilitation or not and which rehabilitation technique to be used. One of the most common rehabilitation techniques is to provide additional reinforced concrete structural walls. The resisting mechanism of reinforced concrete shear panel is diagonal compression of the infilled concrete. Therefore the initial stiffness and ultimate resistance are high. However, deformability is small because of compression fracture of concrete. In the past decade, existing RC buildings received attention by researchers. A number of experimental and analytical studies were conducted to gain better understanding of the behaviour of these buildings. However, on the analytical side, models to represent existing structures are still in the process of improvement.

To determine the seismic capacity of existing buildings and analyse existing buildings after rehabilitation using structural walls, accurate, simple and practical models should be developed. The availability of such models allows the assessment of the seismic performance of existing structures which is necessary information for the development of rehabilitation codes. A representative model should contain the main characteristics that describe completely the hysteretic behaviour of reinforced concrete structural components. These characteristics include stiffness degradation, strength softening and pinching behaviour. In

addition, the used model should be as simple as possible so that the analysis can be performed with reasonable computational effort, especially in the case of multistorey structural systems. Available models for representing RC structures are concerned only with the maximum load carrying capacity. Available models are mostly unable to predict the post peak strength response and most importantly the failure mechanism. Some researchers (Abouelfath, 1999; park et al., 1987) predicted the post peak response by using parameters that was calibrated using the available experimental results. Other researchers (Miramontes et al., 1996; Chung et al., 1989) used damage indices to define the degrading slope. These methods are doubtful as it might be correct for certain cases but can not be generalized. The model adopted for the analysis of reinforced concrete elements should be capable of simulating the behaviour due to different failure modes.

BUILDING DESCRIPTION

A three-storey reinforced concrete office building was designed to represent existing nonductile buildings. The building consists of three bays by five bays. Each bay is 6 m wide. The floor height is 3.6 m. The total dead weight of the building is 7000 kN. The building was designed for gravity loads only according to the 1963 ACI code (ACI 318-63). The concrete strength is 21 MPa and the steel yield strength is 300 MPa. All beams are 250x600 mm, exterior columns are 300x300 mm and interior columns are 400x400 mm. Typical floor plan of the existing office building is shown in figure 1.

Nonductile reinforcement details in the building, as shown in figure 2, include: beam bottom longitudinal reinforcement embedded 150 mm into the beam-column joint, widely spaced transverse reinforcement in beams and columns (M10 at 300 mm), column lap splices (20 bar diameter) located just above the floor level and no transverse reinforcement in the joints.

PROPOSED REHABILITATION SYSTEM

The seismic design load for the building was calculated assuming that the building is located in the city of Victoria, British Columbia. The force modification factor, R , was taken equal to two assuming that the building resisting system is RC walls with nominal ductility. Walls were not assumed ductile to limit the damage in the original structure as it has very limited ductility. The system of walls used for the rehabilitation process is shown in figure 1. Including the effect of torsion due to incidental eccentricity, the total base shear to be carried by an exterior wall is calculated to be equal to 0.14 of the total weight of the building.

An analysis of the pick-and-carry mobile crane boom stress

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ABSTRACT

Mobile crane telescopic booms that are light and sturdy are a rarity. Crane booms may be retracted and extended in a variety of ways. Although retraction of the crane's boom improves its performance, extending the boom reduces its operational capacity. Increasing the distance makes communication more difficult. The crane's lifting capacity decreases as it moves away from the load. It used to be that crane booms couldn't go to new heights, but that's no longer the case. When the crane's boom is fully extended and angled to the highest degree achievable This research relies on the utilisation of crane boom and component stress analysis. SAE J1078 [2] specifies that calculations must be done by hand. The crane boom may be more efficient if its weight and strength are maximised. The crane boom components are compared in this research.

Keywords: Boom, Strength

Introduction

Because of their mobility, these cranes are widely utilised in the building industry. It is possible for mobile cranes to lift and transport vast amounts of weight and mass. These cranes may also be moved on public highways, which is an added convenience. Booms are an essential component of mobile cranes. Facts are facts, and there's no arguing with them. Expandable booms that include at least two components. Going backwards so you may rise even higher in the sky. Crane lifts make use of portable components. The most typical causes of capacity problems are excessive strength or weight. After a while, things start to shift. The following are the most common causes of crane accidents: As a result, the structural integrity of mobile cranes is at risk. [2] They have a variety of downsides, including the fact that they are heavy-duty. For the consumer, lengthy booms that may be employed in a variety of situations are necessary. Booms that are too little or light have too much weight on them. The outermost rim of Boom's first portion. It becomes more difficult to find a solution to the problem. With four pates in the boom, doing anything becomes more difficult. sections. The boom portions of cranes were made of wood in the past, but now they are made of metal. In order for the meal to be complete, the most vital ingredient must be included in the next strongest and the largest. Extensions for the booster hose. The product's layout is a significant problem. strength and

the capacity to alleviate fatigue symptoms. The maximum load a mobile crane's boom can support. The collecting of data is required as a second phase.

Objectives and Purpose

Manual calculation's main objective is to determine a value. evaluation of a person's talents. Cranes with extendable extensions, such as this one, Analytical Reasoning Training. One of the key characteristics of a boom is its ability to provide a solution to the immediate problem. It's possible that the answer of an interaction equation will be less than or equal to one in certain cases. Taken into account are the many facets of this topic. Torsional tension and bending are causing the panels to buckle and twist in both directions. Compressive stresses must be calculated [2]. That's what this investigation has discovered. Manual calculations are performed using SAE. The most extensively used standards in the business are AISC and J1078.

Methods and approaches

A boom is a must for any lifting operation to be effective. An very unusual occurrence. The crane's boom must be inspected for safety. Versatile in its use. In this article, an example is provided. The crane boom is subjected to a stress test. Breaking breaking a section into smaller sections. Jib is used for Hydra crane's 44-foot boom, which is 44 feet long. You might also look at the boom's lifting capacity, which is 12 tonnes. capacity. As part of the boom's design, the weights, etc. The object's dimensions and cross-sectional shape are shown in 3D computer graphics elements like hydraulic cylinders and boom sections. The Mathematical calculations are required in order to carry out a boom-stress study. The following are examples of crane boom operating conditions: The boom has a 0° curve when completely extended. This is the point at which the boom reaches its maximum length. A 55-degree incline is feasible. At a zero-degree angle, the boom has been fully retracted. The boom extends to a length of four feet when completely retracted. A 55 percent angle of view is achievable.

There are more than four possible scenarios in which forces and moments may be measured. This study examines some of the effects of stress. That

Recent MIMO Wireless System In antenna design schemes

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Abstract:

Multi-input Multi-output (MIMO) and diversity technology have recently attracted considerable attention in both industry and academia due to high data rates and high spectrum efficiency. The multiple/MIMO techniques can increase the number of antennas on the transmitter and/or receptor side of the wireless link without needing additional power or spectrum in a rich scattering environment. However, the correlation coefficients between MIMO antenna elements are usually very high, due to the small space of mobile devices and the overall efficiency of MIMO elements would be severely degraded by the interconnected connections. Furthermore, the human body causes high electromagnetic waves losses. The presence of users in actual applications could significantly reduce the total efficiency of the antenna, and the correlations of MIMO antenna systems are also greatly affected. This chapter examines the performance of some basic MIMO antennas as well as the recent technologies to improve the performance of MIMO antennas on mobile devices and terminals. In mobile terminal applications, the interactions between MIMO antennas and human body are also targeted.

Keywords: Multiplexing Antenna array Mobile handset antenna Long Term Evolution (LTE) WiFi Over-The-Air (OTA) performance Human body effect Specific Absorption Rate (SAR)

1. Introduction

For many years since 1960, antenna diversity techniques have been introduced into communication systems (Pierce and Stein 1960; Schwartz et al. 1965; Jakes 1974). In the late 1970s, the diversity technique was used with multi-antenna systems to overcome degradation by decaying environments (Taga 1990; Pedersen and Andersen 1999; Ogawa et al. 2001). In order to achieve good performance of diversity, multi-antenna systems typically require low reciprocal loss and a low pattern correlation between radiating elements. Independent fading signals (branches of diversity) are achieved not only via spaced antennas, spatial diversity and other techniques such as frequency diversity, angle of arrival diversity, polarization diversity, time diversity and multipath diversity.

A system's overall diversity performance usually results from different diversity mechanisms. Since

1985, mobile communications systems have evolved quickly from analogue system (1G) to digital (2G: second-generation system) and later to third-generation (3G), supporting multimedia transmission. MIMO technology has become an important feature in the LTE wireless communication systems in order to increase data transmission further (4G: fourth generation system). In the last decade, MIMO has been a great success in Wireless communication and can linearly increase the channel capacity by increasing the number of antennas without the need for additional frequency spectrum or power. In addition, the most popular wireless communication systems typically operate in a wide range of dispersion environments, including LTE cell phones of 4th generation and WiFi IEEE 802.11n, where MIMO uses the above-mentioned high-performance gains. A multi-antenna system can operate in the latest modern Smartphone under a rich dispersion schema, depending on the signal-to-noise (SNR) level.

The phone supports multi-band and multimode operations as well. Due to a limited space of the mobile terminal, the coefficient of correlation between multiple antenna elements could be very high, thereby seriously degrading the corresponding bandwidth and overall efficiency. In addition, the human body causes high electromagnetic energy losses. In practical applications, the presence of users generally reduces total antenna efficiency significantly and changes the correlation within a MIMO antenna system. Different standards and requirements must be met by mobile terminals. For example, many telecommunications operators required the RF OTA performance of mobile telephones with impact. Furthermore, SAR of a mobile terminal shows how much RF radiation a human body can emit via radio. Mobile terminals' SAR values are strictly restricted by government regulations. It is true that MIMO technology can increase the system's channel capacity, but the complexity of the SAR issue is thus increased.

Frame Structure Parameter Estimation Using Static Displacement Measurements

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Abstract

An analytical method is investigated to identify the damage of a frame structure from static displacement measurements. This method is to adjust the parameters of the frame structure to match the analytical and measured displacements. Based on a set of applied static forces and static displacement measurements of the frame structure, the damage condition of the frame structure can be obtained by optimizing the objective function. In addition, the effect of the number of displacement sensors on the parameter identification was studied using parameter identification of a two-story steel frame structure. This method can accurately identify the damage of the frame structure using limited displacement measurements. Index Terms—frame structure, parameter identification, displacement measurement

INTRODUCTION

Detecting the health of and identifying the damage to a structure in a timely manner is critical for structural safety. With the development in sensor manufacturing technology, many new techniques for structural-damage identification using different types of structural response have been developed. These identified damages to the structure using these techniques can be divided into two methods based on the dynamic [1] and static [2] responses. According to the static-response data, Sanayei et al. [3] proposed a method for detecting the damage condition of truss and frame structural elements. Hajela et al. studied the structural damage detection method based on static responses and modal Analysis [4]. Chou et al. presented a structural damage technique to identify the changes in the characteristic properties of structural members using static measurements of displacements [5]. BakhtiariNejad et al. presented a structural damage detection algorithm based on static test data, that relate the changes in the static response to the location and severity of the damage [6]. Kesavan et al. analyzed the damage criticality assessment method in complex geometric structures using static strain response-based signal processing techniques [7]. Chen et al. proposed a new structural damage identification technique using limited test static displacement based on grey system theory, that is used to locate damage in the structure and identify the damage magnitude [8]. Kaushik et al. introduced the details of the numerical studies carried out on the application of the damage locating vector method for damage localization using deflection data from the static analysis [9]. Li et al. presented a static-based method for damage identification in the simply supported beam structure based on the incomplete measured static displacement parameters [10]. Colombo et al. proposed a methodology to perform structural health monitoring leveraging the inverse finite element method and numerically demonstrated using a structure subjected to fatigue crack damages [11]. Tian et al. proposed a damage identification method based on static strain responses using Fiber Bragg Grating in a wind turbine blade and verified the accuracy and effectiveness of the proposed method [12]. Xiao et al. investigated the optimal placement of static strain sensors for structural damage identification and analyzed the identification effects of different optimization methods [13, 14]. Lozano-Galant et al. presented an observability technique to identify structural parameters in cable-stayed bridges by using static monitoring information [15]. Adbo [16] analyzed the relationship between damage characteristics and changes in displacement curvatures and applied it to the damage identification of beams. Using static test data, Yang et al. [17] proposed a parameter identification method to identify the location and extent of structural damage. Sohail et al. presented an approach to identify the change in structural parameters of flexural rigidity of a frame model using few response measurements [18]. Liao et al. [19] presented a method for finite element model updating based on the quasi-static generalized influence line of the structure. These studies have obtained the damage condition of structural elements using static test data and enriched the damage identification studies based on static measurements. To obtain the overall damage condition of a structure, Seyed et al. proposed a two-stage approach for damage identification of two-dimensional frame structures based on the dynamic response [20]. Yang et al. investigated structural-damage identification methods using static and dynamic data [21]. Jamalkia et al. proposed a fuzzy-based damage identification method based on the dynamic response of the floating wind turbine structure [22]. Lee et al. presented a damage detection method based on the second derivative of flexibility estimated from incomplete mode shape data [23]. Lofrano et al. studied

Investigation of Cold-Formed Steel Channel & Supa Cee Section Shear Capabilities

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Abstract

Cold-formed steel channel sections have been widely applied in structural buildings. This type of section is then added stiffeners in the web to form the new section called SupaCee. The capacities of these sections have been investigated due to shear actions paralleling their webs. Shear forces are assumed to be resisted by the web, but the presence of the flanges and lips also have specific impacts on the shear capacities of these sections. This paper, therefore, investigates the effects of the flange widths and lip lengths on the shear capacities of the channel and SupaCee sections. Also, the shear capacities of SupaCee sections are studied to illustrate their strength improvements compared to those of channel sections. Shear capacities of the investigated sections are determined according to AS/NZS 4600:2018. The study demonstrated the innovation of SupaCee sections in shear strength improvements in comparison with those of channel sections.

Keywords: Shear capacities; Cold-formed steel; Channel sections; SupaCee sections.

Introduction Cold-formed steel channel sections have become a common product in structural buildings with numerous applications [1]. They can be subjected to compression, bending or shear. In terms of compression or bending, buckling modes such as local, distortional, flexural, or flexural-torsional buckling have been investigated in many research studies and are deeply understood [1]. In the case of shear, shear buckling of channel section was investigated with the consideration of the web alone, but the flanges and the lips were ignored in the behavior. There was not any consistent theory for shear buckling of full thin-wall sections. The channel sections have then added web stiffeners to increase the stabilities. These such sections termed as SupaCee sections have a variety of advantages compared to the traditional channel ones, as discussed in Pham and Vu [2]. The recent development of the DSM method for thin-wall sections in shear required the elastic buckling loads of the whole section in pure shear. Pham and Hancock [3-6] carried out a series of the channel and SupaCee section beams under shear to provide deep understandings of their strengths and behaviors. Also, Hancock and Pham [7,8] used the complex Semi-Analytical Finite Strip Method proposed by Plank

and Wittrick [9] to develop the signature curve for channel sections under shear actions with the assumption of unrestraint at end conditions. Pham and Hancock [10] used a spline finite strip analysis to investigate the shear buckling of whole channel sections restrained at their ends. The spline finite strip analysis was developed by Lau and Hancock [11]. To reduce computer resources in analysis, Hancock and Pham [12] developed a new version of the semi-analytical finite strip analysis called reSAFSM that allows considering restrained ends in the analysis of thin-walled sections under shear actions. Channel sections with intermediate web stiffeners have been also investigated by Pham [13-14] using Semi-Analytical Finite Strip Method. This method was subsequently incorporated into the Thin-Wall-2 [15] in the analysis of the buckling loads under shear [16]. Thin-Wall-2 has been allowed to use for elastic buckling analysis of thin-wall sections according to the AS/NZS 4600-2018 [17]. The paper, therefore, is aimed to investigate the shear capacities of the channel and SupaCee sections with the variations of dimensions of the flanges and lips. The effects of the flanges and lips on the elastic shear buckling loads of thin-walled channel sections can be accounted for as presented in Appendix D3, but the intermediate web stiffeners are not included. Thin-Wall-2 software program [15], therefore, can be used for the elastic shear buckling analyses in this investigation. The shear capacities of commercial SupaCee sections are also investigated to illustrate their innovation in strength improvements based on comparing the shear capacities between SupaCee and channel sections. The investigated sections are commercial sections provided by BlueScope Lysaght [18]. The THIN-WALL-2 software program [15] is used for elastic buckling analysis under shear actions, and the shear capacities are determined according to the AS/NZS 4600: 2018 [17].

Determination of the Shear Capacities of ColdFormed Steel Section

The nominal shear capacity of beams without transverse web stiffeners can be calculated

Matlab is being used in the development of an alphabetic character recognition system.

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Abstract:

When it comes to pattern recognition and image processing, character recognition is an important field. It is used to match symbols to pictures of characters and is a significant area in pattern recognition and image processing. The core topic is introduced in this section. The process of converting uneditable images (such as those scanned from a page or typed) into editable images into a text format that may be edited (html, doc, txt, or any other format you like) formats. There are just a limited number of Bangla characters to choose from. Even if there is a document recognition system in place, it will not be able to recognise the whole document. A collection of letters. The following research is driven by this and demonstrates a number of interesting findings. MATLAB is used to develop a system for recognising characters in printed text. Writings in the Bangla language are available. Also possible is a comparison of the characters in a single image with those in another picture. Relocating the file to a different place. In this particular case, binarization and other processing steps were carried out. Noise reduction and segmentation with varying degrees of complexity, as well as other features, are discussed. The procedures of extraction and identification are both critical in the process' success. These are just a few of the words that appear in this index: OCR, Character Recognition, MATLAB, CrossCorrelation, and Image Processing, to name just a few.

Introduction:

Character recognition was first studied in the 1990s as a subject in pattern identification, artificial neural networks, and machine learning, and it has since gained popularity. In terms of hardware and software needs, CR may be divided into two categories: on-line CR and off-line CR, with each category having its own set of requirements. Identification methods are classified as follows: Among the developments in the area of online character recognition is the computer recognises the symbols in the applications precisely as they appear on the screen. The digitising device is the most often seen piece of data collecting equipment. There are several types of tablets available, including those that are electromagnetic, electrostatic, and pressure sensitive. A light pen, in addition to sensitive sensors, may be used to detect movement. Taking up the role of the protagonist. An image is drawn and the successive placements of the pen are memorised while the picture is being created (the drawing technique). The normal sample frequencies are between 100Hz and 200Hz, and, second, the sampling frequency ranges from 100Hz to 200Hz. It is these phrases that are used by the recognition algorithm. Character who is not online at the time. As soon as the inscription or printing has been completed, the procedure of recognition is complete. performed. Examples of this are often distinguished in the following ways: magnetic. In addition, OCR (optical character recognition) is employed. In the shape of a magnetic character, for example. Optic character recognition (OCR) is used to read the fonts that are stored on a magnetic disc (OCR). After a magnetic field has been established, they are designed to be adjusted in a certain way. As a result of the acquisition device, MCR is most often seen in the banking business. As a result, applications such as those for reading bank checks are being developed in the future.

The process of overwriting or overprinting these letters has no influence on the content of the document. The accuracy with which the identification is accomplished. When it comes to visual character, the possibilities are endless. The topic of this research is the domain of recognition, which is concerned with the recognition of others. Applied along with the identification of characteristics gathered via visual approaches, typically, this is

HOVER BOARD

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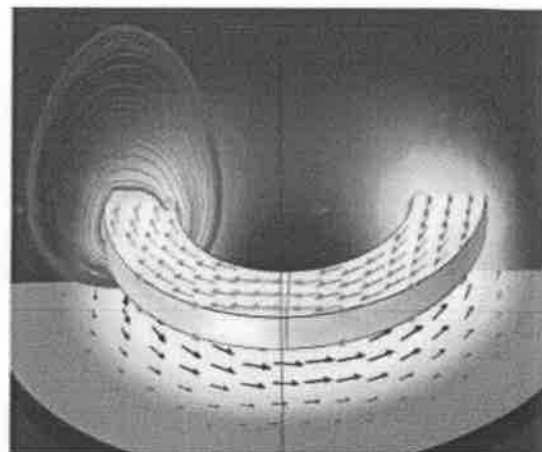
Abstract

In this project, electromagnetically levitating hoverboard is built. The levitation is made possible by feeding alternating current through a coil, which is placed over aluminium sheet. The coil creates alternating magnetic field when alternating current is fed to it and this magnetic field induces alternating eddy current to the aluminium sheet. Eddy currents create opposing alternating magnetic field and the interaction of magnetic fields produce lifting force. During project, a feasibility study was conducted by researching requirements to produce enough lift for given mass so levitation is achieved. Project also included designing and constructing planar coils, inverter and body for the hoverboard. Design process consisted of drafting schematics and plans as well as selecting components and materials for construction. Hoverboard testing was conducted to validate simulations and designs. Tests consisted of system turn-on tests, full system tests, failure analysis and problem solving. In the short business aspect exercise hoverboard was given product name "HoveBev" from the business idea that hoverboard could be used to levitate beverages. The hoverboard was never fully realized as per to project plan. Project itself was successful as a university project in teaching students practical project work, teamwork and problem solving skills. It also gave practical experience in fields of electromagnetism, power electronics, electronics, power systems and mechanical design.

Introduction

Final goal of this project was to build a battery-operated Hoverboard, which can levitate up to 8 kg of mass in addition of itself. Operating principle of the device is based on electromagnetism and inducing eddy currents. A coil is fed with alternating current (AC) to produce alternating magnetic field. This alternating magnetic field induces eddy currents in the conducting surface below the coil. Eddy currents in turn produce magnetic field of their own and these magnetic fields repel each other, creating a force called levitation. Figure 1 illustrates a simulated coil fed by AC which generates magnetic field and eddy

currents.



Other devices, such as Hendo Hoverboard, are inspiration to this project. However, Hendo Hoverboard way of producing alternating magnetic field is vastly different. Hendo Hoverboard utilizes permanent magnets attached to rotor of electric motor to produce alternating magnetic field [1]. Since this project is limited in both time and budget, a mechanically simpler machine is chosen for implementation. Hoverboard consists of planar coils, batteries, inverter and body. There are total of 10 individual planar coils. To improve safety and to enable 50 V operation required by batteries, the coils are connected so that there are five sets of coils connected in parallel and each set has two coils connected in series. As energy storage, the hoverboard uses two 5500 mAh Lithium Polymer (LiPo). Because the batteries provide only direct current (DC), inverter is required to produce alternating current (AC) which is required for producing alternating magnetic fields. Finally, the body is the frame to which all modules and systems are fastened. Because of masses involved the body

For turning AA 6063 T6 aluminum alloy, many Reactions Taguchi L9 orthogonal arrays and Grey relational analysis were employed.

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ABSTRACT

With numerous responses established on Taguchi L9, orthogonal array coupled with current work proposes a novel methodology for optimizing machining parameters on turning of AA 6063 T6 aluminum alloy. Experimental assessments are accomplished on AA 6063 T6 aluminum alloy. Turning trails are carried out under dry cutting conditions using an uncoated carbide insert. Cutting parameters such as cutting speed, feed rate, and depth of cut are optimized in this effort while numerous responses such as surface roughness(Ra) and material removal rate are taken into consideration (MRR). From the grey analysis, a grey relational grade(GRG) is calculated. The optimal amounts of parameters have been identified based on the values of grey relational grade, and then ANOVA is used to determine the significant influence of parameters. To authenticate the test result, a confirmation test is executed. The result of the experiments shows that by using this method, the turning process responses can be significantly improved.

Keywords : Material Removal Rate, ANOVA, Taguchi Method, Grey Relation Analysis, S/N ratio

INTRODUCTION

It has always become difficult for Manufacturing Industries to produce products conveniently with high quality and higher production rates to remain in the competitive world. The desired shape, size of the product can be achieved by the process called turning, which is performed by rotating parts that rotate the workpiece and the cutting tools which cut the unwanted material to get our desired shape which is done by using Lathe machines. Turning is important and widely used in engineering industries. Surface roughness, often known as roughness, is a characteristic of surface texture. The deviations in the direction of a real surface's normal vector from its ideal form are used to quantify it. The surface is rough if these variances are considered, the surface is smooth if they are minimal roughness is often thought of as the high frequency, short wavelength component of a measured surface in the surface metrology. At the same time, industries need a higher material removal rate(MRR) so that they can raise the production rate while maintaining high quality. Increases in process parameters such as cutting speed, feed, and depth of cut might result in all high MRR. High cutting speeds require more power, which may be greater than the machine tool's

capacity. At the same time, as the process parameters are increased,

the cutting temperature rises. Therefore selecting the appropriate process parameters plays a vital role in the effectiveness, efficiency, and overall economy of manufacturing by machining industries to achieve these objectives (higher MRR and product quality). In turning, parameters like cutting speed, feed rate, and depth of cut affect surface finish, roundness and MRR. Choudhury and Bartarya [5] focused on the design of experiments and the neural network for the prediction of tool wear. The input parameters were cutting speed, feed, and depth of cut; flank wear, surface finish, and cutting zone temperature were selected as outputs. Taguchi method is applied for finding out the optimal value of surface roughness under the optimum cutting condition in turning SCM 440 alloy steel. The experiment was designed by using the Taguchi method and experiments were conducted and results thereof were analyzed with the help of the ANOVA (Analysis of Variance) method [13]. The orthogonal array of Taguchi method coupled with grey relational analysis considering three parameters viz. speed, cutting depth, feed rate for optimizing two responses: surface roughness, and material removal rate in precision turning. The MINITAB software was explored to analyze the mean effect of the Signal-to-Noise (S/N) ratio to achieve the multi-objective features [16]. A grey relational grade is determined to evaluate the multiple responses. In the present study, experimental details using the Taguchi method of parameter design have been employed for optimizing multiple performance characteristics such as surface roughness, roundness, and MRR for turning AA 6063 T6. Further, for the optimization of multiple response characteristics, grey relational analysis was used.

II. MATERIAL SPECIFICATION

AA 6063 T6 has a composition of 0.6 wt.% Si, 0.34 wt.% Fe, 0.09 wt.% Cu, 0.09 wt.% Mn, 0.88 wt.% Mg, 0.092 wt.% Cr, 0.095 wt.% Zn, 0.092 wt.% Ti, 97.721 wt.% Al. This metal is commonly used to make doors, extrusion, window frames, and irrigation tubing. CNC lathe was used for machining. The tool

A STUDY ON THE DEVELOPMENT AND IMPLEMENTATION OF HR POLICIES AT BSNL

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ABSTRACT

Media transmission is a rapidly evolving business with a significant risk of deteriorating quality. From magneto trading to cutting-edge New Technology Digital Switches, our country has witnessed many advancements. We have not only seen oscillations in transmission development, starting with transport frameworks and progressing to DWDM structures that provide long division circuits throughout the length and breadth of the country. Media correspondences are both a free service and a necessary infrastructure. Starting now, an in-house planning center is a critical connection for selected planning of experts and employees in a short timeframe length field.

Organizing is a framework by which a person refines and reestablishes his or her potential, cutoff, and reasonableness by refining and reestablishing his or her know-how and know-how the aptitudes required to carry out their growth on a regular basis. In a similar way, planning draws a person in to make the appropriate and necessary direct and air towards the job and people. Regardless, if orchestrating is provided, the professions and lifestyles of workers in affiliations are suggested. To cope with their lead, it rotates the Rules and Procedures. It is the use of data to enhance the presentation of one's current job or to prepare one for a standard progression.

For their variety and delight of shared desires, trick and character must make and advance at the same time; this must be feasible on an extremely important level via sifting through framework, because arranging is the most important method and it is a cost development to the relationship via Human aid improvement for the improvement of the pro. No connection can acquire an up-and-comer who completely sifts through the development and gathered leveled requirements, so the chairman she/he has been chosen, established, and introduced in an alliance should be provided form running conditions to exchange and lead them to sensible for the process.

Any organization's most valuable asset is its ready workers. When there is a limit between the improvement of stray pieces and the workers' current subtleties, BSNL arranges. Right now, the most important sub-structure, express, and one of the most important employable parts of Human Resource Development is finding everything out. Sifting through changes the leveled limit, authenticity, progress and improvement, tolerably interest sensitivity, apparent quality, and progress to a consistent head degree. If the secret to figuring things out isn't provided, the workers will get disillusioned. Separating through increases the affiliation's capability, assurance, creativity, and involvement.

The sold make in my evaluation is to find the abundance of organizing and development in reaching the connection's goals, to consider the extraordinary structures for sifting through seen at BSNL, the rationalization on which sifting through

program are remoted through and managed, and how the introduction assessment allows in watching getting ready wishes.

Data mix from different sources was the outcome of this enhancement. As both a quiet head in an evaluation, I utilized both major and partner data for the assessment. Essential information was gathered via assessment and individual social occasions, at the very least by the assistant.

Certain HRD division reports were utilized to provide information on the outstanding number of experts, the schedule for getting ready attempts, the number of individuals who attended, and other similar issues. Direction readings, alliance data, and the internet were also included in the private data.

The survey's analysis got aided, and the purpose for the assessment became met. The assessment was carried out with the use of real mechanical accumulating, and the evaluation employed two tests: rehash check and relationship.

These exams provided a particular concept about the most epic districts that are unmistakably linked and those parts that are not significant and are not persistently looked at. From that point onward, it aided the assessment in recognizing the basic components that quiet head for reasonable separation and advancement in the affiliation.

This assessment provides a point-by-point concept of the power's approach to the approach program and how the professionals use it, beyond what many would consider feasible and character in task execution. Through the investigation, it was discerned that the filtering through and advancement programs are stumbling but that a few of the viewpoints mentioned should be redesigned right now.

INTRODUCTION

HUMAN RESOURCE POLICIES

Human resources policies are concepts and behavioral norms that "formulate, refine, divide into details, and take action" in order to achieve the goals of the organization.

The following are covered under the HR policy:

1. Hiring policy which takes into account variables like as reservations, sex, marital status, etc.

Review of Medical Image Retrieval Systems and Future Directions

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Abstract:

The goal of this study is to present an overview of online systems for content-based medical image retrieval, with a focus on the United States (CBIR). The authors of this study hope to identify the advantages and disadvantages of these systems, as well as approaches to improving the relevance of multi-modal (text and picture) information retrieval in the I Medline system, which is currently under development at the National Library of Medicine, by the end of the study (NLM). A total of seven medical information retrieval systems were investigated in this study, including Figuresearch, BioText, GoldMiner, Yale Image Finder, Yottalook, Image Retrieval for Medical Applications (IRMA), and I Medline. Figuresearch was the most popular system among participants. The systems were assessed in accordance with the system of gaps described in [1]. However, not all of these systems make advantage of the visual information supplied in biological literature in the form of figures and drawings, but a significant number of them do. All, on the other hand, make an attempt to extract image information from the full-text of the articles and to acquire figures and photos in response to a search query, which is a common practise. It is the purpose of iMedline to advance the state-of-the-art in multimodal information retrieval by merging image and text data in the calculation of relevance, a goal that has so far been accomplished. In this work, we discuss the shortcomings of current medical image retrieval systems, as well as future directions and next phases in the development of iMedline's context-based medical image retrieval system.

1. Introduction

In addition to online literature databases like PubMedCentral® [2] and BioMedCentral® [3], there is a wealth of biomedical information available, including case studies from patient records kept in electronic health records (EHRs). The recovery of this information may be valuable to physicians, patients, and those who teach or study medical sciences since it may aid in better diagnosis, treatment planning, classroom learning, and medical research. While traditional bibliographic or full-text databases provide a substantial quantity of textual information, online biomedical literature includes a significant amount of visual information in the form of figures and drawings that is not generally available through these traditional resources. Captions and full-text excerpts, while helpful in explaining the meaning of figures and photographs, fall short of correctly representing the semantic information included in medical imagery, which is best understood visually by human specialists. By going beyond traditional text-based searching and adding both text and visual aspects in search queries, we expect to identify more effective techniques of extracting information from a variety of different sources than are now available. As a starting point, we examine and evaluate seven medical information retrieval systems: FigureSearch, BioText, GoldMiner, Yale Image Finder, York University's Yottalook (York), Image Retrieval for Medical Applications (IRMA), and the National Library of Medicine's iMedline. FigureSearch is a medical information retrieval system developed by the National Library of Medicine (National Library of Medicine). In order to determine how to increase the relevance of multi-modal (text and picture) information retrieval in iMedline by incorporating the lessons learned from these initiatives, we will examine the inadequacies and capabilities of these systems once they have been completed and evaluated. The goal is to make it easier to identify and obtain biomedical literature by focusing on its visual content. We also want to make it easier to retrieve photographs that are semantically related to each other. This will aid in differential diagnosis, clinical decision support, research, and educational endeavours, among other things. The following diagram depicts the overall structure of this work. The first half of this paper presents an overview of the many methods of retrieving medical information from the internet that are currently available. Following that, an evaluation of these systems is conducted in accordance with the semantic gaps identified in [1]: content, feature, usability, and performance gaps, among other factors. In the following section, we discuss potential research