3.4.3.1: Number of research papers in the Journals notified on UGC website during the last five years

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46. Teaching 21st Century Skills

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TEACHING 21ST CENTURY SKILLS

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ABSTRACT

Now-a-days people are assessed not just by their qualifications, but also on how smart they are. Smartness is envisaged as possessing 21st century skills such as problem solving, critical thinking, initiative, collaboration, entrepreneurialism, creativity and so on. This paper emphasizes on deliberate effort by teachers to develop these skills in their wards. Teaching strategies are discussed with examples. Cases for and against teaching these skills are followed by instances where it can be taught formally. It is concluded that teachers need to have a professional mindset and associate themselves with professional learning organizations.

KEYWORDS: Generative topics, Transfer of learning, Teamwork, Career readiness & Disciplinary knowledge

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Original Article

1. INTRODUCTION

The purpose of education nowadays is to prepare students for work, citizenship and life. The 21st century skills, namely, higher-order thinking skills, deep-learning communities, complex thinking and communication skills are essential. Teaching 21st century skills is facilitated by institutionalizing new teaching and learning processes.

In this electronic age, data gives rise to information which leads to knowledge and expertise. Just having expertise doesn't serve the purpose. The expert must market the skills and produce products or give services. In this way, this person will be accomplishing the task of 21st century.

Cisco, Intel and MS funded an assessment and teaching of 21st century skills consortium which specified the 21st century skills under 4 categories, namely, Ways of thinking, Ways of working, Tools for working and Living in the world. These four categories cover critical thinking, problem-solving, ICT literacy, teamwork, learning to learn, citizenship, personal and social responsibility and the like. The list of 21st century skills include research skills and practices, creativity, perseverance, self-discipline, adaptability, public speaking, facility in using virtual workspaces, media and internet literacy, entrepreneurialism, multi-cultural literacy, ecosystems understanding and health and wellness literacy.

These include cross disciplinary aspects of contemporary life in a complex world and do not find an explicit place in the existing curricula. Educational approaches for cross-disciplinary skills are rooted in engaging learners for authentic learning and proper demonstrations of learning. The credits for the academic engagement and the path learners take to pursue their careers is significant for 21st century skills. Besides these, any discipline must develop problem-solving abilities in the learner.

Models of 21st century skills include Framework for 21st Century Learning, College and Career Readiness and the Seven Survival Skills of Tony Wagner (2010).

47.Land Classifcation using Convolutional Neural Networks

International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878 (Online), Volume-9 Issue-2, July 2020

Land Classification using Convolutional Neural Networks

Anees Fatima Khan, Bhavya P, R. Ravinder Reddy

Abstract: *Identifying the physical aspect of the earth's surface (Land cover) and also how we exploit the land (Land use) is a challenging problem in environment monitoring and much of other subdomains. One of the most efficient ways to do this is through Remote Sensing (analyzing satellite images). For such classification using satellite images, there exist many algorithms and methods, but they have several problems associated with them, such as improper feature extraction, poor efficiency, etc. Problems associated with established land-use classification methods can be solved by using various optimization techniques with the Convolutional neural networks(CNN). The structure of the Convolutional neural network model is modified to improve the classification performance, and the overfitting phenomenon that may occur during training is avoided by optimizing the training algorithm. This work mainly focuses on classifying land types such as forest lands, bare lands, residential buildings, Rivers, Highways, cultivated lands, etc. The outcome of this work can be further processed for monitoring in various domains.*

Keywords: *Convolution Neural Networks(CNN), Deep Learning, Land Classification*

I. INTRODUCTION

Land-cover and land-use change (LUCC), that is associated with imbalances in ecosystems, biodiversity, and global climate changes, show the consequences of human activities and climatic changes on the ecological atmosphere of the Earth's surface. The international community gives more significance to LUCC because of the key content of worldwide environmental change research. Since the 1990s, various research institutions such as Food and Agriculture Organization(FAO), International Geosphere-Biosphere Project(IGBP), International Institute for Applied Systems Analysis(IIASA), etc. have launched several LUCC related projects [15]. Remote sensing is a potential tool for keeping track of the Earth's surface and also a fundamental element for works that use classification and identification technologies to look over the land-use status [16].

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While performing field surveys is more comprehensive and authoritative, it's an upscale task and mostly takes an extended time to update. It is made easy with remote sensing. Land use or land cover change detection is very important for a greater understanding of topography dynamics.

Land use and land cover changes could also be an omnipresent and accelerating process, primarily driven by natural circumstances and anthropogenic undertakings, that successively reflects changes that may affect natural ecosystems. Remote sensing images assist us in discovering solutions to the increasing number of environmental challenges that we face today. It helps not only in getting a bird's eye view of what's around but also in discovering parts of the world that are hardly seen. The potential of categorizing land use and land cover allows humans to more competently utilize natural resources and thereby decreasing waste and deprivation. In spite of its potential to be incredibly useful, satellite data is very huge and confusing, and making sense out of it requires complex analysis.

Understanding land use/land cover has become more and more vital because the country plans to overcome the issues of hazard, unrestrained development, loss of superior agricultural lands, worsening environmental standards, demolition of important wetlands, and so forth. If standards and living conditions are to be upgraded or maintained at modern-day ranges, land use records are needed in the analysis of environmental activities.

Classification of hyperspectral and multispectral data has become crucial in detecting land-use change. Upgrading classification techniques using extensively available satellite data has largely hindered in recent years though there have been many approaches for land classification. The problems related to these customary land classification algorithms are a speedy increase in the dimensionality of satellite data, poor running efficiency, and inefficient feature extraction, etc. To surpass these, various strategies are being developed. Information ashore land use or land cover and opportunities for their appropriate use is essential for the selection, planning, and application of land use schemes to meet the growing needs of primary human needs and welfare. This knowledge also helps in tracking the dynamics of land use on account of the growing needs of the increasing population.

II. LITERATURE REVIEW

Land cover and Land use are two separate terms that we often use interchangeably. Land cover refers back to the bodily traits of the earth's floor, captured within the distribution of flora, soil, water, and different physical characteristics of the land, together with the ones created completely via human activities.

48.Design of College Chatbot using Amazon Web Services

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Design of College Chatbot using Amazon Web Services

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***Abstract*- As the mobile and web-based applications have increased rapidly there is a growing need for chatbots. A chatbot helps in easy navigation through a website, simplifies the process of searching information and helps in understanding the needs of the customer. Over the years, the world has seen multiple uses of chatbots implemented in banking and e-commerce platforms. Inspired by these examples, a chatbot for college website can provide various functionalities to the students, lecturers, and visitors. This chatbot can provide information like announcements, quick links to various subjects in the site, account related information for registered users. Students and lecturers can mostly use this to access their college portals to check numerous things like attendance, examination results, assignments deadlines and timetables etc. This deviation from traditional search capabilities through a website can reduce the search time and can make accessing information easier. It also provides an engaging user interaction and imitate real life conversations for the users. Also, such functionalities implemented via cloud are economical and easy to update.**

***Keywords* – Chatbots, Search Time, User Interaction.**

I.INTRODUCTION

Chatbot is an AI Software that can simulate a conversation with a user in natural language through messaging applications, websites, mobile apps, or through the telephone. Chatbots are often described as the most advanced and promising expressions of interaction between humans and machines. In a technical perspective, chatbot represents the evolution of a Question Answering System leveraging Natural Language Processing (NLP). Implementation of this system for a website can increase customer engagement, monitoring data, instant answers and 24/7 customer service [1].

Most websites rely on menu-based navigation and search bars to provide data to the users. However, websites with improper structure or those containing large amount of data presents a challenge for accessing the information by the user. In such scenario, a chatbot makes it easier for the user to navigate through the site for necessary information. The user has an option to chat with the bot (voice or text) to get appropriate responses. The chatbot has pre-programmed responses, but it can work with dynamic information from a user to make a relevant conversation and suggest pertinent information.

[2] Many companies provide proprietary and open source platforms to develop chatbots. Amazon Lex, part of Amazon Web Services, is one such service for building conversational interfaces into any application using voice and text. Amazon Lex is a flexible chatbot framework with Natural Language Understanding and Machine Learning capabilities. With Amazon Lex, one can build everything from simple bots for messaging to complex bots for enterprise environments. It utilizes the same backend technologies and services of Alexa, so it can be used to build a conversational bot that listens to users when spoken to, speaks back to them, and converts their words to text via automatic speech recognition (ASR).

II. RELATED WORK

ELIZA is considered as the first chatbot which works on the pattern matching system. It was developed by Joseph Weizenbaum in 1964. ELIZA's key method of operation include the pattern recognition of cue words or phrases in the input, and the output of corresponding pre-programmed responses that can direct the conversation in a meaningful way [3]. However, the drawback is that its knowledge is limited.

In 1972, PARRY appeared. It acted as a patient with schizophrenia. PARRY is considered more advanced than ELIZA is as it is supposed to have a "personality" and a better controlling structure. In general, PARRY is considered a chatbot with low capabilities concerning language understanding and the ability to express emotions. It also has a low speed of responding and it cannot learn from the conversations. Artificial Intelligence is firstly used in the domain of chatbots with the construction of Jabberwacky in 1988. It used contextual pattern matching to respond based on previous discussions. Still, Jabberwacky cannot reply to high speed

49.IoT Data Management Using Cloud Computing and Big Data Technologies

IoT Data Management Using Cloud Computing and Big Data Technologies

Sangeeta Gupta (Associate Professor in CSE, Chaitanya Bharathi Institute of Technology, Hyderabad, India) and Raghuram Godavarti (Data Engineer, Hyderabad, India)

Source Title: International Journal of Software Innovation (IJSI) 8(4)

 Pages: 9

DOI: 10.4018/IJSI.2020100104

Abstract

With recent developments in technology, devices like vehicles and home appliances are able to connect to the Internet and communicate, contributing to the Internet of Things. These advancements lead to generation of huge amount of data. This data is needed to derive all the metrics of the IoT devices, which can later be used to make suitable analysis and henceforth take some business decisions. Moreover, these huge amounts of data are very difficult to handle with conventional data warehousing techniques and need a better system. The existing data centers that are located on-site are mostly relational databases which are not scalable to handle increasing needs of storage and compute. These systems are also inefficient to handle different types of data which is mandatory for IoT devices capturing different metrics. In the proposed work, a model is designed to better handle the data generated by IoT devices via Rest API's. Results are presented to depict the functioning of Rest API across all the nodes deployed in a cluster via JSON request. The input to the model is a corresponding JSON payload as a request. The transactions get added to the registered nodes, without a necessity to add payload for the second time. A new batch is created with readings from all the devices. The contents of the entire batch and all systems are obtained while retrieving the results, thus signifying the effectiveness of the proposed work.

50.Computational linguistics: text prediction and sentence correction

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Computational Linguistics: Text Prediction and Sentence Correction

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Abstract
Language in this growing technology world text became the medium to communicate socially. Even though desktop computers have existed since a long time, the method of typing and feeding input has not changed much. Versions after versions of popular text editors have come, and yet no editor has addressed the difficulty of predicting the next possible word and correction of predicted sentence. Also, predictive editors cease to exist in desktop computers even today. This paper aims to predict the next frequent word according to the trained corpus using the n-gram model and even checks the spelling of the entered word. In addition, it checks for the correction of sentence according to grammatical rules. This in proposed method it explores the use of a new software for the input on desktops, which relies on a dynamic predictive algorithm using n-grams and suffix trees to significantly reduce the effort of typing.

Keywords
Natural Language Processing, Spell Check, HMM, n-gram, Corpus.

Introduction

The proper meaning of a sentence could be acquired through a machine learning approach is called natural language processing. Basically it represents computational model of human language processing. Computational linguistics is the scientific and engineering discipline concerned with understanding written and spoken language from a computational perspective, and building artifacts' that usefully process and produce language, either in bulk or in a dialogue setting.

Some of the most prominent are: efficient text retrieval on some desired topic; effective machine translation (MT), question answering (QA), ranging from simple factual questions to ones requiring inference and descriptive or discursive answers, text summarization, analysis of texts or spoken language for topic, sentiment, or other psychological attributes.

Text Prediction and Sentence Correction are the essential concepts of linguistic structure and analysis. A statistical and machine learning technique in natural language processing plays an important role dealing with those applications.NLP is the application of the HMM. Probability of occurrences of a sentence is predicted using HMM.

At present the most commonly employed declarative representations of grammatical structure are **context-free grammars** (CFGs) as defined by Noam Chomsky (1956, 1957) [6], because of their simplicity and efficient parsability. Markov's n-gram model deals with the text prediction and Chomsky's Context free grammar deals with sentence Correction [6].

This paper aims at correcting the spellings of word, predicting the next word using n gram [3] model and checks for the correctness in the syntactic structure of the sentence using grammatical rules in a single application. In addition, it aims at improving the efficiency of storing and retrieving the data from large corpus data with reduced time and space complexities using hash map implementation.

Related work

Now-a-days every mobile application has auto correct module which suggests the spellings and the next word. Few Desktop application like Microsoft Word suggest the spelling and detects punctuation errors. With the increasing corpus, predicting the next word has become easy. But the predicted sentence may not be appropriate. Problems in Existing System are there is no such application for desktop which predicts the next word that is useful for document writing and email writing. The predicted word may not be appropriate it depends on the corpus trained. The existing system doesn't check the words before it adds in to the dictionary. Though there are many text editors but there is no module developed for sentence correction or prediction based on grammatical rules. Though they are many mobile applications which suggests next word and auto corrects spellings, they are not embedded in single application along with correction of sentence.

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51.Impact and Signifcance of Concept Drift in Twitter Data

INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 02, FEBRUARY 2020 ISSN 2277-8616

Impact And Significance Of Concept-Drift In Twitter Data

Dr.E.Padmalatha S.Sailekya

Abstract : The exponential growth of data in micro blogs with the breadth of the user base requires, drilling of a relevant topics. As there is a growth in data a substantial effort is need to filter for the relevance. Detection of relevant, trending information is fundamental building block in drilling of micro blogs. This will help in managing and summarizing the comprehension of people behaviour in emergency situations to take the decisions. A novel approach towards identifying concept drift by initially grouping topics into classes and assigning weights for each class, and finding trends among that classes using sliding window processing model upon Twitter streams. This paper propose an novel approach towards identifying trending topics where the concept-drift occurs, by initially grouping topics into classes and assigning weights for each class, and finding trends among that classes using sliding window processing model upon twitter streams.

Index words : concept-drift, sliding window

1 INTRODUCTION

In today's world communication is mainly through social networking sites like Twitter, Facebook, and Google+. Huge amount of data that is being generated and shared across these micro-blogging sites, serves as a good source of Big Data Streams for analysis. As the topic of discussion changes drastically, the relevance of data is temporal, which leads to concept-drift. Identification and handling of this conceptdrift in such Big Data Streams is present area of interest. The state-of-the-art techniques for identifying trending topics in such data streams mainly concentrate on the frequency of the topic as the key parameter. In the digital world, things that are repeated become reputable or trendy. Different practice of liking, sharing, commenting are judged not on the basis of the content, but on the repetition of the content. This might explain why the more popular a tweet is, the more popular it becomes which increases popularity of the tweet. This depends entirely on the relevance of the topic at that particular instance. The topic keeps changing its position or stick to its previous position as time advances. The topic sometimes slides up or down the rank as it gains public interest or vice-verse. Twitter was therefore selected as a case of study for Concept-Drift Analysis. Concept-Drift Analysis is an integrated study of identifying and handling Concept-Drift in this evolving stream of data.

Related work

In existing system, act miner is used which uses an ensemble classification technique for data problem and solving the other three problem which reduces the cost. Act miner is extended version of mine class.

Act miner addresses major problem concept drift. In this method, dynamic feature selection problem and multi class classification in data stream classification based on clustering methods for collecting potential novel instances so memory is required to store. Another disadvantage is that using clustering method first find centroid which also incremental so time overhead occurs. And also not possible classify streamed data continuously. Because of continuous flow of streamed data and classification become continuous task. classify streamed data continuously. Because of continuous flow of streamed data and classification become continuous task.

Methodology

The state-of-the-art techniques for identifying trending topics in such data streams mainly concentrate on the frequency of the topic as the key parameter. Concentrating on such a weak indicator, reduces the precision of mining. Here we propose a novel approach towards identifying concept-drift by initially grouping topics into classes and assigning weight-age for each class, using sliding window processing model upon Twitter streams. Concept-Drift identification System works in four stages. Data Collection is the first step, followed by pre-processing of the gathered topics. Second step is to label the topics into four main classes; in the third step class weight-age is calculated for these labelled trending topics by identifying the twelve dynamic class parameters arising from sliding window processing model. In a proposed system twitter data will be collected for trending topics. Collected data is arranged into different classes such as politics, entertainment and general etc by applying data labels.

Proposed Architecture Implementation

Data Collection

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- *S.Sailekya doing her Masters in block chain technology.*

52.Real-Time Software for Test and Performance Evaluation of Sensor over RS-422 Interface

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An International Open Access, Peer-reviewed, Refereed Journal

Real-Time Software for Test and Performance Evaluation of Sensor over RS-422 Interface

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Abstract: In this paper, it is discussed that Real-Time Software Application helps in testing and performance evaluating the Sensor over RS-422 Interface. The Real-Time Software application which is developed according to the user requirement helps in easy to use and makes the testing process fast. Various software programming languages are available for developing the application. In this work, the use of python programming language for developing the application is discussed. Also, the advantage of developing real-time software for testing the device is discussed.

Index Terms **– Interface, Real-Time Software, Test, Application Development, Serial Communication. .**

I. INTRODUCTION

Application Softwares are generally used to perform a specific task. Application Software is developed by software programmers. Nowadays different programming languages are available to develop an application. In this work Python programming language is used because it provides many libraries for developing an application and it is easy to write programs in Python. If an application software dealing with real-time data from the environment, then those types of applications are called Real-Time Software applications.

A sensor is an electronic device that is used to measure the physical properties from the surrounding environment or otherwise respond to change in the environment. In this work, the testing and performance evaluation of the Sensor or device is done with the help of real-time software application is explained. The communication between the Sensor and the System is done with the help of the RS-422 Interface device.

Testing is one of the important stages of every electronic device to make sure that the device or Sensor works properly. The real-time software application makes this testing process easy and fast. With the help of application software, we can see the performance of the Sensor in the developed application.

II. LITERATURE SURVEY

Serial Communication is the method of sending data one bit at a time, whereas in Parallel Communication several bits are sent at a time. Communication Standards are a set of rules to be followed by all participants to communicate with one another. In many of the devices, we use RS-232 as the common standard. In the avionics industry, almost all the devices are built on the RS-422 standards because of the benefits offered by them.

RS-232 stands for Recommended Standard – 232. The Electronic Industries Association (EIA) introduced RS-232 as a Recommended Standard in the year 1960. RS-232 supports both synchronous and asynchronous transmissions. RS-232 [1][2] is commonly used in telecommunication, computers, and industrial communication devices. RS-232 supports point to point communication between the devices. RS-232 has a low data transmission rate, short cable length support, and a large voltage swing. RS-422 was introduced to enable a higher data transmission rate over serial data lines than was possible with RS-232. The RS-422 [4][5] can provide data speed of 10Mbps up to 50 feet distance. With the reduced data speed RS-422 can transmit up to 4000 feet at the rate of 100 kbps.

The key feature of RS-422 is that it uses the Balanced / Differential Transmission Technique. RS-422 uses Differential Transmitters and Receivers. In a Balanced data transmission system the voltage produced by the drivers across a pair of signal lines. These lines produce output signals. When one is low, the other is high and vice versa. RS-422 balanced data transmission also requires a ground (GND) connection, even though the GND connection is not used by the receiver to determine the logic state of the data. Table I shows the comparison between RS232 and RS422 Standard.

53.A comprehensive Overview on Building A Search Engine Which Provides Information of The Disease

A Comprehensive Overview on Building A Search Engine Which Provides Information of The Disease

K. Mary Sudha Rani, M. Vinuthna Reddy, Deepika Mitta, Dr. Y. Rama Devi

PDF

Abstract

A web search engine is system which is used for searching for information by taking the input from the user. The results of the search can be text, audio, video or any other format. Biomedical data consists of the information of the disease, drugs pathways, symptoms, proteins. There is a need for efficient search engine which provides information about the disease, drugs and other biomedical information from thousands of the files. In order to design this we need to know all the biological terms, their categories and their relationship. This paper provides a detailed review on search engines which provides the information of the disease.

How to Cite

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Issue

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Section

Articles

54.Implementation of Search Engine for Providing Multi Search Modes Which Displays the results Containing the Description of the Disease and Drugs Used for Treatment

Implementation of Search Engine for Providing Multi Search Modes Which Displays the Results Containing the Description of the Disease and Drugs Used for Treatment

K. Mary Sudha Rani

PDF

Abstract

With an overwhelming amount of textual data in biomedicine and increase in use of web for acquiring knowledge about diseases, their symptoms,drugs used for treatment and pathway and other information about their disease there is need for development of efficient search engine which is user friendly and provides results with high accuracy and similarity with the user input.The main objective of our project is to develop search engine which provides multi search modes and display results containing the description of the disease,drugs used for treatment,pathway of the disease in order of similarity with the user input.

How to Cite

K. Mary Sudha Rani. (2020). Implementation of Search Engine for Providing Multi Search Modes Which Displays the Results Containing the Description of the Disease and Drugs Used for Treatment. *International Journal of Advanced Science and Technology*, *29*(10s), 3035-3046. Retrieved from http://sersc.org/journals/index.php/IJAST/article/view/20693

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Issue

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55.Web Data mining to detect online spread of Terrorism

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Web Mining to Detect Online Spread of Terrorism

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Abstract: **In the recent times, terrorism has grown in an exponential manner in certain parts of the world. This enormous growth in terrorist activities has made it important to stop terrorism and prevent its spread before it causes damage to human life or property. With development in technology, internet has become a medium of spreading terrorism through speeches and videos. Terrorist organizations use the medium of the internet to harm and defame individuals and also promote terrorist activities through web pages that force people to join terrorist organizations and commit crimes on the behalf of those organizations. Web mining and data mining are used simultaneously for the purpose of efficient system development. Web mining even consists of many different text mining methods that can be helpful to scan and extract relevant data from unstructured data. Text mining is very helpful in detecting various patterns, keywords, and significant information in unstructured texts. Data mining and web mining systems are used for mining from text widely. Data mining algorithms are used to manage organized data sets and web mining algorithms can be helpful in mining and extracting from unstructured web pages and text data that is available across the web. Websites built in different platforms have varying data structures and that makes it quite difficult to read for a single algorithm.**

Keywords: Terrorism, naive-bayes, random forest, online spread

I. INTRODUCTION

Terrorist organizations are using the internet to spread their propaganda and radicalize youth online and encourage them to commit terrorist activities.In order to minimise the online presence of such harmful websites we need to devise a system which detects specific keywords in a particular website. The website should be flagged inappropriate if the keywords are found for efficient system development. Data mining consists of text mining methods that help us to scan and extract useful content from unstructured data. Text mining helps us to detect keywords, patterns and important information from unstructured texts. Hence, here we plan to implement an efficient web data mining system to detect such web properties and flag them for further human review. Data mining is a technique used to extract patterns of relevant data from large data sets and gain maximum insights to the obtained results. Web mining as well as data mining are used simultaneously for efficient system development. The literature survey shows the previous work that has been carried out on this subject. The existing systems have been explained in detail in the paper.The system that we propose to implement significantly improves the current system and eliminates the flaws that exist in the existing system.The methodology and results that we achieved after the implementation of the proposed system have also been explained in brief further. This system should be helpful in anti-terrorism and cyber security response departments. The system should help the cops to track communication held between terrorists and should detect web pages developed in different platforms.

III. LITERATURE REVIEW

[1.]Aakash Negandhi et al. spilled various machine learning algorithms in "Detect Online Spread of Terrorism Using Data Mining" to mine textual information on web pages and detect their relevancy to terrorism.

[2.]Chen, H. et al. used the features of sentiment analysis to segregate the words of a web page, classify them and assert a score to each word in "Sentiment Analysis in Multiple Languages: Feature Selection for Opinion Classification in Web Forums."

[3.] Fawad Ali at al. studied various methods by which textual data can be fetched and scanned and executed them to counter Terrorism on Online Social Networks using web mining techniques.

[4.] Nasreena Begum et al. classified the web pages into various categories and sorted them appropriately. There are two features used in this system that are data mining and web mining.

[5.] T.Anand et al. implemented Data mining as well as web mining are used together at times for efficient system development. System will track web pages that are more

56.Control of external devices with thoughts by using BCI(Brain Computer Interface) for IoT-EEG calibration system

International Journal of Modern Agriculture, Volume 9, No.4, 2020
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CONTROL OF EXTERNAL DEVICES WITH THOUGHTS BY USING BCI (BRAIN COMPUTER INTERFACE) FOR IOT-EEG CALIBRATION SYSTEM

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Abstract

A Brain-Computer Interface (BCI) is a device that translates neuronal information into commands capable of controlling external software or hardware such as a computer, a wheelchair, robotic arm. BCI is used to treat neurological disorders and thus helps in the restoration of sensory and motor functions.

BCIs are used with assisted living devices for individuals suffering from motor or sensory impairments. With BCI, a person with all kinds of disabilities but having a functioning brain can do many things that otherwise are impossible to do. With BCI, a person without performing any muscle movement can do various activities using thoughts in the brain. BCI interface is a direct communication pathway between a human or animal brain and an external device.

BCI devices are of two types: invasive and noninvasive. Here, we have used a noninvasive BCI headset device that uses Electroencephalography (EEG) to monitor and measure brain activity. In the market, devices are available that work on Functional Magnetic Resonance Imaging (fMRI) and Magnetoencephalography (MEG). All the existing devices lack an efficient way to train mental commands, maintain different human brain profiles, and a standard way to integrate with IoT devices.

We have done the work to address the above problem. BCI software for EEG headsets is developed, which trains mental commands with calibration and provides easy integration with IoT devices. The BCI software developed offers an interface which can accurately classify the signals of the brain using advanced techniques from machine learning and deep learning domains. The person is able to control external devices with his thoughts. The EEG headset is used to capture the brain waves of the person (signal acquisition phase) and then it is processed using a machine learning model and deep learning model to classify and interpret it. (in signal processing phase).

We have built a brain controlled computer-mouse that integrates with EEG headset. The person will be able to control the mouse clicks on the desktop with human thoughts.The EEG dataset is examined using a deep learning-based approach and machine learning-based approach. The comparison of the accuracy obtained with various algorithms is shown

Index Terms: BCI, Electroencephalography, Neurological disorder, Functional Magnetic Resonance Imaging (fMRI), Magnetoencephalography

57.A review on optimization approach for resource allocation techniques in cloud computing environment: survey paper.

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Research paper

A Review on Optimization Approaches in Cloud Computing Service

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Abstract

Cloud has become the best revenue generator tool in the business world. The Cloud Service Provider (CSP) gives importance to the big data arriving in the cloud. Many methodologies are currently available for cloud storage, retrieval and processing. But a discrete solution for all the problems is not possible due to the volume, velocity and variety of data arriving in cloud. Certain best and proved algorithms can be used based on resource utilization, cost pricing, load balancing for the effective utilizations of cloud. The profit based optimization becomes the goal of the CSP. This draws the attention in finding the major factors that influence cloud computing services. In this paper, a detailed survey of optimization techniques for various key factors of cloud are analyzed and the result obtained in each technique is consolidated, tabulated and compared.

Keywords: *Cloud service provider; Deadlock;Dynamic resource provisioning; Virtual machine migration; Starvation.*

1. Introduction

Cloud has become a basic amenity of daily life for organizations based on business, gaming, software, file sharing, billing, web-hosting and software development [1]. Because of the enormous resource management with elastic nature and self-service manner, the cloud is considered to be a fragile platform to handle. The arising demand of resources in all fields increase the number of cloud service providers (CSP) in market. Creating resources, effectively managing them, protecting them from threats are the major duties of CSP. They create efficient methods in achieving profit through it [2,3]. Many investors are making their investment in cloud seeing its faster development.

Even though cloud was initially invented in the 1960s, it was introduced for industrial purpose in India in 2006. Once it was practiced in the business areas, many issues in security, service level agreement and its infrastructure started to follow. Research in cloud gained attention after it and started increasing every year towards better results each time. Each year many new cloud deployment models are developed for each dormant factor in cloud. The virtualization environment of cloud, the hardware architecture, self-organizing and optimizing nature of it creates new challenges and makes the research still active. The problems of cloud are easy to solve using one crisp solution due to the fact that the issues are interlinked with one another. Increasing the number of servers may be a solution for effective speed and throughput but on the contrary affecting the profit, investment and proper resource utilization [4]. Enhancing the performance with the resources available would be the possible way of solving cloud problems. Minimizing the resources available is nothing but optimization. Certain adaptation in the underlying factors and parameters of cloud would produce efficient utilization [5].

Optimization is a mathematical model based on decision making. The CSP is the decision maker providing the inputs, taking control over the factors and optimizing it. The cloud price data, number of data centers and VM has to be decided by the CSP based on his detailed history from Amazon web services, Google trace data, planet lab etc. User provides their requirement in numerical values of input. The factors of cloud to be optimized are controlled by the CSP and defined as control variables. The type of cloud service and the number of users are used as decision variables. The CSP should take care of various resources of cloud like bandwidth, memory, storage, number of servers, processing speed, latency, power, cost, virtual machine down time and migration time [4].

Once the factors of the cloud to-be managed are defined as control variables by the CSP, it becomes easy in optimizing the cloud environment by maximizing or minimizing the desired profit function with decision thresholds and solved for different input data

58. To Forecast Hospital Admissions from the Emergency Department Using Data Mining Techniques

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TO FORECAST HOSPITAL ADMISSIONS FROM THE EMERGENCY DEPARTMENT USING DATA MINING TECHNIQUES

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Abstract:

Crowding within Emergency Departments (EDs) can have notable negative consequences for patients. EDs, therefore, got to explore the utilization of innovative methods to enhance patient flow and stop overcrowding. One potential method is the use of knowledge mining using machine learning techniques to predict ED admissions. This work will show the collected administrative data from two major acute hospitals to match contrasting machine learning algorithms in predicting the danger of admission from the ED. Here we use three common algorithms to create the predictive models: (1) logistic regression, (2) decision trees, and (3) gradient boosted machines (GBM). Drawing on logistic regression, we identify several factors associated with hospital admissions including hospital site, age, arrival mode, triage category, care group, previous admission within the past month, and former admission within the past year. This study highlights the potential advantage of three common machine learning algorithms in predicting patient admissions. Practical implementation of the models developed during this study in decision support tools would offer a snapshot of predicted admissions from the emergency department at a given time, allowing advance resource planning and, therefore, the avoidance of bottlenecks in patient flow, also a comparison of predicted and actual admission rates.

Keyword: logistic regression, decision trees and gradient boosted machines

I. INTRODUCTION

Emergency department (ED) crowding can have serious negative consequences for patients and staff, like increased wait time, ambulance diversion, reduce staff morale, adverse patient outcomes like increased mortality, and cancellation of elective procedures. Previous research has shown ED crowding to be a significant

59.Aspects of Machine Learning: Concept Learning Support vector Machines, and Graphical Models

The International journal of analytical and experimental modal analysis ISSN NO:0886-9367

ASPECTS OF MACHINE LEARNING : CONCEPT LEARNING, SUPPORT VECTOR MACHINES, AND GRAPHICAL MODELS

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ABSTRACT

The basic aim of this chapter is to give, as far as possible, a condensed (but systematic) presentation of a novel learning paradigm embodied in SVMs. Our focus Will be on the constructive learning algorithms for both the classification (pattern recognition) and regression (function approximation) problems. Consequently, we will not go into all the subtleties and details of the statistical learning theory (SLT) and structural risk minimization (SRM) which are theoretical foundations for the learning algorithms presented below. This seems more appropriate for the application oriented readers. This paper provides the aspects of machine learning towards concept learning, support vector machines, and graphical models.

Index Terms: Machine Learning, SVM, models

I. INTRODUCTION

The goal of *Machine Learning (ML)* is to construct computer programs that can learn from data. The *inductive inference* of machine learning, i.e. the generalizations from a set of observed instances, can be contrasted to early Artificial Intelligence (AI) approaches that dealt mostly with deductive inference, i.e., the derivation of theorems from axioms. Although ML is considered a sub-field of AI it also intersects with many other scientific disciplines such as statistics, cognitive science, and information theory[1]. An area, closely related to ML is *data mining* which deals with the discovery of new and interesting patterns from large data sets. Although ML and data mining are often used interchangeably, one might state that ML is more focused on adaptive behavior and operational use, whereas data mining focuses on handling large amounts of data and the discovery of previously unknown patterns (implicit knowledge, regularities) in the data. Most of this chapter discusses ML in the context of a formal AI system, although when suitable, as in the discussion of graphical models, we assume a more statistical perspective.

ML approaches can be distinguished in terms of representation and adaptation. A machine learning system needs to store the learned information in some knowledge representation structure which is called (an *inductive*) *hypothesis* and is typically of the form of a *model*. Following the Ockham's razor principle, the hypothesis should generalize the training data giving preference for the simplest hypothesis; to obtain valid generalization, the hypothesis should be simpler than the data itself. A *learning algorithm* specifies how to update the learned hypothesis with new *experience* (i.e. *training data*) such that the *performance measure* with regard to the *task* is being optimized (see Figure 1).

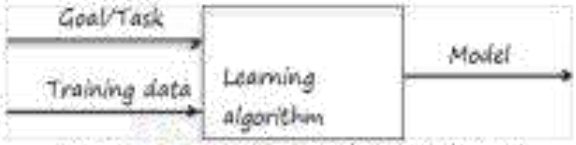

Figure 1: A generic machine learning method.

Over the years, machine learning methods have been applied to solve many real- world problems such as spoken language recognition, fraud detection, customer relationship

60. An Overview On Machine Learning Algorithms and Applications

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AN OVERVIEW ON MACHINE LEARNING ALGORITHMS AND APPLICATIONS

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Despite rapid developments in the machine industry, intelligence has remained the fundamental difference between humans and machines in performing their tasks. A human uses his or her senses to gather information from the surrounding atmosphere; the human brain works to analyze that information and takes suitable decisions accordingly. Machines, in contrast, are not intelligent by nature. A machine does not have the ability to analyze data and take decisions. This paper provides an overview on machine learning algorithms and applications.

Index Terms: Machine Learning, applications, algorithms

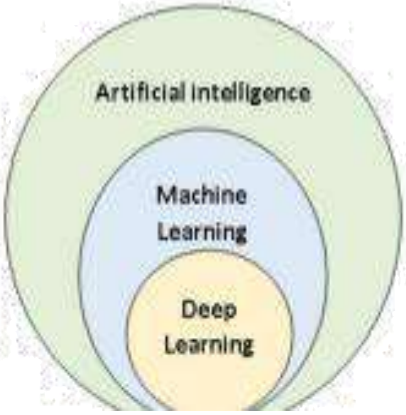
I. INTRODUCTION

Learning is a very personalized phenomenon for us. Will Durant in his famous book, *The Pleasures of Philosophy*, wondered in the chapter titled "Is Man a Machine?" when he wrote such classical lines:

Here is a child; ... See it raising itself for the first time, fearfully and bravely, to a vertical dignity; why should it long so to stand and walk? Why should it tremble with perpetual curiosity, with perilous and insatiable ambition, touching and tasting, watch- ing and listening, manipulating and experimenting, observing and pondering, *growing*—till it weighs the earth and charts and measures the stars?[1].

Nevertheless, learning is not limited to humans only. Even the simplest of species such as amoeba and paramecium exhibit this phenomenon. Plants also show intelligent behavior. Only nonliving things are the natural stuffs that are not involved in learning. Hence, it seems that *living* and *learning* go together. In nature-made nonliving things, there is hardly anything to learn. Can we introduce learning in human-made nonliving things that are called *machines*?

Enabling a machine capable of learning like humans is a dream, the fulfillment of which can lead us to having *deterministic machines* with *freedom* (or illusion of freedom in a sense). During that time, we will be able to happily boast that our humanoids resemble the image and likeliness of *humans* in the guise of machines.



61.A Systematic Review on Open Networking Challenges in IoT Domain

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A Systematic Review on Open Networking Challenges in IoT Domain

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Abstract: *Internet of Things (IoT) is a versatile concept that aims to connect multiple physical devices to provide intelligent services to people in different work environment. Since IoT systems are built on hardware and communication technology, bringing devices to a software or application level to access logical information is a daunting task. This article introduces a review of all open source network related challenges. Here we focus on the big issues related to Big Data management, mobility issues, collaboration and power management issues that can be considered during the construction of any small IoT related projects. The main aim of the study is to show direction to researchers select specific challenges in IoT and opt suitable technologies for intelligent use.*

Keywords: *Big Data, IoT, IoT Challenges, Broad Areas*

INTRODUCTION

The concept of Internet of Things (IoT) is an idea to connect objects which can make life easier in some way. Smart items can be equipped with communication technology, actuators, sensors etc. Nowadays, IoT is gaining attention in many fields such as transportation, agriculture, industry, and health care. IoT data differs from other standard data collected by IoT systems in terms of signals during the data collection, including environment, noise, variability and fast growth. We therefore need to be very careful with the data received from these areas. Since 2004 many challenges have been addressed and solutions have been found but they still need to be improved in areas such as power management and Big Data. We have made progress in these areas as we have been provided with good sensors, contracts and security features. According to Sunil K Sonare, General Manager and Head - IT, Sadbhav Engineering Limited[14], data and information are used for the purposes of first analysis and decision making. Various sensors are used to integrate IoT Solutions into various industries and to assist technical and business leaders with a view to improving design, product features, business growth etc. It requires such a switching technology that provides at any time a seamless connection between the sensors of a different home Internet of Things (IoT) devices.

105. Rough Set-Based Classifcation of Audio Data

Rough Set-Based Classification of Audio Data

T. Prathima ✉, A. Govardhan & Y. Ramadevi

Conference paper | First Online: 18 March 2020

Part of the Advances in Intelligent Systems and Computing book series (AISC,volume 1090)

Abstract

For effective multimedia content, retrieval audio data plays an important role. Recognising classes of audio data which is neither music nor speech is a challenging task; in this aspect, the authors proposed to work on environment sounds. To represent the audio data, low-level features are extracted. These low-level descriptors are computed from both time domain and frequency domain representation of audio data. From the extracted descriptors, midterm statistics are computed and an information system (IS) is built with class labels. From this IS using the concept of rough set theory, reducts are computed, and from the reducts, rules are generated. The rules obtained are tested against the test set sampled from ESC-10 dataset.

Keywords

ESC-10 Information system Discretisation Discernibility relation Reduct Rough set classifier

117. A Self-Assurance Method Based on Trust Estimation for Secure Routing in MANET

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A Self-Assurance Method Based on Trust Estimation for Secure Routing in MANET

T.Shekar Reddy, Y.RamaDevi

Abstract: *The improved edition of conventional wireless networks provides a mobile temporary network (MANET), which is extremely appropriate for urgent situations. However, in a similar instance, its infra-less and resource limit creates many challenges in its performance. The growing security risks are probable to take place due to dynamic behavior and the absolute communication cycle which are based on unnoticed nodes, which dropped packets as they desire. Reliable and trusted nodes can reduce communications overhead and many past security schemes have suggested that high turnover can be achieved. Several security studies are expected to be trustworthy and less expensive. This paper aims to propose a self-assured approach (SAA) based on trust assessment for secure routing to secure high-security constancy and security for reliable database delivery based probability assessment. The assessment will be evaluated and the node malevolent and identifies among random momentary errors and deliberate malicious actions and asses a node total trustworthiness to have secure and safe communication.*

Keywords: *Secure routing, Trust estimation, Self-Assurance, MANET.*

I. INTRODUCTION

Wireless communication equipment and network advancement offer the ability to connect dynamically to construct a short-term network known as MANET. Each node acting on a network such as an intermediate router and full dialogue depends on randomly changing topology, which mostly not able to provide confirm the guarantee of the delivery certainty. The randomness of route discovery in routing not guarantee harmful nodes. Information protocols used in the sense that all participants are loyal to the meetings. However, users who misbehave in a trusted communication environment can cause harm or other honest methods to opt-out of network performance. Thus, the nodes are entirely dependent on the safe route for successful packet transportation, to ensure effective utilization in a wireless temporary network, especially the crucial question. A non-assurance node such as Malicious or selfish nodes [5], [20] is always aimed at utilizing an additional network and its sources or deliberately producing fake-node details related to general nodes. The majority characteristic nodes are trying to obstruct most of the data routing channel that needs less bandwidth, which can reduce the device's resource source to reject the routing packet.

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Various types of attacks include traffic, denial of service, a way of imagination, [2], [18] making malicious nodes (MAL-Node) targets that affect all communication operations. This type of selfish and malicious broadcasting creates a serious problem in the conversation.The most traditional methods able to make out the self-seeking and harmful node in respect of the understanding of the packet drop, however, a node may have the different conditions for packet losses, based on this assumption that this technology is passive or away from the network. This makes the depreciation of the trustiness and reduces the belief of a node and, later eliminated from the network, a major defect of traditional technology [7]. The effect of changing the Node Behavior (N-Behavior) in experimental data routing affects the dilemma of a risk-free node for solving the problem. Utilizing a two-factor estimation relies on responses of the transmitting and receiving of the packets in the previous system approaches [4], [10]. This can increases network supervision overhead and resulting in a higher instability and low performance [9], [29].

However, to our understanding, there is a few efforts to evaluate the character of the node. The paths of MAL-Nodes relies on node connection and packet forwarding to eliminate MAL-Nodes [4], [11].

But these functions unable to analyze the impact of the node based on definite events on network constancy. The objective of this proposal is to resolve this issue through the "Node Trust Recovery Mechanism" to secure long-term network stability for

reliable and high packet delivery. This paper proposed a "Self-Assurance Approach (SAA)" to overcome the trust assessment limitation of nodes. Evaluating node performance is a key factor in determining the reliability and future forecasts of a node. It provides a node guarantee and declares that it is as harmful as failing security packets. The strength of the proposal is that it provides a clear distinction between selfish, vulnerable, and public nodes to provide a reliable and trustworthy node that builds a stable and secure network.

The structure of this article is structure as given below. In Section 2, it explains the work associated with the importance of node activities and secure routing based on trust characteristics. In Section 3, we explain the proposed Self-Assurance estimation method and Section 4 illustrates the experiment and result evaluation. In the last section, we provide a conclusion of the paper.

II. RELATED WORKS

The past studies by the various researchers have discussed the network firmness in the form of diverse perspectives [1], [2], [16], [12], [13], [14].

118.. Task Scheduling in Cloud computing using Credit Based Variant of Time Dependent Time minimization Assignment Problem

Task Scheduling in Cloud computing using Credit Based Variant of Time Dependent Time minimization Assignment Problem

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Abstract— Task scheduling system problem is a nuclear and demanding issue in Cloud Computing. The Cloud computing resources proficiently and gain the maximum profits with scheduling system is ultimate objective in the one of the Cloud computing service providers. In this paper, we have used credit based Variants of Time dependent Time minimization Assignment Problem. A new algorithm has been proposed to find optimal solution for distance minimum of machine accumulated times for time dependent time minimization assignment problem (TDTMAP). The search begins by classifying all the supporting jobs, in the feasible region of interest into machines. Then starting from an arbitrary set of N support jobs, the algorithm obtains an N job optimal bound by systematically adding and dropping supported jobs from the current machine in such a way as to continuously reduce the bound at each step of the sequences in which we obtain best optimal solution. Numerical demonstrations confirm the effectiveness of this algorithm. Here applying Cloud computing is a latest new computing method of delivering technology to the consumer by using Internet servers for processing and data storage keeping supported system while the client system uses the data.

Keywords— Combinatorial optimization, *Time minimizing assignment problem, Time dependent, Lexisearch, Cloud computing, Task scheduling.*

Introduction

Task scheduling system problem is a nuclear and demanding issue in Cloud Computing. The Cloud computing resources proficiently and gain the maximum profits with scheduling system is ultimate objective in the one of the Cloud computing service providers.

The scheduling procedure in distributed structures usually have the goal line of spreading the load on processors and maximizing their utilization while minimizing the total task execution time. Several heuristic algorithms has been introduced in task scheduling. The lexi search technique is one of the combinatorial optimization technique which gives the exact optimal solution. Very often in algorithm design of experiments, the experiments are faced with the problem of choosing among a number of good computing algorithms based on certain criteria (Pandit 1963). The standard assignment problem has been generalized in many directions, in this present one **generalization is called 'time dependent time minimization assignment problem' which is different** from the usual assignment problem. The usual assignment problem has the following structure: There are n jobs and m machines, on which any of the jobs can be processed. How ever, the corresponding times are not the same and are given by a time matrix [tij] of order m

119. An intelli AFM: An intelligent association based fuzzy rule miner to predict high blood pressure using bio-psychological factors

An intelli AFM: An intelligent association based fuzzy rule miner to predict high blood pressure using bio-psychological factors

Cite

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Abstract: High Blood Pressure (HBP) is one of the major triggering factors for many health-related issues such as brain stroke, heart stroke, kidney failure, eye damage, etc. The victims of HBP are drastically increasing day by day across the globe. The prediction of HBP in advance is more beneficial to control the Blood Pressure (BP) rather than using BP control medications. So this paper focused on an intelligent fuzzy classification model called Association based Fuzzy rule Miner (AFM) to predict HBP. Although they are numerous parameters that contribute to HBP, the impact of Bio-Psychological factors on HBP is always worth noting. This paper considered biological factors obesity level, cholesterol level, age, and Psychological factors anxiety level and anger level of a person for experimental analysis. The proposed Model initially converts the crisp data set into the fuzzified data set. Later, the association rules are extracted using apriori algorithm based on conditions imposed as constraints. In the final step the extracted association rules for each decision class separately together constructs AFM, which predicts whether a person is a victim of HBP or not. The experiments are conducted on a real-time dataset of 1000 records, where 600 records are used for training and 400 records are used for testing. The AFM has shown 90.75% accuracy, which is for better than the accuracy of existing classifiers such as Random Forest, Naïve Bayes, Simple logistic regression, J48, and PART.

120. ADAPTIVE SPATIAL TEMPORAL FILTER (ASTF) AND ENHANCED RECURRENT NEURAL NETWORK (ERNN) FOR VIDEO SUMMARIZATION

Corpus ID: 245259190

ADAPTIVE SPATIAL-TEMPORAL FILTER (ASTF) AND ENHANCED RECURRENT NEURAL NETWORK (ERNN) FOR VIDEO SUMMARIZATION

S. Ramu • Published 2020 • Computer Science

Video summarization is one among the potential schemes designed for efficient interpretation of visual content by choosing the meaningful frames present in the video clip. The fast evolving video content, video summarization, highlighting the automatic selection of significant and meaningful segments from videos, has found critical importance. But, the issue is a huge challenge owing to the subjective behavior of users having their individual choices on the summaries. Using the temporal dependency observed among video frames or sub shots is quite essential for the video summarization phase. The earlier work (i) temporal noise occurring in scenes under variations in illumination or lighting, (ii) Convolutional Neural Network (CNN)'s capability deficit to exhibit spatiall invariance to the input data, shot edge detection is not carried out automatically. In order to get over these problems, proposed model presented a deep learning technique called as Enhanced Recurrent Neural Network (ERNN) for video summarization, noise cancellation is performed with the help of two filtering algorithms such as Mean Filter (MF) and Adaptive Spatial-Temporal Filter (ASTF). The discussed work includes three steps (i) sampling of video frames, (ii) preprocessing, (iii) frame feature extraction. In the first step, the input video are split into sampling the video frames, and are sampled with the intent of reducing the further computational overhead. In the second step, preprocessing of the sampling of video frames is carried out for noise elimination. Once the noise suppression is completed, this kind of frames leads to increased computational time, and this kind of frames can lead to the generation of high quality video summary, and two filtering algorithms known as MF and ASTF are

121. Efcient Load Balancing approach in Cloud Computing using Honey Bee algorithm

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Load Balancing in Cloud Computing using Honey Bee Swarm Intelligence Technique

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[b]Director, Khalsa College of Engineering & Technology, Amritsar , (Punjab), India.

Abstract—
In cloud computing, job scheduling is one of the prominent research areas. Many endeavors have been made to provide efficient scheduling algorithms for optimizing the utilization of resources in cloud computing. It has been observed while scheduling in real time scenario, the system gets overloaded and the performance declines and compromises at the Quality of Service (QoS). Therefore some efficient load balancing technique is required to be deployed at the intra-datacenter level to prevent the system from violating the Service level agreement (SLA). Many swarm intelligence techniques have been rendered and studied in the previous year's which provide an intelligent insight for balancing the load on the system. In this paper Honey Bee foraging behavior inspired algorithm has been studied/presented to balance the load on the system, to ensure the optimal utilization of resources and to improve QoS in cloud computing environment.

Keywords: *Load Balancing, Cloud Computing, Honey Bee Foraging Behavior, Honey Bee Algorithm, Virtual Machine Scheduling, Scheduling Strategies, Quality of Service in Cloud Computing, QoS, Swarm Intelligence, Nature Inspired Algorithms.*

1. Introduction

In cloud computing, optimal utilization of available resources is a very complex process where scheduling plays a crucial role in taking strategic decisions for mapping of available resources to the incoming tasks [1]. Virtualization provides the platform for running multiple virtual instances/operating systems of computer systems in layers, on the top of actual hardware, simultaneously [2]. Many scheduling algorithms have been rendered for allocating the available resources to the tasks but the outcome was far from optimal [3]. It was observed that despite the clustering of jobs and Virtual instances on the basis of requirements and processing abilities the system gets overloaded and results in the meager output which reduces the performance and throughput of the whole system. This scenario opens the scope for more research in the area of load balancing in cloud computing environment. Load balancing allows managing workload by allocating resources among multiple computers, networks or servers present in the same datacenter. During the final execution of the tasks when some VM gets overloaded, the extra load/tasks need to be shifted to other VMs which are either are lying idle or are underloaded at that given time. This rearrangement must be done in a way that it should maintain a noble union of priorities and no task needs to wait for long or starve.
Presently, two types of load balancing techniques are available namely (1) Static and (2) Dynamic. Static algorithms are preferred when the inflow of tasks is static and has lesser variation of load. As cloud computing is a real scenario where load would be varying at various times, dynamic load balancing algorithms are proven advantageous.

2. Literature Survey

Nature inspired algorithms achieve a great progress in providing optimal solution to dynamic situations of cloud computing. Many researchers have experimented with Swarm Intelligence and used them to balance load in cloud environment. Varsha et al. [5] have discussed Swarm Intelligence (SI) algorithms which are Nature Inspired viz. Bat algorithm (BA) [6], Firefly algorithm (FA) [7], Cuckoo Search (CS) [8], Flower pollination algorithm (FPA) and some Evolutionary algorithms: Harmony Search (HS) [9] and DE (differential evolution) [10]. These algorithms are very simple and

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122. A New Way to tackle Teaching - Learning Situation by Universities & Colleges during Lockdown

A New Way to Tackle Teaching – Learning Situation by Universities & Colleges during Lockdown

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ii. Prof. A. Ramakrishna, Professor & Principal, University College of Education, Osmania University, Hyderabad – INDIA.

ABSTRACT

Online teaching and online learning are inevitable during these critical moments. These are the teachable moments when both teachers and students are vying for interaction and completion of the topics. Further, a few instances of online quizzes are done for high-stakes assessment. Authors opine that when these practices are yielding good results and affecting learning; why not grasp the positives from such endeavors and implement in normal periods with due credits to the students.

Key Words: Online teaching; Online learning; assessment; teachable moment;

1. INTRODUCTION

A pandemic – COVID – 19 has created a situation of stumbling the routine activities of people. It has stalled the movement of people and so it affected the educational institutions. During such situations, alternate modes of connecting to the students is worked out by the concerned officials. The higher authorities – UGC and other regulatory bodies advised universities and colleges to handle this period in an amicable manner by conducting online classes for the students. So began the online teaching and online learning activities.

A survey conducted by Prof. P. Vinod & Prof. B. Vasuki of the Sarojini Naidu School of Arts &Communication; Hyderabad Central University found that it is not easy to teach online. Of the 2500 participants, 37% students expressed their readiness for online classes; 45% listened to the online lectures; while 18% students expressed their disinterest in online classes. Difficulties expressed by the students were the lack of internet facilities and electricity in the rural areas; writing assignments and downloading documents with the mobile, as many do not have laptops / desktops (Eenadu newspaper dated 20 – 04 – 2020).

The authors have struck with an idea – 'even during the normal period when everything is fine and going on well, why don't we encourage online teaching & online learning by our

123. Prevention of Routing Attacks using Trust-Based Multipath Protocol

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Prevention of Routing Attacks using Trust-Based Multipath Protocol

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ABSTRACT: In order to provide secure data transmissions, the neighbour nodes must recognize different types of attacks and their effects on the Mobile Ad Hoc Networks (MANET). To perform routing in the traditional protocol the number of hops is used to select the route. To measure the neighbour's behaviour, to forward the packets, and to reduce the effect of malicious node trust model is used in MANET. In this paper, Trusted Path-based ad hoc on-demand multipath distance vector (TAOMDV) routing protocol is proposed. It is used to discover trustworthy forward paths and can prevent the blackhole, wormhole, flooding and misrouting attacks. The highest trusted path is selected to send the data. The above said attacks are prevented, by the TAOMDV, using passive acknowledgement. The simulation result shows that TAOMDV protocol achieves high packet delivery ratio (PDR), reduces the packet overhead and end to end delay of packet. It provides higher detection ratio of the attacker. But the throughput is achieved little lower while more attackers presents in the network.

Key words: Blackhole, Wormhole, Flooding, Misrouting and Passive Acknowledgement.

I. INTRODUCTION

As the communication is through wireless medium, it is possible for the intruder to intercept and modify the message or can even prevent the routing information (RI). However, many applications run in untrusted environments, requiring secure routing and communication.

Therefore it is mandatory to preserve all the security principles, confidentiality, integrity, availability, authentication and non-repudiation, so that the entire network operation should not get disturbed. There are two primary motivations associated with trust management in MANETs. Firstly, trust evaluation helps to identify malicious entities. Secondly, trust management offers a prediction of one's future behaviours and improves network performance.

The general routing protocols for ad hoc networks cope well with dynamically changing topology but are not designed to accommodate defense against malicious attackers and to detect the compromised nodes through RI. Routing protocols for ad hoc networks must handle the outdated RI to accommodate dynamic changing topology. False RI generated by compromised nodes can also be regarded as outdated RI. As long as there are sufficient numbers of valid nodes, the routing protocols should be able to bypass the compromised nodes or make use of an alternate route.

The malicious node(s) can attack the MANET using different ways, such as sending fake messages several times, fake RI, and advertising fake links to disrupt routing operations. A black hole attack is a type of routing attack in which malicious node advertise itself as having shortest path to the destination in a network by sending fake route reply to the source node. It can be treated as Denial of Service (DoS) by dropping the received packets. In the flooding attack, the attacker broadcast many useless packets per time interval with the IP address which does not exist in the network. Attack such as gray hole, where the attacker node behaves maliciously for the time until the packets are dropped and then switch to their normal behaviour. In wormhole attack, severe threats to MANET, the attacker records packets at one location in the network and tunnels them to another location. This tunnel between two colluding attackers is referred as a wormhole. The wormhole and blackhole attacks disclose the confidential security service and flooding attacks reduce the availability of the network service.

The traditional routing protocols only care about the number of hops but not addressing the security. A secure routing protocol is unable to prevent malicious or compromised nodes from doing misbehaviours, which are authorised as participants in the network. There are two trust models used in ad hoc network [10] such as direct trust and indirect trust. To find the neighbour's behaviour and to forward the packet to the destination, the trust model is used in MANET. It monitors only a node's own packet forwarding requests. If malicious node moves to a new sub-network, it will be recorded as a normal node with initial trust value.

In this paper, a protocol named trusted path based ad hoc on-demand multipath distance vector (TAOMDV) is proposed to discover secure path. It is based on the ad hoc on demand distance vector protocol (AODV) and the multipath routing protocol [7].

124. Truth Discovery in Big Data Social Media Sensing Applications

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Truth Discovery in Big Data Social Media Sensing Applications

Omar Ahmed, Sangeeta Gupta, Mohammed Hasibuddin

Abstract: The detection of truthful information amid data provided by online social media platforms (e.g., Twitter, Facebook, Instagram) is a critical task in the trend of big data. Truth Discovery is nothing but the extraction of true information or facts from unwanted and raw data, which has become a difficult task nowadays in today's day and age due to the rampant spread of rumors and false information. Before posting anything on the social media platform, people do not consider fact-checking and the source authenticity and frantically spread them by re-posting them which has made the detection of truthful claims more difficult than ever. So, this problem needs to be addressed soon since the impact of false information and misunderstanding can be very powerful and misleading. This mission, truth discovery, is targeted at establishing the authenticity of the sources and therefore the truthfulness of the statements that they create without knowing whether it is true or not. We propose a Big Data Truth Discovery Scheme (BDTD) to overcome the major problems. We have three major problems, the main one being "False information spread" where a large number of sources lead to false or fake statements, making it difficult to distinguish true statements, now this problem is solved by our scheme by studying the various behaviors of sources. On Twitter for example rumormongering is common. The second problem is "lack of claims" where most outlets contribute only a tiny small number of claims, giving very few pieces of evidence and making it not sufficient to analyze the trustworthiness of such sources, this problem is addressed by our scheme where it uses an algorithm that evaluates the claim's truthfulness and historic contributions of the source regarding the claim. Thirdly the scalability challenge, due to the clustered design of their existing truth discovery algorithms, many existing approaches don't apply to Big-scale social media sensing cases so this challenge is managed by our scheme by making use of frameworks HTCondor and Work Queue. This scheme computes both the reliability of the sources and, ultimately, the legitimacy of statements using a novel approach. A distributed structure is also developed for the implementation of the proposed scheme by making use of the Work Queue (platform) in the HTCondor method (nearly distributed). Findings of the test on a real-world dataset indicate that the BDTD system greatly outperforms the existing methods of Discovery of Truth both in terms of performance and efficiency.

Keywords: Big Data, Rumors, Scalable, Social Media, Truth Discovery, Twitter.

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I. INTRODUCTION

THIS paper is presented to address the truth discovery problem in big data social media sensing applications (for example Twitter, Facebook, and Instagram) where many people make claims about their surroundings and make the claim public by posting it on these social media platforms and people believe it without checking the authenticity or the credibility of the claim. This model is inspired by the increasing proliferation of portable data collection devices (e.g., smartphones) and the vast opportunities for data sharing created by social media. Types of social media sensing include real-time situation emergency response; smart transportation system applications use social network apps based on the venue. A critical challenge in social media is the detection of truth where the motive is to differentiate credible sources and true statements from huge social media data that has unextracted and unfiltered data. So, we agreed to introduce this project because it is a problem that requires an efficient solution. It is commonly observed in real-world applications such as social media applications like Twitter, Instagram, Facebook, etc. to determine whether the claim made by a person has credibility or not i.e. if it is truthful or not. There are many claims on social media that have no credibility. In this project, there are three major challenges. The first one is "False information spread" here a small number of outlets lead to false claims, which makes it impossible to differentiate true statements. Rumors, scams, and manipulation bots, such as on Twitter, are common two examples of colluding media, spreading disinformation, and obscuring the facts. From real-life situations we can say that the widely spread false information appears much more believing than the true information, and thus makes truth discovery a difficult job. The test findings on a real-world case tell us that existing approaches for finding reality do not work well in recognizing facts when disinformation is widely spread. The second problem is "lack of claims" here mostly all the sources have very few claims, leading to a shortage of evidence to assess the trustworthiness of those sources, but many existing algorithms are highly dependent on accurate estimating of source reliability, which usually involves a relatively dense data collection. For example, due to spontaneous nature of social media sensing, sources lack the motivation and alternatively they can choose to disregard non-interested events and cases and only produce data in interesting topics or events. Third, because of the centralized nature of their truth discovery algorithms, that is the current solutions did not have deep knowledge on the scalability dimension of the truth discovery problem and,

125. Automated Document Grading using Principal Component Analysis

Automated Document Grading using Principal Component Analysis

Srujana Inturi, Madhuri Vennu, Rachana Kavukuntla

PDF

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Issue

Recent Technologies in Engineering and Management 2020

Section

Articles

Abstract

This study researches the general adequacy of the utilization of n-grams separated terms, the conglomeration of such expressions, and a blend of capacity extraction systems in building a mechanized exposition kind reviewing (AETG) contraption. The paper fixated on the difference in the primary angle investigation (PCA) through incorporating n-grams states as go into the PCA set of rules. Printed versions of inspectors' stamping plans and softcopies of understudies' responses for 2 subjects, data mining and Internet Of Things, provided on the branch of computer science and engineering from CBIT, in 2019 II semester have been utilize like casing research. The textual contented about marking methods have been transcript interested in virtual documents the use of identical report format as the student response. The files had been preprocessed intended for stop words removal and every key-phrase stemmed to cope with morphological differences. N-gram phrases (N=2, 3) have been extract for the duration of all students' solution scripts. The files had been represented within the

126.. Performance Analysis of CNN Models to predict Driver distraction

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Performance Analysis of Convolutional Neural Network models to Predict Driver Distraction

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***Abstract*— Driver distraction is one of the major factors in car crashes accounting to almost a quarter of all road accidents. The very few reports of accidents related to self-driving cars could have been averted if the emergency driver was not distracted and focused on the road ahead. This makes detection of distracted drivers very important for preventive measures. This paper is based on a deep learning solution making use of Convolutional Neural Networks to detect the distraction of driver, thus averting the possible accidents. State Farm has made available a dataset of driver images in different positions like texting, talking to passengers, operating the radio etc apart from simply driving. The idea is to train a convolutional neural network based on the ResNet architecture. ResNet achieved an error rate of 3.57% in the Imagenet dataset and is considered one of the best CNN architectures. This paper uses the ResNet to train the model and also analyse how the accuracy of the model changes when techniques like weight regularization, change of activation to LeakyRelu are incorporated to the existing VGG-16 architecture.**

***Keywords*— Convolution Neural Network, ResNet, VGG-16, Deep Learning , Driver Distraction**

I. Introduction

A. *Significance and Objective*

Distracted driving is a main factor that causes severe car accidents. As per the survey of National Highway Traffic Safety Administrator, nearly one in five motor vehicle crashes are caused by distracted driver and is a source of growing public concern. It is revealed that different distraction activities have different risks of causing accident. Thus, a proper recognition and categorization of distraction activities via images of drivers in their driving is important. The implementation of this paper focuses on driver distraction activities detection via images using deep learning technique. Objective is to build a high-accuracy model to distinguish whether drivers is driving safely or conducting a particular kind of distraction activity. The input of the model is images of driver taken in the car. As a first step, preprocess these images to get input vectors, then use different CNN Architectures (VGG16 and Resnet) to output a predicted type of distraction activity that drivers are conducting.

B. *Methodologies*

From experimentation using original VGG-16 network, it was observed that model is overfitting to the training data. It performs well on the training set achieving almost 100 % accuracy but fails to generalize on the unknown test data. Hence various regularization techniques are performed to reduce the generalization error.

1) LeakyReLU Activation Function

The Rectified Linear Unit (ReLU) activation function has become very popular in the past couple of years because of efficiency and faster convergence. But as the ReLU function sets output value to zero for all inputs less than zero, weights of some neurons may never get updated and it may result in dead neurons. LeakyReLU overcomes this problem by introducing a small slope in the negative region to keep the updates alive.

2) Dropout

Dropout is an efficient way of reducing overfitting by randomly dropping out i.e ignoring some neurons in training phase. It helps to reduce interdependent learning amongst the neurons. Linearly increasing dropout in few convolutional as well as fully connected layers has been applied in the implementation.

3) L2 Weight regularization

Weight regularization also called weight decay strongly relies on the implicit assumption that a model with smaller weights is somehow simpler than a network with large weights [10]. It is implemented by penalizing the squared magnitude of all the parameters directly in the cost function. The term $0.5\lambda w^2$ to the cost function has been added for considering every weight 'w' in the network, where λ is the regularization strength. The choice of λ is a hyper parameter and is set to *0.001*.

127. Heart Disease Prediction Using Hybrid Technique

Heart Disease Prediction Using Hybrid Technique

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Abstract— **Heart disease is one of the biggest causes of morbidity and mortality among the population of the world. It is a deadly disease that a large population of people around the world suffers with. When considering death rates and the large number of people who suffer from heart disease, it is revealed how important early diagnosis of heart disease is. Traditional way of diagnosis is not sufficient for such an illness. Prediction of cardiovascular disease is regarded as one of the most important subjects in the section of clinical data analysis. The amount of data in the healthcare industry is huge. Developing a medical diagnosis system based on machine learning for prediction of heart disease provides more accurate diagnosis than the traditional way. Machine learning (ML) has been shown to be effective in assisting i.e., making decisions and predictions from the large quantity of data produced by the healthcare industry. Various studies give only a glimpse into predicting heart disease with ML techniques. In this paper, we propose a method that aims at finding significant features by applying machine learning techniques resulting in improving the accuracy in the prediction of cardiovascular disease. The prediction model is introduced with different combinations of features and several known classification techniques. We produce an enhanced performance level with high accuracy through the prediction model for heart disease with the hybrid technique.**

Keywords—**Machine Learning, Classification, Prediction, Accuracy**

I. INTRODUCTION

The term "heart disease" is often used interchangeably with the term "cardiovascular disease." Cardiovascular disease generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Heart related diseases or Cardiovascular Diseases (CVDs) are the main reason for a huge number of deaths in the world over the last few decades and has emerged as the most life-threatening disease, not only in India but in the whole world. So, there is a need for a reliable, accurate and feasible system to diagnose such diseases in time for proper treatment. Machine Learning algorithms and techniques have been applied to various medical datasets to automate the analysis of large and complex data.

Many researchers, in recent times, have been using several machine learning techniques to help the healthcare industry and the professionals in the diagnosis of heart related diseases. It is difficult to identify heart disease because of several contributory risk factors such as diabetes, high blood pressure, high cholesterol, abnormal pulse rate and many other factors. Various techniques in data mining and neural networks have been employed to find out the severity of heart disease among humans. .The nature of heart disease is complex and hence, the disease must be handled carefully. Not doing so may affect the heart or cause premature death. Heart disease is predicted based on symptoms namely, pulse rate, sex, age, and many others.

The main objective of the work is to improve the performance accuracy of heart disease prediction by combining two models which gives better accuracy. This paper presents comparative results of various models based on machine learning and deep learning algorithms and techniques and analyses their performance. Models based on supervised learning algorithms such as SVM, Naive Bayes, Decision Trees, Random Forest and ensemble models are found very popular among the researchers. Along with that we implemented deep learning and genetic algorithms. The idea of hybrid technique i.e, combination of machine learning techniques using weighted average. Paper presents literature and existing works in section –II. Design work flow and module description in section –III and data set description presented in section –IV, results in section-V and conclusion and future work scope in section VI.

128.Implementation of Search Engine for Providing Multi Search Modes Which Displays the results Containing the Description of the Disease and Drugs Used for Treatment

Implementation of Search Engine for Providing Multi Search Modes Which Displays the Results Containing the Description of the Disease and Drugs Used for Treatment

K. Mary Sudha Rani

PDF

Abstract

With an overwhelming amount of textual data in biomedicine and increase in use of web for acquiring knowledge about diseases, their symptoms,drugs used for treatment and pathway and other information about their disease there is need for development of efficient search engine which is user friendly and provides results with high accuracy and similarity with the user input.The main objective of our project is to develop search engine which provides multi search modes and display results containing the description of the disease,drugs used for treatment,pathway of the disease in order of similarity with the user input.

How to Cite

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129.A comprehensive Overview on Building A Search Engine Which Provides Information of The Disease

A Comprehensive Overview on Building A Search Engine Which Provides Information of The Disease

K. Mary Sudha Rani, M. Vinuthna Reddy, Deepika Mitta, Dr. Y. Rama Devi

Abstract

A web search engine is system which is used for searching for information by taking the input from the user. The results of the search can be text, audio, video or any other format. Biomedical data consists of the information of the disease, drugs pathways, symptoms, proteins. There is a need for efficient search engine which provides information about the disease, drugs and other biomedical information from thousands of the files. In order to design this we need to know all the biological terms, their categories and their relationship. This paper provides a detailed review on search engines which provides the information of the disease.

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Articles

130.. Soil analysis and crop selection using iot

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Soil Analysis And Crop Selection Using IoT

K. Spandana, T. Manoj Kumar, Suresh Pabboju

Abstract: In Indian economy, agriculture plays major role. Irrigation is essential factor in farming, as unpredictable monsoon rainfalls. Different type of crops needs different type of soils and amount of water. The amount of water required by plant is also dependent on the climate where it is being grown. By selecting the right crop for the given soil and climate conditions, one can optimize his yields and save water requirements for irrigation. Internet of Things (IoT) will rebuild the agriculture to enable farmers with wide range of methods for sustainable development. This paper presents how to analyze the crop field and provide results to the farm owner and help him get connected to the farm with the help of Sensor technology.

Index Terms: Internet of Things (IoT), Sensor Technology, Smart Agriculture, Soil Quality, Water Quality, KNN

1 INTRODUCTION

In India farming is done using the routine ways. The fact is that the majority of our farmers need proper knowledge to make it perfect even if it is more unpredictable. A large fraction of farming and agricultural behavior is based on the presages. Farmers have to tolerate huge losses if they follow traditional methods. Since we know the advantages of appropriate soil moisture and its quality, air quality and irrigation, in the enlargement of crops, these parameters shouldn't be ignored. There are several IoT applications in farming such as data collection on temperature, precipitation, humidity, wind speed, pest invasion, and soil moisture content. The collected data is used to automate farming methods. Farmer has to follow decisions given by the IoT system to improve quality and quantity, diminish risk and waste of water, and reduce effort required to administer crops. This work will help to the farmers to get connected to their farm anywhere and anytime. To monitor and automate the farm process we can use wireless sensor networks and IoT devices. Farmer can use smart phone to know updated farm conditions made by the IoT system through mobile app. The main objective that will be focused on in this work is to select suitable crop for the particular field. There are several tools have been developed for collecting data on temperature, precipitation, humidity, wind speed, and soil moisture content. Collected data can be used to choose the crop suitable for the field.

2 LITERATURE SURVEY

"IoT is an intelligent technology which includes identification, sensing and intelligence". Intelligence of life itself can also be considered as part of IoT technology. This technology is used in pattern recognition field like computing, measurement, communication, collecting information, and processing[2] . IoT not definition changes if the cloud computing includes. It is defined as "IoT=cloud computing + ubiquitous network + intelligent sensing network". Brain of the cloud computing is "Cloud computing management platform".

It involves organizing of cloud computing customization application by consumers of this IoT, computing and processing what is involved in customization service, managing and coordinating nodes in the data center [8]. While World is looking for smart agriculture, it is important While world agriculture is undergoing industrialization, it is important to build up agricultural information at the same time. Agricultural information has become the tendency of expansion for world agriculture. As far as China's agricultural development, "agricultural information is a most important force promoting agricultural development and transformation and a corner stone for maintaining sound and 5 sustaining economic development". In recent years, they have been focusing on agricultural information service and infrastructure development. After years of hard efforts, notable consequences have been seen in agricultural infrastructure development, like "Every Village" project of Ministry of Industry and Information, "Golden Agriculture project" and "Three Dian Project" of Ministry of Agriculture. However, in China's agricultural information problems are still exist. For example, we put more prominence on hardware than software and cannot offer high quality information to meet production needs of farmers. Moreover, information is not adequately used by farmers [3].

3 METHODOLOGY

Over the decades, people tried various methodologies in the field of agriculture. In this era of technology, modern agricultural methods are evolving rapidly. It has become a necessity to adopt newer techniques to cater to the needs of the growing population. The Proposed System extends the existing system by augmenting new techniques to the previously available plan of work. The hardware consists of NodeMCU, soil moisture sensor, temperature and humidity sensor, pH sensor, current amplifier and Mail. The sensors are plugged at different locations in the field for data acquisition.

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131.. Analysis and Prevention Of Road Accidents Using Machine Learning

Analysis And Prevention Of Road Accidents Using Machine Learning

Authors Kavita Agrawal, G Eshwar Chaitanya, M Ramesh

Description Nowadays, road safety has become an important issue in the urban areas and rural areas, due to the high vehicle density. Road safety can be improved by reducing the accidents. Factors such as inexperience, lack of skill, and risk-taking behaviors have been associated with the collisions of young drivers. To determine the main factors associated with road traffic accidents is one of main objectives of accident data analysis. Road accidents are major issues in this modern world, as the technologies are rising and also the inventories of automobile industries are keep growing, people tend towards speed, design, and many more tools and also avoiding traffic rules, results in road accidents. Automating the process of identifying the places of road accidents which had occurred, saves a lot of time and human effort. Due to heterogeneity in nature of road accident data makes analysis tricky. To overcome heterogeneity of ...

132. Book Recommendation System using Neo4j Graph Database

Book Recommendation System using Neo4j Graph Database

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ABSTRACT - In digital era, book has an important role in life. By processing the book metadata, information can be given to user who needs book recommendation. This paper introduces the usage of graph database in book recommendation. By combining Goodreads book metadata and graph database from Neo4j, data from metadata can be processed. Then, with cypher query by inputting author's parameter or book type's parameter, user can get book recommendation based on their input criteria. The result is exactly the same as that of processing the metadata manually in relational database. But in storing book recommendation into database, graph database is more flexible than relational database. It makes more efficient in preparing data before querying it. Given that in book recommendation, the database should be as flexible as possible because user rarely knows about what book they need. So, there will be a lot of possibility in giving advice to user.

Keywords - Book recommendation, Relational database, Graph database, Neo4j, Cypher query

I. INTRODUCTION

Book has become very important in human's life recently. There are a lot of books with different purpose and different author. For instance, there is a book for fun like a novel, book for education and also book for hobbies. In addition, the field of recommender system, from an Information Retrieval (IR) perspective, has been recommended by internet based on filtering. By processing the book metadata, information can be given to user who needs book recommendation[1]. The objective of this paper is to achieve a flexible and efficient data storage mechanism which stores book metadata, to give book recommendation to the user. This paper also aims at comparing the graph database with the traditional Relational Database (RDBMS) with respect to different aspects like structure, performance, flexibility etc.

A. Relational database vs NoSQL database

There are a lot of companies which still use relational database for their ERP (Enterprise Resource Planning). ERP itself has become the reference of process management's usage. However, nowadays customers tend to confuse about their needs. Customers realize that it is the time that ERP system should be more flexible. So, vendors have to make the ERP and the business process itself as flexible as possible. Because of it, ERP comes up with NoSQL database to provide its flexibility.

There has been also an increase of interest in graph that representing social network and web site link structure. There has been an increase of data complexity which is no longer compatible with relational database. The usage of graph database is not limited on solving web site link structure. One of an application that is quite popular in representing graph database is Neo4j. It has SparQL plugin which can connect with RDF data. It supports variety of programming languages such as Java, JavaScript, Python, .Net, PHP, Scala and others.

B. Book Metadata using Goodreads

Metadata is a set of data. It tells a lot of description in web information, such as identity card, library card, and book recommendation. Goodreads is a metadata that store book data. Each datatype contains metadata which can be used to give new information. Goodreads is readable and also easily creates relationship between book metadata with user and determines if the user wants that book or not.

133.Review on organic and chemical farming and uses of smart agriculture

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

REVIEW ON ORGANIC AND CHEMICAL FARMING AND USES OF SMART AGRICULTURE

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Abstract

Present days healthy food is very important but farmers and market people are using more chemicals so that total recourses are polluted. Mainly farmers using more chemical fertilizers so that it is affected by soil, resource, human health, animals, and plants. These all are polluted due to inorganic farming. So, the main aim is to reduce chemical fertilizers for growing yields and also not use chemicals in marketing. So, that reduces diseases like Cancer, Heart attack, strokes and many other types of diseases. Improvement of organic yields is very important in that way to involve government and take initiative towards motivate the farmers to use organic fertilizers and also provide separate marketing for organic products and also encourage for government side to give more subsidies to organic farmers and also provide free certifications. This paper explained what is the difference between organic and chemical farming, the main advantages of using organic farming and how organic farming save the environment or climate. Also, discuss the Internet of things on how to use this organic farm.

Key terms: Organic ,Chemical farming, Internet of things.

1. Introduction

The comparisons between organic farming, natural farming and chemical farming are Chemical forming means using chemical fertilizers for growing yields, control pests with synthetic pestacides and control weeds are with chemical herbicides. So soil weather, natures etc., all are polluted due to chemicals and also cost is very expensive. More efforts and environment impact more so converted to organic farming. Organic farming means using organic fertilizers like compost, vermin compost, and animal manure mainly cow manure and some powders mixed with neem leaves. So it is a system which is dependent entirely on organic sources for crop nutrition and crop husbandry using organic fertile. This is low cost less effort less environment efforts compare chemical fertilizers. And another farming is natural farming means is is followed nature human not given to any inputs so zero budget it is also called zero budget natural farming. It is no cost, no efforts because nature will give. No environmental import effects so natural farming refers to framing with nature and without chemicals. To combine the organic farming and natural farming will be good, my opinion is involved more natural farming and some organic farming avoid chemical fertilizer is better.

According to the world of organic agriculture report is "In India only 30% of the total organic producer's Organic farmers in the world, but accounts for just 2.59 percent i.e. 1.5 million hectares of the total organic cultivation area of 57.8 million hectors". Indian (Vedic or Vedas) culture was depending on agriculture. It is the backbone of the India economy because this land had topsoil for at least 50 centuries and this was all due to "Vedic cows". "The roots of Indian culture were always its divine humped cows-Gomata Nandi which made the most fertile soil through its Gomay(Vedic cow dung) and Gomutra(Vedic cow urine). Sustainable agriculture should be the future of India agriculture which makes more fertile soil organically and produces huge quantity with quality, in harmony with nature, mother earth which can be done only by divine humped cows". How organic farming benefits the environment. More Benefits are there compare organic farming and chemical farming.

134.Smart Goggles for the Blind Using LBPH Face Recognizer

Smart Goggles for the Blind Using LBPH Face Recognizer

Tamiz Bharthepudy, J. Srikrishna Pradeep, A. Mohan

PDF

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Issue

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Section

Articles

Abstract

Nayan, a smart goggle induced with a voice assistant, is a thought and an execution to help the blind people so that they can become an independent individual without depending on other people. Initially, Face Detection, and Gender Recognition is applied by fixing the camera module in a suitable smart goggle to detect if there is a person in the surroundings of the blind at a particular distance to help him in finding his surroundings and as a result he can notice people easily if he knows them. Secondly, the same image extracted from face detection is used to detect other applications. Thirdly, we present an algorithm for face detection, gender recognition simultaneously and other feature extractions using Local Binary Patterns Histogram (LBPH). The proposed method is called LBPH, which uses local binary operators and is easy for detection purposes due to its computational simplicity and discriminative power. The synergy among the tasks where the individual performances are boosted is exploited. After this the result is forwarded to another network and based on the probability, we give the result in the form of speech so that blind can understand his

135. Applications in Social Mobile Analytics Cloud Integration Testing Strategy

International Journal of Advanced Science and Technology

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Applications in social mobile analytics cloud integration testing strategy(Article)

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Abstract

As the Information Technology making to step with the novel, the testing end is on hunt for a one step of plan of action for authorize individual compensation and high ROI. With kindle fast growth and combination of social media and mobiles, a blow test point of view adapting the prevailing level of light of end to end testing on social-Mobile-Analytics Cloud integration is extremely required. This wrapper suggests a tactical substructure for SMAC testing and spread out a custom technique for high ROI. © 2019 SERSC.

SciVal Topic Prominence

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Effective IT utilization and efficiency | Improving organization ability to scale on demand | Providing complete setup for enhancing the end customer experience

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136. Text extraction from hoardings by hybrid model

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ISSN: 2249 – 8958 (Online), Volume-9 Issue-4, April 2020

Text Extraction from Hoardings by Hybrid Model

D. Jayaram, J. Shiva Sai, CRK Reddy, V. Kamakshi Prasad

Abstract: *There are various techniques available to detect and extract the text from hoardings. Still it is a challenging task to detect text from images of various sizes, orientation, illumination and color. With a view to improve on these, a hybrid method of text extraction and detection is proposed. The proposed method uses a symmetry features like Mutual Magnitude Symmetry (MMS), Mutual Direction Symmetry (MDS) and Gradient Vector Symmetry (GVS) to identify text pixel candidates from natural scenes.*

The proposed method is tested on different datasets like ICDAR, CUTE 80 and also images from mobile phones. Implementation of MMS, MDS, and GVS methods on above datasets has been carried out. Text extraction from hoardings in ICDAR is giving 74% accuracy, CUTE80 is giving 76% and on mobile images 85% of accuracy is achieved.

Keywords: *MDS, MMS, GVS, edge detection, segmentation.*

I. INTRODUCTION

Content location of text from natural common scene pictures or images is a difficult assignment by the fame of various vision frameworks. The greater part of the current techniques concentrated on distinguishing level content in an image. Generally message location strategies can be delegated edge-based, associated segment based and district based techniques. Distinguish and restrict content areas with the assistance of district based strategy.

Present days, content of text data assumes a noteworthy job in numerous functions like assistive route, picture based hunt, object acknowledgment, scene understanding, and geocoding, and so on., on the grounds that it gives progressively conceptual data past various impression of different items. Be that as it may, removing content from common scene pictures must take care of testing issues like foresee the textual styles, sizes, hues, content characters and strings from a picture or image.

II. PROBLEM SPECIFICATION AND MODEL

There are various techniques available to detect and extract the text from hoardings. It is a challenging task to detect text from images of various sizes, orientation, illuminations and color. With a view to improve on these, a hybrid method of text extraction and detections proposed. The proposed method uses a symmetry features like mutual magnitude symmetry, mutual direction symmetry and gradient vector symmetry to identify text pixel candidates from natural scenes.

Existing System:

The present system can adequately identify content strings in self-assertive areas, sizes, directions, hues and slight varieties of brightening or state of connection surface. Present framework centers around free investigation of single characters. The content string structure is progressively powerful to recognize foundation obstructions from content data. It is likewise used to decide if the associated segments have a place with content characters or unforeseen clamors.

Proposed System:

In proposed structure, expanding exactness of text or content raining is a significant errand task. Accuracy (Exactness) is built by methods for on the increase robust framework dependent on the ideas of MMS, Mutual Direction Symmetry (MDS), and GVS. These properties used to distinguish content pixel up-and-corners from common scene pictures which contain bends, circles, circular segment shapes etc., Proposed strategy works dependent on the way that info pictures contains content examples in both Sober and Canny edge identification techniques put on displays a comparable performance.

For every content pixel up-and-corners decide if the associated parts have a place with content characters or unforeseen clamors. Chiefly we concentrated on bended content to separate the content segments dependent on a closest neighbor measure. Right now heading and spatial investigation of pixel appropriation of parts used to sift through non-content segments in the picture. The proposed technique utilized ICDAR 2005 and ICDAR 2011datasets for level content assessment and CUTE 80 dataset for bended content assessment to show its adequacy and prevalence over other existing strategies. Figure1 is the square chart of the cross breed strategy, this technique accepts pictures with various foundations as the information and afterward extricates content from the info picture.

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137.Taxi Demand Prediction System Using Machine Learning

Taxi Demand Prediction System Using Machine Learning

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Abstract— Imbalance of availability of taxis is a big problem in Big cities. Sometimes, customers need to wait too long for the taxis or sometimes taxi drivers can't find the customers easily. Such problems can be resolved by informed driving, which is a key feature for increasing sustainability for taxi companies. Our paper mainly deals with predicting the demand of cabs in specific areas using Machine Learning algorithms based on climate ,location ,time of day,and other parameters which affect the imbalance in waiting time for customers. We are allowing users to use our prediction model on a web based platform. The user needs to specify the input of various parameters asked by the model like climate,time of day,location etc and the model attempts to predict the number of cabs needed to be distributed to that specific location based on the past data.

Keywords— Linear regression, XGBoost, ARIMA

I. INTRODUCTION

The taxicabs of New York City are widely recognized icons of the city and come in two variations: yellow and green. Exploiting an understanding of taxi supply and demand could increase the efficiency of the city's taxi system. In New York city, people use taxis at a frequency much higher than any other cities in the US. Instead of booking a taxi by phone one day ahead of time, New York taxi drivers pick up passengers on the street. The ability to predict taxi ridership could present valuable insights to city planners and taxi dispatchers in answering questions such as how to position cabs where they are most needed, how many taxis to dispatch, and how ridership varies over time. We are focusing on predicting the number of taxi pickups given a one-hour time window and a location within New York city. Taxi service is imbalanced. While in some area's passengers experience long waits for a taxi, in others, many taxis roam without passengers. This imbalance leads to profit loss for taxi companies, since vehicles are vacant even when there is demand. Besides, it reduces the level of the passenger satisfaction due to long wait times.The ability to predict taxi demand can help address the taxi-service imbalance problem. Knowledge of where a taxi should be traveling can bring benefits to both taxi drivers and companies: taxi drivers can drive to high taxi demand areas, and taxi companies (e.g. Uber) may reallocate their vehicles in advance to meet the passenger demand.

The taxi service is an important transportation mode in urban areas. Unlike other ride sharing services like Uber where users hire a ride in advance via Internet applications, taxicabs are usually requested by pedestrians in a more spontaneous manner, which makes taxi behavior much more unpredictable. Several solutions have been proposed from many different disciplines so as to improve the quality of service and the efficiency of urban taxi rides. In that sense, a foremost course of action within the mobility data mining field has focused on predicting the taxi demand in different areas within a city. This way, it is possible to inform taxi operators in advance and maximize the amount of time that those vehicles are empty.

Rest of paper is organized as follows: Section 2 describes the related work in this area. Section 3 describes proposed algorithm in details and section 4 and 5 describes implementation details and experimental results Finally a conclusion of the work is given in section 6.

II. RELATED WORKS

One early implementation was available on taxi demand prediction problems for Beijing city in China. They used deep neural networks to implement it. Initially they tried with different algorithms but finally they ended up with DMVST-Net model which has given an accuracy of around 87%.they have used a large-scale online taxi request dataset collected from Didi Chuxing, which is one of the largest online car- hailing companies in China. The dataset contains taxi requests from 02/01/2017 to 05/26/2017 for the city of Guangzhou. There are 20 × 20 regions in their data.

IOT FUNCTIONAL VIEW AND FUTURE CHALLENGES FOR IOT

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ABSTRACT

It‘s time that we start building IOT systems, and provide value to our customers. The IoT is expected to connect 28 billion –things| to the internet by 2020, ranging from wearable devices such as smart watches to automobiles, appliances, and industrial equipment. As it has significantly expanded in recent years, it is fundamental to study this trending technology in detail and take a close look at its applications in the different domains. It represents an enabler of new communication possibilities between people and things. The main asset of this concept is its significant influence through the creation of a new world dimension. The key features required for employing a large-scale IoT are low-cost sensors, high-speed and error-tolerant data communications, smart computations, and numerous applications. This paper provides the detailed information about IoT functional view and future challenges for IoT.

Index Terms: IoT, challenges, IP

I. INTRODUCTION

Imagine a world where billions of objects can sense, communicate and share information, all interconnected over public or private Internet Protocol (IP) networks. These interconnected objects have data regularly collected, analyzed and used to initiate action, providing a wealth of intelligence for planning, management and decision making. This is the world of the Internet of Things (IOT).

Internet of things common definition is defining as: Internet of things (IOT) is a network of physical objects. The internet is not only a network of computers, but it has evolved into a network of device of all type and sizes , vehicles, smart phones, home appliances, toys, cameras, medical instruments and industrial systems, animals, people, buildings, all connected ,all communicating & sharing information based on stipulated protocols in order to achieve smart reorganizations, positioning, tracing, safe & control & even personal real time online monitoring , online upgrade, process control & administration.

We define IOT into three categories as below:

Internet of things is an internet of three things: (1). People to people, (2) People to machine /things, (3) Things /machine to things /machine, Interacting through internet.
Internet of Things Vision: Internet of Things (IoT) is a concept and a paradigm that considers pervasive presence in the environment of a variety of things/objects that through wireless and wired connections and unique addressing schemes are able to interact with each other and cooperate with other things/objects to create new applications/services and reach common goals. In this context the research and development challenges to create a smart world are enormous. A world where the real, digital and the virtual are converging to create smart environments that make energy, transport, cities and many other areas more intelligent.

INTERNET OF THINGS - AN EMERGING PLATFORM FOR INNOVATION

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ABSTRACT

Internet of Things (IoT) is a concept and a paradigm that considers pervasive presence in the environment of a variety of things/objects that through wireless and wired connections and unique addressing schemes are able to interact with each other and cooperate with other things/objects to create new applications/services and reach common goals. In this context the research and development challenges to create a smart world are enormous. A world where the real, digital and the virtual are converging to create smart environments that make energy, transport, cities and many other areas more intelligent. This paper aims to provide the IoT towards an emerging platform for innovation.

Index Terms: IoT, innovation, emerging platforms

I. INTRODUCTION

Internet of things (IoT) is a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies.

With the Internet of Things the communication is extended via Internet to all the things that surround us. The Internet of Things is much more than machine to machine communication, wireless sensor networks, sensor networks, 2G/3G/4G,GSM, GPRS, RFID, WI-FI, GPS, microcontroller, microprocessor etc. These are considered as being the enabling technologies that make "Internet of Things" applications possible.

Enabling technologies for the Internet of Things are considered in [1] and can be grouped into three categories: (1) technologies that enable "things" to acquire contextual information, (2) technologies that enable "things" to process contextual information, and (3) technologies to improve security and privacy. The first two categories can be jointly understood as functional building blocks required building "intelligence" into "things", which are indeed the features that differentiate the IoT from the usual Internet. The third category is not a functional but rather a de facto requirement, without which the penetration of the IoT would be severely reduced.

The Internet of Things is not a single technology, but it is a mixture of different hardware & software technology. The Internet of Things provides solutions based on the integration of information technology, which refers to hardware and software used to store, retrieve, and process data and communications technology which includes electronic systems used for communication between individuals or groups. There is a heterogeneous mix of communication technologies, which need to be adapted in order to address the needs of IoT applications such as energy efficiency, speed, security, and reliability. In this context, it is possible that the level of diversity will be scaled to a number a manageable connectivity technologies that address the needs of the IoT applications, are adopted by the market, they have already proved to be serviceable, supported by a strong technology alliance. Examples of standards in

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A MACHINE LEARNING BASED APPLICATION TO IDENTIFY GENDER IN IMAGES

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ABSTRACT: In this Work, we have used Python, Deep Learning on Adience data set to accurately identify the gender and age of a person from a single image of one or more faces. We implemented a CNN to detect gender and age from a single picture of a face. The predicted gender may be one of 'Male' or 'Female', and the predicted age maybe one of the following ranges- (0 – 2), (4 – 6), (8 – 12), (15 – 20), (25 – 32), (38 – 43), (48 – 53), (60 – 100). Thus, the age prediction network has 8 nodes in the final softmax layer indicating the mentioned age ranges. It is very difficult to accurately guess an exact age from a single image because of factors like makeup, lighting, obstructions, and facial expressions. And so, we make this a classification problem instead of making it one of regression. This work can be helpful in many real time applications like smarter advertising, to prevent crime, to find missing persons, and also in beauty industry. This Work is based on convolution neural network and this Work is executed by using OpenCV.

Keywords: *Deep Learning, CNN, Python, softmax, OpenCV*

I. Introduction

1.1 Motivation

Age and Gender detection is a python Work in which we have used deep learning on Adience dataset. We have framed Gender Prediction as a classification problem. The output layer in the gender prediction network is of type softmax with 2 nodes indicating the two classes "Male" and "Female". Ideally, Age Prediction should be approached as a Regression problem since we are expecting a real number as the output. However, estimating age accurately using regression is challenging. Even humans cannot accurately predict the age based on looking at a person. However, we have an idea of whether they are in their 20s or in their 30s. Because of this reason, it is wise to frame this problem as a classification problem where we try to estimate the age group the person. For example, age in the range of 0-2 is a single class; 4-6 is another class and so on. The Adience dataset has 8 classes divided into the following age groups [(0 – 2), (4 – 6), (8 – 12), (15 – 20), (25 – 32), (38 – 43), (48 – 53), (60 – 100)]. Thus, the age prediction network has 8 nodes in the final softmax layer indicating the mentioned age ranges.

1.2 Objective of the Work

This study intends to develop a model for age and gender detection. The objectives of the Work are mainly to detect faces, classify into male/female, classify into one of the 8 age ranges then put the results in image and then display it.

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ANALYZING RESPONSES ON ONLINE DEVELOPER COMMUNITY: A CASE STUDY

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Abstract: In recent years Stack Overflow has been criticized by various users on and off social media for being unwelcoming to new users. In fact, Stack Overflow also recognizes that this is a serious problem since they are losing old contributors and the criticism and widespread negative attitudes on the website. Because the website makes its data available online, we were able to form hypotheses and analyze the issue. We suspect that the hostile attitudes towards new users could be correlated with the maturity of scripting and programming languages or frameworks. Our work analyzes the developer community of Stack Overflow through the lens of users and languages heterogeneities. Students and young professionals would find the results useful when they decide which programming language to learn and how to get involved in the community wisely. Stack Overflow administors could adopt our algorithms to build the real-time dashboard to track the trends of the languages and provide data-driven insights for the developers

Index Terms **– Stack Overflow, Exploratory Analysis, Scripting Languages**

I. INTRODUCTION

The first section discusses the background of the project and the research hypothesis. The second section documents our data set and methods for preprocessing. The third section discusses our exploratory analysis. The fourth section details the main analysis which provides an answer to our research hypothesis. The final section provides a high level summary of our project. The extrapolated runtimes and discussion of challenges are included in each section or task where applicable.

1.1 Hypothesis

We question if answer providers on Stack Overflow become more impatient and meaner as scripting and programming languages or frameworks become more mature and popular. However, we need a reliable measurement of "impatience" or "hostile attitudes." Thus, we refined our question as follows: as programming languages mature, have sentiments of the answers become more negative? We hypothesize that as scripting and programming languages or frameworks become more mature and popular, the sentiments of Stack Overflow answer providers become more negative.

1.2 Testing

1. To test our hypothesis, we employ the following procedures:
2. We processed the data set so that it is in the form that is appropriate for our method of analysis.
3. We did an exploratory analysis on the top 15 scripting and programming languages or Frameworks based on their popularity
4. We then cross-checked the list with the scripting and programming languages or frameworks that are relevant to the class.
5. We conducted other relevant exploratory analysis to gain more understanding about users, Questions, and answer providers.
6. We conducted the main analysis.

BUILDING CORONA VIRUS AWARENESS BOT USING MACHINE LEARNING APIs

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Abstract: A chatbot is an intelligent piece of software that is capable of communicating and performing actions similar to human. Chat bots are used a lot in customer interaction, marketing on social networking sites and instantly messaging the client. Chat bots are an essential part of business. Many businesses have to offer services to their customers and it needs a lot of manpower, time and effort to handle customers. The chat bots can automate most of the customer interaction by answering some of the frequent questions that are asked by the customers using machine learning techniques [CNN]. There are mainly two types of chat bots: Domain specific and open domain chat bots. The domain-specific chatbot is used to solve a particular problem. So, you need to customize it smartly to work effectively in your domain. The Open-domain chat bots can be asked any type of questions, so it requires huge amounts of data to train.

Keywords: *chatbot, CNN, Messaging, communication*

I. INTRODUCTION

1.1 Motivation

Chatbots have been a natural choice for disseminating health information during the coronavirus crisis. Advances in Natural Language Processing (NLP) [1] have enabled conversational AI technologies and widened their reach, leading to tools such as Siri, Alexa, and Google Home that are part of many consumers' everyday lives. The intuitive interface of chatbots presents a low-friction approach to disseminate critical information to vast populations. And Chatbots, like websites, are available 24/7. This application is useful in displaying answers to the queries related to covid-19 asked by the user and also reducing the burden on Hospital call centres and doctor.

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A Conceptual Model of Hybrid Recommender using Big Data and Machine Learning Approach

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ABSTRACT

An exponential growth in tourism data had recorded online in the past decade due to the recent developments of web technologies and communication means. At the same time, the information overload incurred on web search engines challenges the quality of recommendations to the users although various recommenders have been developed. The main objective of these recommenders is to attract the tourists in turn promote tourism by means of advanced artificial intelligence and big data technologies. In this paper, a conceptual model is proposed for hybrid recommendation system for tourism data that considers the tourist preferences. Hybrid recommender system is the combination of the content based and collaborative filtering recommenders, which absorbs the benefits of both approaches and leads to the quality recommendations. For this, a deep learning model is developed to study the patterns in the tourism data and recommends the based on the tourist profile.

Keywords : Recommender Systems, User Profiling, Content-Based Filtering, Collaborative Filtering, Hybrid Recommender System; E-Tourism

I. INTRODUCTION

E-tourism is the field that attracted many users by means of recommending appropriate plans for trips and providing useful information through information retrieval technologies [1-5]. The basic input for this is the user profile which is ranked collection of the predicted interests of the user over a period of time [6, 7]. The traditional recommender systems consider the numeric data as key input, which are populated by the ratings given by set of users over set of products as shown in figure 1. The content based approach built the preferences using the past evaluations of the user whereas collaborative filtering approach uses the past evaluations of the other similar users with same kind of preferences [8]. The history of user profiles and what items they like, user's interactions with the items by either purchasing them or spending substantial time with the items play important role in predictions done by the system. Collaborative filtering suffers from data sparsity due to lack of enough rated data from past user interactions, either because many users do not express their preferences, for example through rating or liking an item, or because the users are new and have not interacted with the items before.

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Object Detector for Visually Impaired with Distance Calculation for Humans

Eliganti Ramalakshmi, Dixitha Kasturi, Gouthami V

Abstract: ***Object detection is a computer vision technique for locating instances of objects in videos. When we as humans look at images or videos, we can recognize and locate objects within a matter of moments. The main goal of this project is to clone the intelligence of humans in doing that using Deep Neural Networks and IOT, Raspberry Pi and a camera. This model could be used for visually disabled people for improved navigation and crash free motion. When we consider real time scenarios, numerous objects come into a single frame. To identify different items simultaneously as they are captured, a strong model needs to be developed. YOLO (You Only Look Once) is a clever convolutional neural network (CNN) that helps in reaching that objective. The algorithm applies a single neural network to the full image, and then divides the image into regions and predicts bounding boxes and probabilities for each region. The bounding boxes are nothing but weighted by the predicted probabilities. The second objective of this model is to calculate distance of humans from the camera, to achieve that haar classifier is created and used. This classifier also helps in enhancing human detection along with distance calculation. Haar is just like a kernel in CNN where the kernel values are determined by training while in Haar they are determined manually. Whenever a person is detected by both YOLO and Haar classifier, a formula which considers height and width of human contours is applied to calculate the distance of it from the camera. As the objects are identified they will be read out using a text-to-speech engine known as gTTS(google text-to-speech) and ,which stores the text in an mp3 file. The package known as Pygame will load and play the mp3 file dynamically as the objects are detected. This developed Deep Learning model is integrated with Raspberry Pi using OpenCV. Though this project is primarily developed to aid visually disabled people, it can have various other applications such as, self-driving cars, video surveillance, pedestrian detection, face detection.***

Keywords **: *Deep learning, IOT,YOLO.***

I. INTRODUCTION

With the world moving towards automation, there's a rising demand for an efficient Obstacle (Object) detector [1], [2], [7]. There are no low cost object detectors available which are efficient and most of the available obstacle detectors use ultrasonic sensor which doesn't take a broader frame into its line of sight. This project focuses on integrating Deep learning algorithms with Raspberry Pi and Camera to detect the type of object and its distance efficiently.

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The human visual system is fast and accurate and can perform complex tasks like identifying multiple objects and detect obstacles [9]. With the availability of huge amounts of data, faster GPUs, and better algorithms, computers can now be trained to detect and classify multiple objects within an image with high accuracy [10].In this project we will explore Object detection and localization using convolutional networks and integrate it with Raspberry Pi and camera. A raspberry pi board with camera and speaker will be used to detect the obstacle and alert the user by reading out the distance and type of obstacle/object in the path of motion. Machine Learning algorithm will be used to train the system. The underlying algorithm is CNN(Convolutional Neural Network) [16]. The model will be trained to identify the type of object and calculate the approximate, if not exact, distance of the humans from the camera. Once the object is detected, the type of object and the distance only for humans will be read out using a speaker

II. DATASET

COCO data set is considered for object detection. It is a large-scale object detection, segmentation, and captioning dataset. It contains images and bounding boxes for the objects in the images. Compared to the previous version it uses different train/val/test splits . In general 91 classes are defined by COCO by only 80 are used.

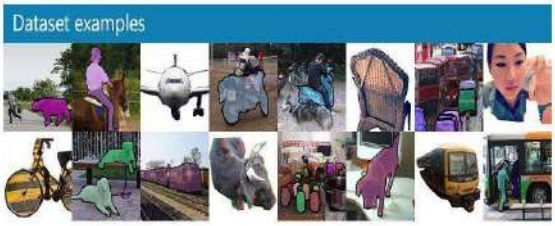

Fig 1. Dataset Representation [21]

III. METHODOLOGY

As shown in Fig 2 the phases of the proposed system design are described as follows :
Phase 1*:* The raspberry pi camera captures the input video live to detect objects in real time.
Phase 2*:* The video captured is broken down into frames and the model trained extracts specific features from the frames.
Phase 3: The boundary boxes are drawn and object proposals are generated [1].

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An Efficient Text Image Elimination App for Android

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Abstract*: Smartphone sales are at an all-time high with the ever increasing use of smartphones, we have access to data like never before. But with information that vast, we often get suffocated by the images that clutter our devices, making it that much harder to get to the pictures that matter to us. With the power of Machine Learning and image processing, this Text Image Elimination App will free your device from all the clutter and make your life easier. The application removes the images they may not want on their phone. Images containing text will be processed and the text extracted from the images will be compared to a list of texts given by the user and if there is any instance of the text in the image it will automatically be deleted. This paper proposes an efficient android application where the user can optimize the storage space by eliminating the images of his interest based on text matching without directly going in to the directory.

Keywords *: Android, text image.*

I. INTRODUCTION

Text Image Elimination is an Android application developed in Android Studio. This app searches the images in your phone and deletes the images containing text which is blacklisted. By using this application users can save storage in their phone and prevent spam images that are forwarded in WhatsApp groups. This paper focuses to remove the unnecessary images such as reposts in major WhatsApp groups containing unwanted text and optimize the storage space in the device.

II. PROPOSED FRAMEWORK

This journal uses double-blind review process, which means that both the reviewer (s) and author (s) identities concealed from the reviewers, and vice versa, throughout the review process. All submitted manuscripts are reviewed by three reviewer one from India and rest two from overseas. There should be proper comments of the reviewers for the purpose of acceptance/ rejection. There should be minimum 01 to 02 week time window for it.

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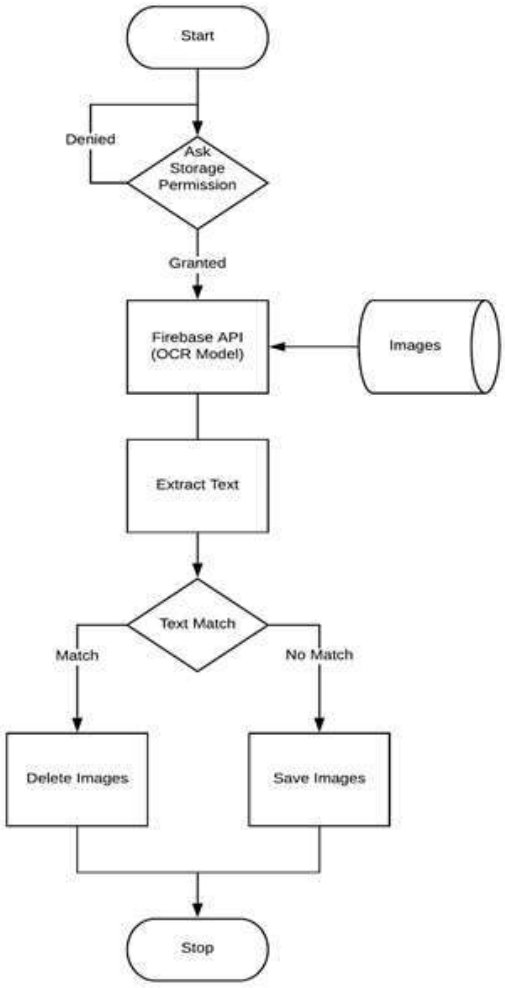

Fig. 1: Text Image Elimination working process

III. APPROACH

Optical Character Recognition or OCR is a conversion tool used to convert images containing typed text, written or printed text into computer encoded text. One of the earliest addressed computer vision tasks is optical character recognition. Matrix matching is one of the techniques of OCR that involves comparing an image to a stored glyph ,pixel-by-pixel. Once the input glyph is correctly isolated from the rest of the image, it is compared with all the stored glyphs and matched with the one that it shares most similarities with.

Water quality monitoring and Water pipe Leakage Detection

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***Abstract*— Water quality monitoring is one of the important aspects which are used to save people from diseases as water is one of the basic resources for human beings. This paper discusses about an IoT application, developed to check quality of water, water level detection and water pipe leakage using IoT technology. Water quality can be measured by using Temperature, pH and Turbidity sensors. In this application these three aspects are considered for quality measurement. Nowadays water is pumped from ground storage to fill the overhead tank. It becomes a hectic task to always go and check the level of water in the tank. This may sometimes lead to wastage of water due to overflow and even consumes more electricity. This issue can be solved by indicating water level in the tank and sending notification to the specified person. Water Pipe Leakage is another important issue to avoid wastage of water. There are many techniques to detect water pipe leakage. In this paper we implemented a new technique based on rate of flow of water. When leakage is detected a notification is sent to concerned person that helps in saving water and electrical consumption. Results are published in cloud. Data is Analyzed using R tool.**

Keywords: Arduino UNO, IoT, Embedded C, GSM, Thing speak, R tool.

I. INTRODUCTION

IoT is a new revolution in communication technology by which everything connected to other things and exchange information [14][15]. This requires no human involvement. Internet of Things is the interconnection of physical objects with electronics embedded within their architecture to communicate and sense interactions amongst each other and with the external environment.

Water is an important resource for all the living things on the earth. It is necessary to avoid the wastage of water during the distribution period. In the previous method, the employee will go to that place and check whether tank is full or not. The proposed system is fully automated. Here human work and time are saved. To ensure the safe supply of drinking water the quality should be monitored in real time for that purpose IoT based water quality monitoring systems were proposed[16][17]. This system consists of some sensors which measure the water quality parameter. Water pollution is one of these problems. Many parameters like CO2, NO2, oxygen, Carbide levels etc cause pollution of water. Generally to detect these parameters, samples are manually collected and then send them to laboratory for analyzing. This method wastes too much man power and material resource [18].

Sensors play major role to solve these problems. Sensor is an ideal detecting device which converts no power information into electrical signals. Sensors can easily transfer process, transform and control signals. There are many advantages with these sensors like good selectivity, high, fast response speed and so on. So sensors are used to measure these values. The core controller processes the measured values from the sensors. Finally, the output data is displayed on the serial monitor and also an alert message is sent through the GSM module.

There are various ways through which water get wasted. Different situations like water overflows when tank get full. Also, leakage is another concern i.e., whenever there is leakage somewhere we couldn't get it in initial stage but when it becomes a huge problem causes large wastage of water.

II. RELATED WORK

Water Level and Leakage Detection System with its Quality Analysis based on Sensor for Home Application [9] [10]. The proposed system which indicate user about the level of water in tank makes use of microcontroller and notification is given through mobile network to the mobile. Water quality is measured, if it is less than or more than normal values then notification is sent to user as SMS. Leakage detection takes place by using the pressure sensors which detects the pressure of flow of water. If there is a low pressure then it notifies the user by calling on mobile similar to water level detector notification. So that water and electrical consumption can be saved.

IoT Based Water Management System for Smart City [19], An IoT design for water monitoring [13] and control approach [3] which supports internet based data collection on real time bases is presented. These types of systems address new challenges in the water sector flow rate measuring. There is a need for a study

Indian Sign Board Detection and Recognition for Driving Assistance

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Abstract: *It is necessary to bring traffic sign detection for autonomous vehicles onto our roads. Also, simultaneous traffic sign detection and recognition is certainly a very challenging task. Although traffic sign detection and recognition is a fairly archaic field of research, only a few works exist in literature that performs simultaneous detection and recognition using a dataset of realistic real world images. Existing traffic sign detection algorithms perform the task, but mostly lack realistic road conditions. The main focus in this paper is to detect traffic signs under challenging conditions using a novel dataset that contains a variety of road conditions. The traffic signs in the video are detected using shape filtering techniques. The classification module present determines the type of detected road signs by using Neural networks.*

Keywords: *Traffic sign, Filtering, Sign board Detection, Recognition, Neural Networks.*

1. Introduction

Road sign recognition is a task just from the beginning of automation by the means of computer vision. With the help of this system, there are a wide range of applications, starting from traffic control, as well as parking management and public security. Being already subject to commercial many applications, recognition systems continued to be an interesting topic for researchers. In all cases mentioned above, one deals with a series of problems, mainly consisting of: requirement for real time processing; various illumination conditions in motion vehicles; and signs belonging to other states. Road safety is one of the most crucial issues in modern society.'Human Factor' is the one of the factors which is directly related to Safety issues.In attention of Driver and pedestrian is one of the main causes of road accidents. The scrutiny of traffic signs and markings on roads play an important role in active driver assistance systems (ADAS) and control systems for autonomous vehicles.Multiple computer vision systems have been established to analyze the traffic signs. But the characteristics of existing algorithms (recognition accuracy, quantity of errors) are not adequate to rule out a human operator. Main challenge of the computer vision system used in traffic sign detection

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VIDEO DATA INTEGRITY USING CRYPTOCURRENCY

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Abstract - Nowadays video content is being viewed by millions of people via social media platform. Sometimes media companies even use the video data for traditional broadcast, despite the fact that there is little or no source verification. People and news agencies are using media content to drive their own agenda and these videos may be manipulated or taken out of their original context without the viewer's knowledge. Therefore, it is of great interest to develop a System that distinguishes between the modified content and the original content efficiently. There is an importance to verify the integrity of video files for consumers and various business applications.

Generally, the video file is uncompressed and sent as frames, these frames may reconstruct the original video. With the help of encryption algorithms video data can be compressed as hashed blocks between peer-to-peer using bit coin networks in blockchain technology. Measuring the similarity between the decrypted hash values, original frame yields the truthfulness of video.

Key Words: Video data, Bitcoin network, Blockchain, Tampering, Integrity of data.

1. INTRODUCTION

The need to verify the integrity of the data differs between different organizations. Social media platforms are presenting live videos on their platform with a very low (if any) level of verification, often next to paid content and advertising. Proving the integrity of data has become more and more important.

The blockchain has implications not only in the crypto currencies, it has implications in many domains where a trustless, anonymous, and tamperproof means of recordkeeping is required. The decentralized and collaboratively maintained ledger technology of the blockchain of crypto currencies, such as Bitcoin (Nakamoto, 2008), represents a seminal contribution to Information Technology.

1.1 Video Stream

A video stream considered as a combination of audio and video, only video, or video and other content, depending on the format. A camera yields uncompressed video at a constant data rate. The data rate for uncompressed video is fixed and given as the frame rate multiplied by the

video resolution, and the color depth. Compression of video tries to minimize the data rate in order to transmit the data within a given constrained channel or to reduce the time it takes to transfer the compressed data. Compression can be done using lossless or lossy techniques. The lossless compression compresses the data without the loss of information. The lossy compression encodes the data by removal of some information in order to minimize or bound the resulting data rate or required storage space.

Uncompressed data from the camera is encoded and compressed using video encoding formats (such as AVC [2], HEVC [3], VP8 [4], VP9, etc.), often in combination with audio encoding formats (MP3 R. [6], AAC [7], Opus [8], etc.). Container formats (such as AVI [9], QTFF [10], [11], mp4 [2], etc.) combines the audio and video together with additional related files and optional features (header files, chapters, subtitles, etc.), and creates one single file. Feature extraction from a video can be done frame by frame, using short video sequences, or entire video files. The signed hashed should be done on video segments or frame by frame. Furthermore, the time to compute the hash needs to be taken into consideration when generating the signed hashes.

1.2 Video Coding

Advanced Video Coding (AVC) or simply H.264 is a standard encoding format for video from the Moving Picture Experts Group (MPEG). It is one of the best collective video encoding formats for recording, compression, and streaming. H.264 encoded videos are constructed from chunks of frames called a Group of Pictures (GOP). These GOPs consists of three different frame types: 1.Intra-frame (I-Frame), 2.Predicted-frame (P-Frame), 3. Bidirectional-frame (B-Frame).

A full image by itself can be constructed by an I-frame. P-frame customs the information from a previous frame together with new information in order to construct the full image. A B-frame as the name implies takes information from both the preceding frame and the upcoming frame to construct a full image. Concretely, this means that I-frames have little or no compression difference from a normal compressed still image. A P-frame scan further compresses the data by predicting the content when constructing the image. And lastly, B-frames can compress the data even further by having

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Ensemble Based Hybrid Recommender Systems

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Abstract: ***In the past few years, the advent of computational and prediction technologies has spurred a lot of interest in recommendation research. Content-based recommendation and collaborative filtering are two elementary ways to build recommendation systems. In a content based recommender system, products are described using keywords and a user profile is developed to enlist the type of products the user may like. Widely used Collaborative filtering recommender systems provide recommendations based on similar user preferences. Hybrid recommender systems are a blend of content-based and collaborative techniques to harness their advantages to maximum. Although both these methods have their own advantages, they fail in 'cold start' situations where new users or products are introduced to the system, and the system fails to recommend new products as there is no usage history available for these products. In this work we work on MovieLens 100k dataset to recommend movies based on the user preferences. This paper proposes a weighted average method for combining predictions to improve the accuracy of hybrid models. We used standard error as a measure to assign the weights to the classifiers to approximate their participation in predicting the recommendations. The cold start problem is addressed by including demographic data of the user by using three approaches namely Latent Vector Method, Bayesian Weighted Average, and Nearest Neighbor Algorithm.***

Keywords: ***Bayesian Weighted Average, Cold start, Hybrid recommender system, Ensemble hybrid models, Latent Vector method, Nearest Neighbor Algorithm***

I. INTRODUCTION

With technology taking leaps and bounds in every field the amount of data being generated has crossed several limits. By using elaborate systems that exist, this humongous data can be used to help users and organizations make meaningful and informed decisions. Recommender Systems are the tools which come into play in this arena. By analyzing the data present, such as the types of products purchased over a period of time, behavior patterns of consumers, genres of movies and shows watched, the recommender systems present new products to the user which he is most likely to be interested in.

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Traditional approaches use the content-based methods which recommend products based on the product content and an individual users profile. The content of each product is drawn from a descriptor set which describes the products.

The content-based methods give exceptional results because the probability of a user to like a product which is very similar to other products he likes is relatively high. The only drawback is that in case of a scenario where the user has just entered the scene and there are no products he has liked or purchased, it is almost impossible for the system to recommend, this is called the cold start problem from the user scenario. In this work we aim to address the user cold start through three techniques.

Another approach is the collaborative filtering where in the recommendations are made by using the recommendations made to other people. It works on the principle that if there are two people who have similar tastes, the products liked by one will most probably be liked by the other person, this is also gives it the name- Social Filtering. The catch here is that if there is a new product that hasn't been bought or reviewed yet, it takes some time for the machine to recommend it to the prospective users, this is called as the product cold start.

To combine the benefits of both and also to overcome individual drawbacks Hybrid Recommendation Systems have taken over now, which are a blend of the collaborative and content-based recommender approaches and definitely outperform the individual fundamental methods respectively. In this work we discuss a weighted approach which is applied to a combination of three different prediction algorithms and their results are compared.

A. Objective

The objective of this project is to increase the accuracy of hybrid recommender systems by performing comparisons between a linear combination and a weighted combination of the best performing algorithms like SVD, NMF and KNN by using different error measures and as well as address the cold start problem by using demographic information of users with the help of three approaches- Latent Vector Method, Nearest Neighbor Approach and Bayesian Weighted Average.

B. Organization of the Paper

The paper is structured as follows: Section II deals with the previous work that has been carried out in this area. Section III highlights the dataset being used. Section IV focuses on the methodology that is applied and used in the aforementioned approaches. Section V gives an insight into the testing and results followed by Section VI which gives the conclusions and Section VII which gives the future scope.

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A Fuzzy Logic Controller for Estimation of Proof stress in GMAW Process

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Abstract: Fuzzy logic controller (FLC) is well suited where there is a considerable amount of uncertainty in the process. The material properties of a weldment in Gas Metal Arc welding (GMAW) depend on welding parameters like shielding gas pressure, current, torch angle, electrode size, electrode projection , arc length, feed of electrode wire etc. It is also influenced by the joint parameters like groove angle, land, root gap, preheating temperature. But a lot of noise parameters like variation of base material properties, variation in quality of inert gas used, variation in ambient conditions, variation in workman ship etc introduce the uncertainty into the process. To deal with such uncertainties an FLC is designed and validated. In the current work, four parameters namely inert gas pressure, current, groove angle of the joint and preheating temperature of base metal are considered as input parameters and the effect of these parameters on the percentage of elongation which is a measure of ductility is studied. Three linguistic terms are used for each parameter. To minimise the no. of experiments in designing data base an L-9 orthogonal array is chosen for experimentation. GMAW welding is carried and data base with 9 rules are formulated. Triangular membership function is selected for the input and out variables and FLC is designed. The FLC is validated with 5 more experiments. Mamdani approach is used to develop the Fuzzy controller.

Key words: Orthogonal array, Fuzzy logic controller, GMAW, Triangular function, Mamdani approach, crisp value, Membership function.

I Introduction

A fuzzy logic controller is described by a set of rules of type IF (condition) THEN (action) to convert the language control strategy acquired from a human expert into a well-adapted automatic control strategy [1]. Fuzzilogic controllers are extensively used in many engineering application [2-6]

Al-65032 is a precipitation hardening aluminium alloy that and one of the most common alloys of aluminium for general purpose use. Aluminium alloys are difficult to weld materials. Gas Metal Arc Welding is extensively used for welding aluminium alloys. GMAW process is influenced by number of parameters individually and combinedly with a high complexity of interactions. The complex interaction of the parameters result into a wide variation in the weldment properties, geometry, and metallurgical features.

II. input Parameter selection

The input variable selected is pressure current groove angle and preheating. Three linguistic terms for the FLC design, are selected for each parameter; Low, Medium and High. For 4 parameters with 3 linguistic terms, the size of the rule base is 4^3. i.e 64. So a minimum of 64 experiments are to be conducted for developing the rule base which involves a huge cost and time. So for reducing the no. of experiments an orthogonal array L-9 is selected for experimentation. Experiments conducted with the Taguchi Orthogonal arrays will give the reasonably accurate results even in partial factorial case. So in the current work the validity of this hypothesis is tested.

Table 1: The input variables

S.No	Input Parameter	Level 1	Level 2	Level 3
1.	Pressure (KPa)	90	104	125
2.	Current (Amps)	220	230	245
3.	Groove angle (Deg)	45	60	70
4.	Pre-heating (^{O}C)	125	150	175

The three levels of the parameters selected after preliminary experiments are given in table 1. With four parameters and three levels Orthogonal array L9 was selected for the experimentation and the levels of the parameters shown in table 1 are assigned to the OA and presented in table 2.

III. Experimentation

Standard test pieces with dimensions 150mm X 150mm X 6mm are cut from the Al-65032 alloy sheet are prepared with an a saw machine. The plates are grooved to the desired angle on a milling machine. The milled pieces were engraved with a specific number for

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SMART SECURITY LOCK SYSTEM WITH INTRUSION DETECTION AND FACIAL RECOGNITION

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ABSTRACT:

Smart security system has become indispensable in modern daily life. The proposed security system will be developed to prevent robbery in highly secure areas like home and working environment with lesser power consumption and more reliable standalone security device for both Intruder detection and for door security. The door access control is implemented by using face recognition technology, which grants access to only authorized people to enter that area. The face recognition and detection process will be implemented and instead of using sensor devices intruder detection is achieved by performing image processing on captured frames of data, and calculating the difference between the previously captured frames with the running frames in terms of pixels in the captured frames.

Keywords: face recognition, Intrusion detection, IOT Based Door Access Control Smart security system

[1].INTRODUCTION

Privacy and Security are two universal rights and, to ensure that in our daily life we are secure, a lot of research is going on in the field of home security, and IoT is the turning point for the industry, where we connect everyday objects to share data for our betterment. House security matters and people always try to make life easier at the same time.In today's world of connectivity and smart devices there is an urgent need to modify our existing day to day objects

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SMART BUS TRACKING SYSTEM FOR VISUALLY IMPAIRED PEOPLE USING IOT

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ABSTRACT:

Talking signs, guide cane, echolocations are all useful in navigating the visually challenged people to reach their destination, but the main objective is not reached that it fails to join them with real time traffic. The basic principle is to create a wearable system that acquires information from the context in which the user requires to have smart devices which is transmitting information in a way that it is understandable for blind people. This project aims in providing the alert services which gives the real time tracking experience of the public transport buses. The buses will be having RFID tags within them and RFID readers will be placed in every bus stop. Arduino serves as the central controller for this system. The inputs from RFID readers are continuously updated to Arduino for processing the data. The processed data is sent to the raspberry pi for the voice output using the audio jack. This project is also aimed at helping the elder people for independent navigation.

Keywords: ARM controller, RFID reader ,Smart bus alert system, wireless sensor networks

[1] INTRODUCTION

The main aim of this project is to implement a system to help blind people to travel smoothly and independently from one place to another by providing a device which can help them to know which bus is coming on bus stop. In this project we have microcontroller, RFID reader and voice IC for voice announcement with speaker as basic blocks. Whenever the bus come to stop the RFID reader will be reading the tag (which is given to every bus for particular route) and depending upon the tag it will give voice intimation by using speaker the blind person can know the bus number.

Society works essentially through the smooth trade of merchandise, administrations, and brotherhood. Be that as it may, data and assets are made most promptly accessible to the eye.

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DESIGN OF AN FLC USING MAMDANI APPROACH FOR THE ESTIMATION OF WELD DUCTILITY OF MIG WELDED AL-65032 ALLOY

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ABSTRACT:

Fuzzy logic controller (FLC) is well suited where there is a considerable amount of uncertainty in the process. The material properties of a weldment in Metal Inert Gas Welding (MIG) depend on welding parameters like shielding gas pressure, current, torch angle, electrode size, arc length, feed of electrode wire etc. It is also influenced by the joint parameters like groove angle, land, root gap, preheating temperature. But a lot of noise parameters like variation of base material properties, variation in quality of inert gas used, variation in ambient conditions, variation in workman ship etc introduce the uncertainty into the process. To deal with such uncertainties an FLC is designed and validated. In the current work, four parameters namely inert gas pressure, current, groove angle of the joint and preheating temperature of base metal are considered as input parameters and the effect of these parameters on the percentage of elongation which is a measure of ductility is studied. Three linguistic terms are used for each parameter. To minimise the no. of experiments in designing data base an L-9 orthogonal array is chosen for experimentation. MIG welding is carried and data base with 9 rules are formulated. Triangular membership function is selected for the input and out variables and FLC is designed. The FLC is validated with 5 more experiments. Mamdani approach is used to develop the Fuzzy controller.

Keywords: Orthogonal array, Fuzzy logic controller, GMAW, Triangular function, Mamdani approach, crisp value, Membership function.

[1] INTRODUCTION

APPLICATIONS AND ENABLING TECHNOLOGIES FOR IOT

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[1,2]Assistant Professor, Department of IT, CBIT, India

ABSTRACT

Our experts observe the IoT as billions of smart, hooked up "traits" (a kind of "common worldwide neural network" in the cloud) that are going to encompass every component of our lives, as well as its foundation, is the intellect that installed processing offers. The IoT comprises original equipment communicating and corresponding with other machines, items, environments, and structures. Because of this, large volumes of data are being created. Data is being refined into useful activities that may "control and management" things to create our lifestyles much easier as well as more secure-- as well as to reduce our influence on the environment. This paper mainly discussed about the applications and IoT enabled technologies.

Index Terms: Internet of Things,

I. INTRODUCTION

As the Internet of Things (IoT) remains to get a grip and also additional hooked up units pertain to market, surveillance becomes a primary worry. Assaulters are progressively breaching organizations via susceptible web-facing resources; what exists always to keep the very same coming from occurring to buyers?. The short answer is nothing at all. Broad-reaching hacks of hooked up devices have been taped and will undoubtedly continue to happen if suppliers carry out certainly not bolster their protection initiatives right now. Within this lighting, Veracode's research study staff reviewed six Internet-connected consumer units and found disturbing results.

We examined a variety of always-on buyer IoT units to comprehend the surveillance pose of each product. The result: item suppliers weren't concentrated good enough on safety and also personal privacy, as a layout priority, putting consumers at risk for a strike or even material breach.

Our crew carried out a collection of even exams around all devices and managed the findings into four different domain names: user-facing cloud services, back-end cloud services, mobile phone application interface, and tool debugging interfaces. The results presented that almost one gadget showed weakness throughout a lot of categories. There is a requirement to do surveillance customer reviews of unit design and accompanying applications to reduce the risk to customers.

Better, the study presents outcomes of hazard choices in exercise, talking about the prospective impact to users under a lot of theoretical breach scenarios. For example, because the Ubi stops working to safeguard its communications, if opponents were to gain access to eavesdrop on the visitor traffic of Ubi's cloud service-- as an example, via a network breach-- they would be able to observe the complete materials of every Ubi customer's voice commands and also feedbacks, providing the assaulters an obvious viewpoint into the use designs of individuals socializing along with units in their homes as well as workplaces.

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An Overview on Vehicle Detection and Classification System by Gaussian Mixture Models

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ABSTRACT

An efficient traffic control system by detecting as well as adding up the vehicle numbers several times and areas are required. Traffic estimate from the fixed graphics is the vital problem for automating traffic control commands. Today's traffic monitoring system possesses no significance on the online traffic situation, which results in unskilled traffic management units. These traffic cooking timers just reveal the pre-set time, this feels like utilizing an available loop system. If our company settle a sealed loop system making use of cam, it is achievable to forecast the needed opportunity on traffic light timers according to the traffic thickness. If the traffic signal timers are presenting simply required opportunity to manage the traffic, after that the time wasted on unwanted environment-friendly indicators (eco-friendly sign, when there is no traffic) will be saved. This paper provides an overview on vehicle detection and classification system by gaussian mixture models.

Keywords : Gaussian Mixture Models, Vehicle Detection, Classification System

I. INTRODUCTION

System traffic information is extensively defined as the quantity of info crossing a network at a provided moment This relevant information features, to name a few things, the lot of celebrations, the number of Internet Protocol addresses sounded, the form of celebrations, where the celebrations originated from, and so on. All these personal items of info maybe stood for as a univariate time collection information set. In many cases, this time around set records set is additionally in season, where observed patterns are periodic.

An outlier happens when an unpredicted or even atypical records aspect is noted where recently a design or circulation was observed. The previous deal with outlier detection has used the conditions anomaly and outlier mutually. However, here our team decide to utilize the term outlier to show quite low possibility incidents, as opposed to an irregularity which can not be revealed offered some presumptions created about the underlying circulation of the record collection. Outliers in-network traffic can easily occur for a variety of main reasons: abrupt spike or even plunge in the number of bytes transmitted, many failed login attempts in a row, access to a web server from an atypical place, spike or dip in a complete lot of events, and so on. Several of these outlier actions could potentially be an attack on the system, or just be an interesting celebration. In this particular article, our company handle all outliers as well as not only prospective strikes on the network.

There have been several types of research on approaches to locate outlier behaviour in network traffic. [1] administer selected approaches of your time collection analysis to network traffic information and reveal that

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Smart Wearable Device for Women Safety Using IoT

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***Abstract*— The crimes against women have been rising significantly and often hear about molestation, eve-teasing and rape cases in the public places of the society. The security of women is the most important concern these days and to build a safety device to act as a rescue and to prevent from harm at the time of hazard is highly necessary especially for women. In this paper, a smart device for women's safety which automates the emergency alert system by using pressure sensor,pulse-rate sensor and temperature sensor to detect a possible atrocity automatically using outlier detection is proposed. This system detects and sends the alerts for the dear ones with the location coordinates of the women without the requirement of her interaction in critical times. It sends an emergency message automatically to the relatives and nearby police station.**

Keywords*— *Pressure sensor, Temperature sensor, Pulse-rate sensor, GSM, GPS, Internet of Things (IoT), Smart Device, Women Safety.

I. INTRODUCTION

Women are the most integral part of any economy primarily responsible to shape the future of the country. Many crimes against them are not being reported because of society's hypocritic point of view. Various types of humiliations and mistreatment are being faced by the victims who try to report their assaults from society. Only one of four cases lead to conviction trails in India.

Proper precautions should be taken to to build the best solution to this problem. This paper proposes an IoT based smart wearable for the safety of women. The device is used to automatically detect such situations and inform the related persons. It not only helps women escape critical situations but also ensures to provide justice to the women by helping them in times of need.

II. RELATED WORK

The research of S. A. More [1] discusses using temperature sensors and pulse rate sensors to automatically detect a chance of a possible situation and notify family and friends using a mobile application. [2] discusses the usage of image processing to detect any possibility of danger and proposes various solutions to protect herself. In [3] the authors developed a device which employed PIC16F876A microcontroller and a SIM808 module, which has GPS, GSM and GPRS support which are used to notify the friends and family when the emergency button is pressed. In [4] a system based on the facial features is developed. If the facial expression is a threat-based expression then a report is filed. About [5], GSM and GPS are used to build a safe device. In this system, the message is sent to pre-stored mobile numbers which consist of the body posture of the victim along with her location. In [6] independent triggering of android application and arm device takes place with the help of synchronized Bluetooth connection. The audio and video that have been recorded are sent to the phone numbers which are pre-set in the application along with the location in the form of a call and also a message to alert them. In [7], an android app is developed which gives the location of the woman in danger by giving fake phone calls, video forwarding, location and first-aid information. In [8], body vibrations, heart rate and body temperature are sensed using sensors by the help of a reliable security device which consists of ATMEGA8 controller with Arduino tool and advanced sensors. In [9], three sensors namely heartbeat, temperature and accelerometer are used. These sensors are used to detect if there are any anomalies and a message to alert the dear ones is sent using GPS and GSM module.

III. EXISTING SYSTEM

In the existing system, there is no way to monitor the crimes occurring against women. However, there are some places where CCTV cameras are fitted, and the recording is stored. They are used only to act after everything has happened.

The only way for them to ask for help is to use their mobile phone to send a message to their friends and family. In that crucial moment, for most of the women, it is difficult to get a hold of their mobile phone. Even if they do, it is difficult to send a message quickly before anything brutal happens. It is also very unreliable.

The disadvantages of existing systems are as follows:

- Not very reliable
- Need manual effort
- Expensive

International Journal of Innovative Technology and Exploring Engineering (IJITEE)
ISSN: 2278-3075 (Online), Volume-9 Issue-5, March 2020

Non-Contact Pulse Detector using Video Analytics

K. Swathi, R. Rahul, B. Phaninder

Abstract: ***Non-contact pulse detector used for heart beat measurement based on computer vision, where a standard color camera captures the plethysmographic signal and the heart rates are processed and estimated dynamically. It is important that the quantities are taken in a non-invasive manner, which is invisible to the patient. Presently, many methods have been proposed for non-contact measurement.***
The proposed method based on the computer vision technique is enhanced to overcome the above drawbacks and it requires low computational cost. Many of the hospitals are using surveillance cameras, from these cameras we can monitor the video of the patients waiting in the queue. The camera is attached in the patients' waiting room and the faces of the patients are monitored. Many factors are considered in the phases of image acquisition, as well as in the plethysmographic signal development, pre-processing and filtering. The pre-filter step uses numerical analysis techniques to cut the signal offset. The proposed method decouples the heart rate from the plethysmographic signal frequency. The proposed system helps in detecting the heart rate of a Patient who is waiting in queue for longer time. Based on the heart rate the seriousness of patient is identified and giving the preference to the patient and treatment will be started, with this the patient will be in safe side.

Keywords: ***image processing, plethysmographic signal, non-invasive, Heart rate.***

I. INTRODUCTION

There are many different invasive and non-invasive methods of measurements in the context of Heart rate. Among the non-invasive techniques for heart rate monitoring, the universal standard, is the electrocardiograph (ECG). However, recording the electrical potential generated by the heart requires proper electrode placement, which may interfere with the patient movements. Still today, available disadvantaged areas still lack quality electrodes, complicating their placement, causing skin lesions. Furthermore, electrode misplacement may produce skin lesions if wrapped around a limb. These disadvantages can effect health of personnel who must revise the electrodes regularly.[1]

A plethysmography wave is used in the finger pulse oximeter, with it measures heart rate (HR) and oxygen saturation in the blood but can cause problems like the same caused by an ECG electrode including skin irritations. The heartbeat and breathing frequencies can be measured based on the piezoelectric effect and involves placing a sensor on the abdominal area [2]. These methods are the most commonly used for monitoring vital signs and require contact sensors to be placed on the patient, whereas new trends seek to allow non-contact monitorization.

The several methods available for measuring heart rates include thermal imaging analysis [3,4], observation of the Doppler effect [5], Doppler-camera hybrid [6]. The variations in light intensity are affected by the type of light source or flickering. These methods are called photo plethysmographic images (PPGI). After reviewing the principal PPGI methods, considering the suitability for monitoring a heart rate.

Face image analysis has the considerable attention in the computer vision research community. The evolution in emerging robust algorithms and technology to transfer face image analysis from theory to fruitful automated identification systems for various applications. Automatic face recognition remains an exciting task when presented with uncooperative users as well as in uncontrolled environments.

Discrete wavelet transforms (DWTs), which are multiresolution image analysis tool. Multiresolution property of DWT empowers one to efficiently compute a small-sized feature representation that is predominantly required for face recognition.[7] . Low frequency estimate sub band is suitable for face descriptor for recognition under precise illumination, but it is significantly affected by varying illumination. In other way, the detail sub bands (e.g., horizontal and vertical face features) are accurately hard-hitting against erratic lighting conditions, but they are affected by geometrical changes such as varying facial expressions and pose.

Comprehensive methods such as Principal Component Analysis (PCA), Linear Discriminant Analysis (LDA) and the more recent 2-D PCA are used for facial analysis. In this paper using LBPH algorithm.

The paper is organized into 4 sections, in first section giving the information about introduction of the related work. In second section deals with the proposed methodology. In third section analyising the results. In the last and fourth section concluding the work.

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7.

Statistical Analysis of Oxidative Coupling of Methane in Membrane Reactors

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Department of Chemical Engineering Chaitanya Bharathi Institute of Technology Hyderabad, India

Abstract Petroleum reserves are dwindling day by day, making the conversion of natural gas into other chemicals and fuels the major step in maintaining the fuel supplies and furthermore in contributing for the sustainable economic growth. Many a processes can be employed to achieve it but, compared to all the energy-intensive syn-gas formation techniques, the direct route that converts methane into higher hydrocarbons in one step employing oxidative coupling of methane is intensively studied here. This paper entirely focuses on reviewing the OCM technology in membrane reactor using the parametrical analysis procedure. In regards to which, parameters employed in the process such as temperature, feed ratio for different catalyst combinations are taken into consideration, owing to which the yield obtained and corresponding methane conversions are studied. The amount of impact these parameters have on the OCM process in the membrane reactor is analyzed by determining the effect percentages of the parameters individually using statistical analysis technique. The results make way for the formation of a hierarchical order of parameters, which gives a clarified view over the technique for the further developments to take place.

8.

Effect of Pulping, Bleaching and Refining Process on Fibers for Paper Making – A Review

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AbstractThe consumption of paper and paperboard products are a yardstick of development of a society or a country and their use is absolutely indispensable in our daily life. The challenge involved in paper making is to remove lignin from middle lamella and cell walls so as to separate the pulp fibers and make them flexible. This paper presents a concise overview of Indian pulp and paper industry, importance of pulping, bleaching and refining of fibers for paper making. Significance of chemical constituents of biomass such as lignin, cellulose, hemicellulose, extractives, ash, for papermaking is explained. Status of different types of raw material used in Indian pulp and paper industry is presented. Reflections on different types of pulping processes such as Kraft pulping, Mechanical pulping, Chemical thermal mechanical pulping along with the necessary reactions have been provided. Also, Elemental chlorine free and Total chlorine free bleaching sequences are presented which yields a brightness of appr 80% ISO/SBD.

9.

EXTRACTION OF A FINELY DISPERSED LOW- GRADE IRON ORE BY FROTH FLOTATION

K.Prasad Babu, Mohammed Aminuddin

European Journal of Molecular & Clinical Medicine, 2020, Volume 7, Issue 10, Pages 4124-4130

Abstract

ABSTRACT: The gradual depletion of high-grade iron ores due to extensive utilization has necessitated the exploitation of low-grade iron ore reserves of India. Extraction of low-grade iron ore is required to make it suitable for industrial usage. The low-grade iron ore mined from Gua mines contains 57.6% Fe. Mineralogical Studies revealed that liberation of gangue from iron-bearing mineral at coarser sizes is limited, thereby necessitating the samples to be ground to finer sizes below 150 microns for better liberation. The ground material is de-slimed using a hydro-cyclone and the underflow product was subjected to reverse flotation. In the flotation experimentation, the main variables investigated were collector dosage, pH, per cent solids, depressant concentration and frother concentration. Results of these studies show that froth flotation can be used for the beneficiation of low-grade iron ore to produce a concentrate suitable as pellet feed for iron making.

Keywords: Low-grade iron ore, Mineral extraction, Desliming, Reverse flotation.

10.

Ore Geology Reviews
Volume 127, December 2020, 103850

Short communication

Exploration for strategic placer mineral deposits in a fluctuating shoreline: Depositional environment and mineralogical characterization of the NE Odisha coast placers, India

Rambabu Singh [a, b], A.S. Venkatesh [b], Ch. Sudhakar [c], Satya N. Sethy [b, d], K. Prasad Babu [b, e]

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https://doi.org/10.1016/j.oregeorev.2020.103850

11.

Renewable Energy
Volume 160, November 2020, Pages 1036-1047

High proton conductivity dual modified ionic crosslink membrane for fuel cell application at low humidity condition with molecular dynamics simulations

Harsha Nagar [a], Vineet Aniya [b], Prasenjit Mondal [c]

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https://doi.org/10.1016/j.renene.2020.06.026

13.

Environmental Technology & Innovation
Volume 20, November 2020, 101111

Kinetic modeling and development of optimal trajectories for biodiesel production using multi-objective optimization

Anitha Mogilicharla [a], P. Swapna Reddy [b]

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https://doi.org/10.1016/j.eti.2020.101111

Highlights

- Kinetic modeling of simultaneous Transesterification and

15.

Kinetic Modeling of Citrullus Lanatus (Watermelon) Peel Using Thermo Gravimetric Analysis

Aarti Tallam, Sai Rohith Bairy, Raju Kalakuntala, Naga Prapurna P.V and Srinath Suranani

From the journal Chemical Product and Process Modeling
https://doi.org/10.1515/cppm-2019-0076

Abstract

This work aims at the kinetic studies of the hydrochar produced from hydrothermal carbonization of citrulluslanatus(watermelon) peel. The hydrochar was prepared at optimized conditions regarding Carbon content, High Heating Value and Yield at experimental conditions of 210 °C and 1 h operation. The Watermelon peel hydrocharkineticswereinvestigated at heating rates of 5 °Cmin^{-1}, 10 °Cmin^{-1}, 15 °Cmin^{-1}, & 20 °Cmin^{-1}

17.

International Journal of Inventive Engineering and Sciences (IJIES)
ISSN: 2319-9598 (Online), Volume-5 Issue-9, May 2020

Characterization of Surface Coating Techniques for Improved Performance

K. Samhitha Reddy, V. Shreya Reddy, Sujitha. J, Madhuri Pydimalla

***Abstract*: Surface coating has evolved with time, tracking the demands of the processing industry. This research activity, studies the significance of powder coatings in the evolution of existing conventional surface coating technology for their practical applications in the field of metal coating, particularly office and home appliances. The first objective of this work involves a systematic comparison between polymer powder coatings with liquid-based coatings. In the second objective, a comparison between the polymer coatings with additive filled powder coating was performed. Various conventional substrates (such as copper, aluminium, galvanized iron, brass, cement plank, wood block) were used for this study. The materials were first dry scuffed and then dipped in 3 in 1 chemical (zinc phosphate chemical and magnesium phosphate) for the primer coat. The prepared substrates were surface coated with liquid paint (on one side of the panel) using spray gun and powder paint (on another side of panel) using electrostatic spraying. The coated panels are then subjected to various standard (ISO) characterization techniques such as Scratch hardness test, Flexibility test, Thickness test, Adhesion test, Impact resistance test etc to analyze the effectiveness of the coatings applied. The quantitative and qualitative results thus obtained using powder coatings were promising (e.g: As the load progressively kept increasing i.e. 1000-2000 gm, mild scratches were noticeable on liquid coated substrates whereas powder coated metal panels have shown a**

***Keywords*: Powder coatings, Additive (graphene), Scratch hardness test, Impact resistance test.**

I. INTRODUCTION

A coating is a covering that is applied to the surface of an item or substance to enhance and expand a variety of practical performance properties such as colour, shine, wear resistance or chemical attack or permeability [1]. Coatings (also termed as "Substrate") refers to paints such as lacquers or enamels, films such as varnishes, sealants, adhesives, inks, maskants, and temporary protective coatings. Coatings are generally referred to as decorative or protective; often both the functions are included. The design of coatings over the years is primarily aimed to reduce the coating thickness and improve the corrosion resistance [2]. Thus coatings have now become widespread and a very important technique for adding value to the efficiency (protection and durability) of a material. Surface coating is an economical method used for the production of tools, machine components and materials that require the desired surface properties such as wear resistance, corrosion and erosion [3]. The most common surface coating methods/technologies include: Vapour deposition (VD), Chemical vapour deposition (CVD), Electro deposition coating (EDC) and Thermal spraying

18.

Requires Authentication Published by De Gruyter April 3, 2020

Unbleached and bleached handsheet characteristics of Subabul heartwood and sapwood

Madhuri Pydimalla and Ramesh Babu Adusumalli

From the journal Nordic Pulp & Paper Research Journal
https://doi.org/10.1515/npprj-2019-0055

Cite this Share this

Abstract

The objective of this study was to understand the influence of bleaching on % residual lignin, water retention value, brightness and morphological properties of Subabul heartwood and sapwood pulps. The second aim was to compare the properties of unbleached and bleached handsheets with respect to tensile index and fractography. Screened wood chips of Subabul were subjected to kraft cooking (165 °C, 3 hours) followed by

20.

Journal of Environmental Chemical Engineering
Volume 8, Issue 5, October 2020, 104117

Microporous material induced composite membrane with reduced oxygen leakage for MFC application

Harsha Nagar [a, b], Vineet Aniya [a]

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https://doi.org/10.1016/j.jece.2020.104117

Highlights

- Novel zeolite loaded sulfonated polyethersulfone/ polyvinylidene fluoride membrane.

21.

Journal of Molecular Liquids
Volume 306, 15 May 2020, 112917

Phase equilibria and thermophysical properties of dibromomethane: Measurement and correlation studies

Abhilash Reddy [a], Harsha Nagar [b], Bankupalli Satyavathi [a], Vineet Aniya [a]

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https://doi.org/10.1016/j.molliq.2020.112917

Highlights

- Dibromomethane saturated vapor pressure at the isobaric condition 11.48–94.79 kPa

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3 Gozkfiwox yp Esy omr xywyq - afiooxsnr s Nxfls o yp ansoxno kxn bomr xywyq - M nofkl kn 612412- Nkmsk

4 Gozkfiwox yp Esy omr xywyq - afis d oxuk ofl kfk Fywoqo yp Hxqsxoofisxq- afiszofi w l n fi bu 713228- Nkmsk

5 FHE . Fox fo yp Esyvyqsnkv Hxqsxoofisxq- c xs offls yp T sxr y- 5821168 Efkqk- Wyfi qkv

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Geochemical Studies On The Groundwater Of Kistapur Village, Medchal District, Telangana

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Groundwater is one of the sources of drinking water and various other usages. With an increase in urbanization and industrialization, health conditions are influenced by the chemical aspects of groundwater and geology of the region. Access to safe drinking water remains an urgent necessity in the world as it is directly related to health. Groundwater accounts for more than 80% of the rural domestic water supply in India. The integrated groundwater prospects maps are preferred by using different thematic layers, like geology, geomorphology, structures, hydrology, etc. Drinking water quality data of rural water supply sources situated in Medchal district of Telangana state is studied for the parameters, like total dissolved solids, total hardness, alkalinity, pH and chlorides to assess the spatial distribution of ground quality in terms of portability or non-portability. The results were compared with the standard values given by the World Health Organization and the Bureau of Indian Standards.

KEYWORDS

Groundwater, Potability, pH, Alkalinity, Dissolved solids, Dissolved oxygen, Hardness

1. INTRODUCTION

Water is the most precious natural resource that exists on our planet. It occupies over 70% of the earth's surface. Water is essential for life on earth. Increase in population leads to an increase in the demand for water supply. India with 15% of the total population has access to about 4% of the total water availability [1]. It is estimated that approximately one-third of the world's population use groundwater for drinking [2]. As the demand for the water is increasing day by day, due to agriculture expansion, growing population and urbanization, so water resources management has become very important [3,4]. According to Hamzaoui-Azaza, the development of effective management of water resources becomes effective by an increase in knowledge of geochemical aspects of groundwater [5]. In India and various parts of the world, numerous studies have been carried out to assess the geochemical characteristics of groundwater [6,7,8,9,10,11,12]. It is noteworthy that out of 2.5% freshwater on earth, two-third is in the frozen form at polar regions as glaciers.

2. MATERIAL AND METHOD

2.1 Study area

The present study area is located in Kistapur village in Medchal district, Telangana. The area lies between 16°35' N to 16°45' N latitudes and 78°25' E to 78°30' E longitudes. Medchal is a northern suburb of Hyderabad.

2.2 Geology of the area

The study area comprises of crystalline rocks of Achaean age consisting of essential granites. They are hard and compact and range in texture from fine to coarse having least intergranular porosity. However, alteration of minerals composition and structure tend to modify this condition. The granites are primarily of two types, namely pink and grey granites. The grey granite is conspicuously banded with light bands being rich in quartz and feldspar and dark bands are mainly mica and hornblende. The pink granite constituents are quartz, microcline or orthoclase, albitehorn-blende and mica. The colour of the pink granite is mainly due to the presence of orthoclase feldspar and grey is mainly due to the presence of orthoclase feldspar with disso-

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Effect of long–term storage on the fatty-acid profile of biodiesel and its impact on key ultrasonic properties of biodiesels and blends

Eopzzl v– T h–rg Yl j j [a], egt grg axpt pffgyg Yl j j [b], R gxpt ngt zpa–hogj xg[b], gt j O–xgv gzpYgqgnuv gr[a]

[a]Hmfii©v mv ynFry mkpwyuyo /Gpiriw i Fpi@ prMv r mynZmkpwyuyo /L lm@jil/Zmiwoiwi Y i m/MMri C
[b]Hmfii©v mv ynUp rk /Gpiriw i Fpi@ prMv r mynZmkpwyuyo /L lm@jil/Zmiwoiwi Y i m/MMri

ABSTRACT

Dpuj pbyl rpy g nuuj grzl xt gzpffl zu Ul zxurl –s Fpbyl r(UF). bol yzuxgnl umm-l rpy –t gffupj ghrl mxpzy m-z–xl –yl . bol uhdqlizpffl umzol yz–j figy zu pt ffl yzpmgzl –rzxgyut pj vgxgs lzl xyBffpyi uypz , xl rg gzput zps l, –rzxgyut pj ghyuxvzput gt j lphh'y mxl l t lxn mx 2- lgx rut n-zl xs yzuxl j hpuj pbyl ry gt j hrl t j y fi pzo UF . bol zfi u hpuj pbyl ry fi l xl Euzzut all j Tpr Rlzo r Gyzl xy (EaTRG) gt j Ugrs azl gxpt Rlzo r Gyzl xy (UaRG). Hpffl hpuj pbyl r hrl t j y fi pzo UF pt 10, 20, 30, 40 gt j 50 ffur–s l vl xi l t z fi l xl yz–j pbj gz zol xuus zl s vl xgz–xl um 301 O. bol ngzz -gi pj vxu rl y fi l xl gryu pt ffl yzpmgzl j –ypt n l E R a i oxus gzunxgv opj gt gr zpj gr zuur gt j zol ffpyi uypz figy j l zl xs pt l j –ypt n gt Tyzfi gr j ffpyi-us l zl x c rzxgyut pj ffl ruipz figy s l gy–xl j fi pzo gt –rzxgyut pj pt zl xrhxus l zl x um l j mxl w–l t i 2 R K . bol xl y–rzy youfi zogz EaTRG hpuj pbyl r iut zgpt y 13.47 gt j 86.53 fi l pmoz vl xi l t z umufi s url i–rgx fi l pmoz tut vurgx gt j opmo s url i–rgx fi l pmoz vurgx i us vu–t j y, xl yv l izpffl r , gt j UaRG hpuj pbyl r fi pzo 38.66% gt j 61.33%, xl yv l izpffl r . bol s l gy–xl j vgxgs l zl xy pt i xl gyl j mx huzo zol hpuj pbyl r hrl t j y j –l zu yzuxgnl . bol pt i xl gyl pt EaTRG hrl t j y py s uxl zogt zogz pt UaRG hrl t j y. Hux EaTRG hrl t j y, opmol yz gt j rufi l yz iogt nl y gxl 64.28% gt j 4.48% mx 10% ffur–s l hrl t j umffpyi uypz gt j v–xl EaTRG hpuj pbyl rumi phh'y mxl l t lxn , xl yv l izpffl r . MM UaRG hrl t j y, zol gxl 31.25% mx 10% ffur–s l hrl t j umffpyi uypz gt j l xu mx 50% ffur–s l hrl t j um l phh'y mxl l t lxn . bol opmol yz j p l xl t il uii–xxl j mx 50% ffur–s l hrl t j y hl z fi l l t urj EaTRG gt j UaRG hrl t j y. Hxus zol uffl xgrr xl y–rzy, pz py iut-ir–j l j zogz ffgxpgzput y umzol s l gy–xl j vgxgs l zl xy yzxut nr j l vl t j ut zol ngzz -gi pj vxu rl umhpuj pbyl ry j –l zu yzuxgnl .

ARTICLE HISTORY
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KEYWORDS
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https://doi.org/10.1007/s13399-020-01044-x

VYNLNTHR HYdNIRK

w *Chlorella vulgaris* *Chlorella pyrenoidosa*

Yhrhyvnghi h hppm[1] · Mhvnavhyhi Yh shu vhr[2] · asjlhyvnS t hr hw[2] · I. Thkjsivhshlh Yjii[1] · ejjvhr l Hylt oo r hv[3] · I lhsivhyjolhvO uuhr[4]

Received: 10 July 2020 / Revised: 15 September 2020 / Accepted: 25 September 2020

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Lwv zyzto l p sp pnzyol x p lmzwp y sp t po m x tn zlwvlplyo sl pot p pl vtnl tzy ty l tz qtpwo lcsp p py o nzx l p lx zyr z x tn zlwvlw lty . *e s y o y i y r i u*)He , l yo *e s y o y i o u n i*)H[, . qz sp zo n tzy zq qwv zyzto l yo vt to . stns p pn wt l po ty x t z z stn l pwvl l z z stn x zop lcst o lwz qz n p zy sp zvp zqT/ spy vlvlytyp l l vpx py z pys l ynp qwv zyzto lcsp n py z v p l mtv sp sp pvl tzy np ppy yt l p . p p yl wnl nzy. l yo T/ spy vlvlytyp qz pys l ynpo zo n tzy zq qwv zyzto l yo vt to lcsp p l n po qwv zyzto p p qz yo z np x l tx x ty H[/l z z stn x zop qz wz po m He /x t z z stn x zop t s 46A µr 2x wl yo 44A µr 2x w p pn t pw lcsp nzx x zy qwv zyzto zmp po t s nz s sp x tn zlwvlw lty p p p np ty. nl pnsty. l yo /nz x l tn l nto l Py nzx l t zy. sp zo n tzy zq sp x l tx x vt to zq561@ l p z po t s x t z z stn z p l tzy ty He . qz wz po m H[ )4Bf7(, lcsp nl pyr tyr l n t t zq sp p l n po qwv zyzto l op p x typo tyr l s o zr py p z top l l l yo l qz yo z np ty sp l yr p zq96 @6(l l ww p p tx py l wnzyot tzy l H[l qz yo z zo np x z p qwv zyzto ty l z z stn x zop. sp pl x t z z stn x zop sz po x l tx x zo n tzy zq vt to l yo qwv zyzto ty sp He l csp tx wl ypz zo n tzy zq str s l wp/loopo zo n . t l qwv zyzto l yo vt to . yz zyw l p l l s l qz sp mtz pqtyp l zl ns m l wz pwp l p sp nzx x p ntl w z py tl wo tyr nl wp/ l

r *e s y o y i y r i u* l*e s y o y i o u n i* lLwv zyzto lTt to lbnl pyr tyr l n t t lGtz pqtyp l zl ns

Highlights
- *e s y o y i y r i u* ty x t z z stn x zop sl p z po tx wl ypz zo n tzy zq mz s qwv zyzto l yo vt to nzy py
- *e s y o y i o u n i* sz po x l tx x qwv zyzto zo n tzy zq 46A µr 2x wty l z z stn x zop l
- b vpx py l tzy zq nl nzy l yo T/ spy vlvlytyp ty x t z z stn x zop tpwopo x l tx x vt to l yo qwv zyzto . ql z tyr sp mtz pqtyp l / zl ns l
- csp nl pyr tyr l n t t zq sp p l n po qwv zyzto l qz yo z np ty sp l yr p zq96 @6(l

✉ Hslyo l pvsl S lx
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[1] I p l x py zq Gtz pnsyzwvr . Hsl t l y l Gsl l st By t p zq cpnsyzwvr)F zyzx z ,. M l yot p . N op l nl o. cpwlyr l yl . Pyotl

[2] I p l x py zq Gtz pnsyzwvr . b ppytost By t p zq bntpynp l yo cpnsyzwvr)F zyzx z ,. g l x yl x p . Msl vp l . N op l nl o. cpwlyr l yl b l p. Pyotl

[3] I p l x py zq Hspx tnl wc pnsyzwvr . Hs vlwzyr vz y d yt p t . Gl yr vzv. c s l t wlyo

[4] M ppy [znp tyr . Gtz px potl tzy l yo F wp yl t p Kyp r tp ap pl ns Mz . Ll n w zq Ky t zyx py l yo Tl nz bl qp . c zy I n c slyr d yt p t . Nz Hst U tys Ht . e tp yl x

1d t s

Vz l ol . l y r p z ot nz p yz pwl yo pq wo r l r l ty p t l y l s z r pytn l ty sl tyn pl po l Vl l w zo n ns l qwv zyzto l p r l tytyr tr ytqnl ynp ty sl x l np t/ nl w. yp l np tnl w l yo nz x p tn tyo tp i4 6kl Lwv zyzto l p sp pnzyol x p l mzwp sl npwzyr z sp zw spyzw nwv . stns l n l x zo wv z zq ty l npwwvv nzx x ytnl tzy l U z pz p . sp l wz l wp sp sz sz wv/ tzy l p zq sp l r p x zwpn wp l yo nl y q yn tzy l py x p l n t t x zo wv z i7klc z yop l yo l yo tx z p sp p p zy p . p p l nsp sl p qz n po zy sp tr yl wtyr p np / tzy. l y n t tzyl w pr wv tzy. l yo p p tzy zq q yn tzyl w z pty ty sp p p zy p x pnsl yt x i8kl Lwv zyzto sl p nppy vyz y qz spt sp l p tn z p tp wvp l y t/ z tol t p. l y t/x l r pytn. l yo l y t/nl ntyzr pytn sl nl y l zto px l p l r tyr zq sp npw i9klP t l npwtpq sl qwv z/ yzto l p p py x l tyw ty wy . m pnpy otp sz sl x tn zlwvlp sl p sp py x p zzwp t po qz qwv zyzto ntz/ y sp t i@klF wl p t l vyz y z np qz p p l wnwv p zq

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Engineering biocatalytic material for the remediation of pollutants: A comprehensive review

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ABSTRACT

Bioremediation through biotechnological interventions has attracted more attention among researchers in field of environmental pollution control and abatement. Various cutting-edge studies in area of protein engineering and synthetic biology offer a new platform for creation of innovative, advanced biological materials for its beneficial role in environmental pollution mitigation. Biocatalysis especially receives considerable attention as sustainable approach to resource recovery from waste along with elimination of pollutants. This paper focuses on updated developments in engineering of biocatalytic substances which can degrade pollutants of emerging concern. It also explains various classes of biocatalysts, their mechanisms of immobilization, and applications in terms of environmental pollutant remediation. Opportunities and challenges for future research have also been discussed.

Contents

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[5]EaQ Ui qwit @ q mw–@ m–I qkqtqyi– akqmvkmivI bmkpvwtwo)U@b,- b–qivI – u - @I q
[6]F mxi–u mv wnGv q–wwu mv it Gvoqym–qyo ivI e i m–bmkpvwtwo- @NG F mn @ q mwne i m–GI ki qw- F mn- bpm Umpm–ivI

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Long – term storage effect on molecular interactions of biodiesels and blends

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[a]Giuev@ is©tj Tl ymgy/Flem@es e Eleve@mMly@m@ tj Yigl stptk /Keshmui@L hivefeh/MhmeB[b]Giuev@ is©tj Emn@glstptk /Flem@es e Eleve@mMly@m@ tj Yigl stptk /Keshmui@L hivefeh/Mhme

ABSTRACT

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Food and Nutrition as natural immune-boosters: An Elaborative Review

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Abstract

Our body is provided with many mechanisms to protect itself from pathogenic invasion. One of those is our immune system which can be enhanced through a diet rich in nutrients that play an immunomodulating role in humans. Several foods contain components that stabilize the functioning of both our innate immunity (macrophages, NK cells, dendritic cells, neutrophils) and acquired immunity (T cells and B cells). This article reviews the published literature to identify a list of dietary ingredients that play a role in human immunity such as the production of immune cells, preventing any inflammatory responses, regulating gene expression, and preventing oxidation.

Keywords: *Immunity, Nutrition, Inflammation, Vitamins, Minerals.*

1. Introduction

The immune functions in healthy individuals are damaged by several factors and the deprivation of health is related to disruption of immune functions [1]. Nutritional deficiencies cause impairments in immune system development and have a negative effect on immune incompetence [2] that results in susceptibility to infection, [3] allergies and chronic inflammation [4]. Several health conditions that are the result of an impaired immune function like cancer, inflammation processes such as atherosclerosis, rheumatoid arthritis, bronchial asthma, cystic fibrosis, fibromyalgia have been known to be prevented and treated by components present in food [5]. Therefore, it has been suggested that components derived from certain foods included in the diet can improve the immune functions in healthy people. The consumption of foods that provide such nutritional components not only stabilizes immune functions but also reduces the occurrence of pathogenic infection [1]. The Macronutrients (lipids such as n-3 PUFA) and micronutrients (zinc, vitamin D, and vitamin E), in addition to phytochemicals and functional foods (probiotics and green tea), may benefit the immune system when taken in appropriate amounts. Their immuno-modulating effects include inhibition of pro-inflammatory mediators, promotion of anti-inflammatory functions, modulation of cell-mediated immunity, alteration of APC function, and communication between the innate and adaptive immune systems [6]. Also, nutritional factors modulate metabolic processes which may include the activation or inhibition of key enzymes or immunoregulatory mediators that can result in altered cellular immune function, particularly in cells of T lymphocytes lineage [7].Several trace elements and vitamins, have an important role in key metabolic pathways and immune cell functions [8].Food containing vitamins like C, E and beta-carotene need to be added to our diet has they show defence mechanism against free radicals [9].

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Distortion of Ultrasonic Waves in Long – Term Stored Biodiesels and Blends

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Abstract: Biodiesel is the best alternative fuel to Petroleum Diesel, as it is renewable and environmental friendly. The attenuation of ultrasonic waves of fixed frequency of2 MHz for two commercially available biodiesels, Cotton Seed Oil Methyl Esters (CSOME) and Palm Stearin Methyl Esters (PSME) and their blends with Petroleum Diesel (PD), were studied using an ultrasonic interferometer after long – term storage of two years. Between the two biodiesels, CSOME is rich in unsaturated Fatty Acid Methyl Esters (FAME) and the PSME in saturated FAME. The results showed that there was distortion in the amplitude variation of ultrasonic waves and indicates the presence of insoluble particles due to scattering of ultrasonic waves. The two biodiesels and blends followed a specific trend of amplitude distortion. The ultrasonic absorption estimated was found to be lower than fresh biodiesels and blends except for 30 %, 40 % and 50 % volume blends of PSME biodiesel for which ultrasonic absorption was more than the corresponding fresh blends. The percentage of changes in ultrasonic absorption was in the range 56.92 to 95.86 for stored CSOME blends.For PSME blends the corresponding range was 45.71 to 121.53.The change in ultrasonic absorption for PSME blends was sharp when compared to CSOME blends. The net ultrasonic attenuation is majorly due to scattering. The nature of scattering was different for both the biodiesels and blends that were reflected in amplitude distortions. Ultimately, it was concluded that the ultrasonic attenuation strongly depends on fatty acid profiles of biodiesels.

Keywords: CSOME and PSME Biodiesel Blends, Long – Term Storage, Amplitude Distortions, Insoluble Particles, Scattering of Ultrasonic Waves.

1. INTRODUCTION

The entire universe is now looking towards agriculture based renewable and sustainable energy sources such as biodiesel, which is a good replacement for Petroleum Diesel (PD). The advantage of biodiesel is that it is biodegradable and environmental friendly [1, 2]. The biodiesel is miscible with PD in all proportions. The quality levels of biodiesel and blends with PD greatly depend on storage span and temperature. Due to storage the acid value, peroxide value, viscosity will increase, whereas the iodine value will decrease [3]. This is the indication of degradation of biodiesel quality.

Oxidation is the main cause for degradation of biodiesel fuel quality. In general, biodiesel is composed of different Fatty Acid Methyl Esters (FAME). There are two types of FAME, saturated and unsaturated FAME. Unsaturated FAME is more prone to oxidation. The unsaturated double bonds get attack of free radicals and a hydrogen atom get cleaves from the fatty acid chain, then, the oxygen readily reacts with the site and forms hydrogen peroxide.

PV Parvati Sai Arun[1] / Vineetha Yarlagadda[1] / Govindugari Vijaya Laxmi[1] / Sumithra Salla[1]

Computational Analysis of the Hypothetical Protein P9303_05031 from Marine Cyanobacterium *Prochlorococcus Marinus* MIT 9303

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Abstract:
Prochlorococcus marinus MIT 9303 is a marine cyanobacterium found in sea waters. It was first isolated from a depth of 100 m in the Sargasso Sea in the year 1992. This cyanobacterium serves as a good model system for scientific research due to the presence of many desirable characteristics like smaller in size, ability to perform photosynthesis and the ease of culture maintenance. The genome of this cyanobacterium encodes for about 3022 proteins. Out of these 3022 proteins, few proteins were annotated as hypothetical proteins. We performed a computational study to characterize one of the hypothetical proteins "P9303_05031" to deduce its functional role in the cell using various bioinformatics techniques. After in-depth analysis, this hypothetical protein showed the conserved domain as of Hsp10 of molecular chaperonins of GroES. In this work, we have predicted the bidirectional best hits for the hypothetical protein P9303_05031 followed by the prediction of protein properties such as primary, secondary and tertiary structures. The existence of the Hsp10 domain indicates its role is essential for the folding of proteins during heat shock. This work represents the first structural and physicochemical study of the hypothetical protein P9303_05031 in *Prochlorococcus marinus* MIT 9303.

Keywords: Hsp 10, hypothetical protein, P9303_05031, *Prochlorococcus marinus* MIT 9303, bioinformatics techniques

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1 Introduction

Cyanobacteria are the ancient group of oxygenic photosynthetic micro-organisms existing on earth since 2.7 billion years ago [1]. As they can perform photosynthesis they are considered to be the progenitor of chloroplast present in plants [2]. Cyanobacteria contribute greatly to primary production by fixing a substantial amount of available carbon even in nutrient-limited niches such as oligotrophic marine surfaces to desert crusts [3], [4]. As Cyanobacteria possess vital metabolic pathways and being global producers of carbon and nitrogen budgets, they became one of the widely studied microbes [5]. Cyanobacteria have wide morphological differences from unicellular to filamentous, and also have diverged adaptations such as freshwater, marine water, terrestrial, etc. [6]. Genome sequencing of cyanobacteria was first initiated by sequencing the genome of cyanobacterium *Synechocystis* sp PCC 6803 in the year 1996 [7]. Till today there are several genomes of cyanobacteria sequenced and made publicly available at NCBI (ftp://ftp.ncbi.nlm.nih.gov/genomes). Using these completely sequenced genomes and by applying bioinformatics techniques one can find answers for many questions related to evolution, adaptation, physiology, and biochemistry of cyanobacteria [5]. As this cyanobacterium possesses many hypothetical proteins, characterization of these hypothetical proteins is an important task. For characterization of any protein, there are two approaches followed, namely the experimental approach and computational approach. Experimental approaches are the ones that may have many steps involved, laborious, time taking and costly. There are also many opinions about the experimental studies that sometimes they end up with no results (such as expressing the protein in inclusion bodies, etc.). To counteract these problems, the use of computational methods has gained importance. As there is an enormous amount of data present in publicly available databases, making use of such data would help in the characterization of proteins using computational methods. Generally, for computational characterization of any hypothetical protein, the following steps

PV Parvati Sai Arun is the corresponding author.

The characterization of Nd doped $BiFeO_3$ multiferroic polycrystalline materials

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PAPER

Novel cost-effective and electrocatalytically active intermetallic nickel aluminide counter electrode for dye sensitized solar cells

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Keywords: sputtering, Ni_3Al, counter electrodes, dye-sensitized solar cells

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Abstract

The very high cost, scarcity and dissolubility of platinum (Pt) is the center of debates as a counter electrode (CE) in dye sensitized solar cells (DSSCs) research domain. To deal with such core issues, herein, novel low-cost and electro-catalytically active inter-metallic nickel aluminide (Ni_3Al) thin films have been fabricated successfully on fluorine-doped tin oxide substrates by DC magnetron sputtering at room temperature. For the first time, Ni_3Al has been utilized as a CE for DSSCs application. Further, the solar cell performance of Ni_3Al based DSSC has compared with the sputtered coated Pt thin film based DSSC performance. Under open atmospheric experimental preparation conditions (in air), a maximum power conversion efficiency of 3% has been achieved with Ni_3Al CE. The obtained efficiency is quite analogous to a DSSC fabricated with a Pt CE. Further, as-fabricated Ni_3Al CEs have exhibited better electrochemical catalytic activity and anti-corrosion effect than that of sputtered Pt CEs. The low-cost and excellent electrocatalytic properties of intermetallic Ni_3Al thin films may pave the way towards development of Pt-free CE for DSSCs.

1. Introduction

DSSC is one of the alternatives for Si and thin film based solar cells due to their ability to work under diffused light conditions, ease of fabrication and economically affordable processes [1, 2]. To strengthen the competitiveness of DSSC in the area of solar cell, it is imperative to further improve the power conversion efficiency (PCE), performance stability for a longer period and reduction of the device cost. DSSC is mainly composed of a wide band-gap n-type semiconductor material (photoanode), sensitizer (organic/inorganic dye molecules), an electrolyte containing an iodide/tri-iodide (I^-/I_3^-) redox shuttle and a counter electrode (CE). The CE is an essential component of DSSCs, which plays crucial role in collecting electrons from the outer circuit and catalyzing I_3^- through reduction process to afford I^-, responsible for the re-oxidation of dyes [3]. An ideal CE should possess high conductivity and catalytic activity with better chemical stability. Currently, in most of the DSSCs devices platinum (Pt) coated glass is used as a standard CE due to its high catalytic activity and excellent electrical conductivity. However, high cost of the Pt and its lack of availability could hinder the mass production of DSSCs [4–7]. Similarly, several research groups have already reported corrosion/deterioration studies of Pt CE in the presence of I^-/I_3^- during the photovoltaic (PV) process [8]. To overcome such critical issues, various materials have been explored as potential alternatives to Pt, including carbon, metal oxides, transition metal sulfides, nitrides, and carbides [9–14]. Recently, C Wu and *et al* have demonstrated compound of carbon and nitrogen that forms carbon nitride as a Pt-free electrode for DSSC, and showed maximum 4.45% PCE [11]. For the high PCE of the solar cell, these CE materials should possess better electro-catalytic property with long term stability. The materials which are possessing both properties (high conductivity/high catalytic activity) along with low cost material may be a game changer in the area of DSSC. Many intermetallic alloys show

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Effect of long–term storage on the fatty-acid profile of biodiesel and its impact on key ultrasonic properties of biodiesels and blends

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ABSTRACT

Biodiesel is a good alternative to Petroleum Diesel (PD). The storage of fuel is unavoidable for its future use. The objective of the study was to investigate ultrasonic parameters: viscosity, relaxation time, ultrasonic absorption and Gibb's free energy for 2-year long-term stored biodiesels and blends with PD. The two biodiesels were Cotton Seed Oil Methyl Esters (CSOME) and Palm Stearin Methyl Esters (PSME). Five biodiesel blends with PD in 10, 20, 30, 40 and 50 volume per cent were studied at the room temperature of 301 K. The fatty-acid profiles were also investigated using GC–MS chromatographic analytical tool and the viscosity was determined using an Ostwald viscometer. Ultrasonic velocity was measured with an ultrasonic interferometer of fixed frequency 2 MHz. The results show that CSOME biodiesel contains 13.47 and 86.53 weight per cent of low molecular weight nonpolar and high molecular weight polar compounds, respectively, and PSME biodiesel with 38.66% and 61.33%, respectively. The measured parameters increased for both the biodiesel blends due to storage. The increase in CSOME blends is more than that in PSME blends. For CSOME blends, highest and lowest changes are 64.28% and 4.48% for 10% volume blend of viscosity and pure CSOME biodiesel of Gibb's free energy, respectively. In PSME blends, they are 31.25% for 10% volume blend of viscosity and zero for 50% volume blend of Gibb's free energy. The highest difference occurred for 50% volume blends between old CSOME and PSME blends. From the overall results, it is concluded that variations of the measured parameters strongly depend on the fatty-acid profile of biodiesels due to storage.

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KEYWORDS
Biodiesels and blends; long-term storage; fatty acid profile; high molecular weight compounds; viscosity; ultrasonic absorption

Introduction

In the wake drastic climate change and rising levels of pollution, the present world is exploring possible alternatives for environment-friendly fuels. Biodiesel is considered to be one such good alternative to Petroleum Diesel (PD). Vegetable oils or animal fats get converted into biodiesel on the trans-esterification process (Degfie, Mamo, and Mekonnen 2019). In general, trans-esterification takes place on mixing vegetable oil or animal fat with methanol in the presence of catalysts. The common base catalysts used are sodium hydroxide, potassium hydroxide and sodium methoxide (Thangaraj et al. 2019). As per the theory, alcohol and oil have to be mixed in the 1:3 molar ratios to produce 3 moles of biodiesel and 1 mole of glycerol. Direct use of vegetable oils or animal fats is not possible, as they possess high viscosity. To reduce the viscosity, the parent oil is trans-esterified to produce biodiesel of low viscosity compatible with the diesel engines (Leung, Wu, and Leung 2010). In

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ARTICLE

Dose assessment due to natural gamma radiation levels and radioactive nuclides in the environment of Dasarlapally, Nalgonda District, Telangana State, India

G. Suman[a], K. Vinay Kumar Reddy[b], M. Sreenath Reddy[a], D. Vidyasagar[c], Ch. Gopal Reddy[a] and P. Yadagiri Reddy[a]

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ABSTRACT

Gamma radiation levels in the indoors and outdoors of Dasarlapally, a village in the environs of uranium mineralised area, were measured with μR- survey metre and Thermoluminescence Dosimeters (TLDs). The measured gamma radiation absorbed dose in the study area varied between 1744 and 2663 μGy y^{-1} with an average of 2327 ± 505 μGy y^{-1}. The ratio of indoor to outdoor gamma radiation levels was found to be varied from 0.92 to 1.54 with an average of 1.09. The soil samples were analysed for radioactive elements ^{226}Ra, ^{232}Th and ^{40}K using gamma ray spectrometer and found that the concentration of radioactive nuclides, radium and thorium, is three times and five times higher than global average, respectively, whereas the potassium activity is lower than the global. The external absorbed dose rate due to radioactive nuclides present in the soil and associated hazard index parameters were also calculated.

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KEYWORDS
Uranium; gamma radiation; absorbed dose; radioactive elements; TLDS

1. Introduction

Natural radioactivity in the environment arises mainly due to the presence of primordial radionuclides such as ^{232}Th, ^{238}U and ^{40}K, and their decay products exist at the trace levels in the soil, rock, building materials, water, etc. [1]. The gamma radiation from the natural radioisotopes present in the soil is called terrestrial background radiation and this causes mainly external radiation to the general population. The natural radioactivity and associated external exposure due to gamma radiation in the environment depend on the geological and geographical conditions of the region. The radioactive elements that contribute to the external gamma radiation dose in the indoors and outdoors are ^{238}U, ^{232}Th and ^{40}K [2].

The activity of radionuclides to the environment is based on the content of thorium, uranium and potassium in the soil of that area [2]. The knowledge of distribution of radioactive nuclides in soil is a prerequisite for assessing the external exposure to population and to establish the radiation mapping of the region. The average annual global radiation dose received by human population is about 2.4 mSv. The contribution of terrestrial gamma radiation is about 21% [1]. It is assumed

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Article

Unique Structure-induced Magnetic and Electrochemical Activity in Nanostructured Transition metal Tellurates Co1-xNixTeO4 (x = 0, 0.5, and 1)

Akhilesh Kumar Patel, Manas Ranjan Panda, Ekta Rani, Harishchandra Singh, S. Shanmukharao Samatham, Abharana Nagendra, Sambhu Nath Jha, Dibyendu Bhattacharyya, Krishnawarrier Gopinath Suresh, and Sagar Mitra

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Research Article

Effect of long–term storage on the fatty-acid profile of biodiesel and its impact on key ultrasonic properties of biodiesels and blends

Chittepu Obula Reddy, Yanala Srinivasa Reddy, Maringanti Subhadra & Kurapati Rajagopal

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ABSTRACT

Biodiesel is a good alternative to Petroleum Diesel (PD). The storage of fuel is unavoidable for its future use. The objective of the study was to investigate ultrasonic parameters: viscosity, relaxation time, ultrasonic absorption and Gibb's free energy for

2-year long-term stored biodiesels and blends with PD. The two biodiesels were Cotton Seed Oil Methyl Esters (CSOME) and Palm Stearin Methyl Esters (PSME). Five biodiesel

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Raman and in-field ^{57}Fe Mössbauer study of cation distribution in Ga substituted cobalt ferrite ($CoFe_{2-x}Ga_xO_4$)

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ABSTRACT

Structural and magnetic properties of Ga substituted cobalt ferrite ($CoFe_{2-x}Ga_xO_4$) samples are reported in the present work. Phase purity of the prepared samples is studied with x-ray diffraction measurements. The room temperature M-H loops are measured using vibrating sample magnetometer. From the room temperature M-H data, it is observed that Ga substitution results in the soft-magnetic property in $CoFe_2O_4$. Saturation magnetization is found to change for higher substitution of Ga ($x > 0.2$). The cation distribution with Ga substitution is estimated from the analysis of Raman spectroscopy data and in-field ^{57}Fe Mössbauer spectroscopy measurements. Using the obtained complimentary information, it is concluded that the Fe^{3+} is forced to occupy more octahedral co-ordination with Ga substitution in $CoFe_2O_4$.

1. Introduction

Distribution of cations between tetrahedral and octahedral sites of ferrimagnets and their change make major point to tune the magnetic and magnetostrictive properties of these materials. The polycrystalline ferrites have great importance due to their intense applications in the manufacture of electric and magnetic components such as magnetic storage systems etc. Spinel ferrites with general formula AB_2O_4 (A = Cd^{2+}, Al^{2+}, Ni^{2+}, Zn^{2+}, Cu^{2+}, Co^{2+} and B = Fe^{3+} ion) are of great interest because of their magnetic, catalytic and electrical properties [1]. The electrical and magnetic properties of ferrites mainly depend on the preparation method, sintering temperature and chemical composition [2].

$CoFe_2O_4$ (CFO) is an inverse spinel ferrite and exhibits hard magnetic properties attracts more focus for its large magnetic anisotropy, moderate saturation magnetization, excellent chemical stability, mechanical hardness and high curie temperature of 793 K [3,4]. Spinel ferrites (AB_2O_4) crystallize in cubic structure and unit-cell contains 8 tetrahedral (A) and 16 octahedral [B] sites closely packed face centered cubic structure with 32 oxygen atoms. Thus the wide fraction of empty interstitial sites makes a substantial chance for migration of cations among interstitial sites throughout the preparation [5–7]. In normal spinel structure divalent cations occupy (A) sites and trivalent ions occupy [B] sites, whereas in the inverse spinel structure all divalent ions occupy the [B] sites and trivalent ions are equally divided between (A) and [B] sites [8–10]. The magnetic properties and exchange interactions of these ferrites found to be dependent on how the cations are distributed among the two sub-lattices [11,12]. The strength of super exchange interaction is changed with different occupancies of Co^{2+} ions in (A) and [B] sites because the interaction between Fe_A^{3+}- Fe_B^{3+} is much stronger than that of Co_A^{2+}- Fe_B^{3+} [13,14].

CFO is studied extensively with various substitutions at (A) and [B] sites. For example, substitution of Mn, Cr for Fe in CFO is found to result in the reduction of Curie temperature [15,38]. Whereas, the substitution of Al in CFO nano particles reduces the magnetization as the concentration of Al increases due to the changes in cation distribution [16]. As far as the non-magnetic dopants are considered indium (In) and gallium (Ga) are used in tuning the

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Effect of indium substitution on structural and hyperfine parameters of $CoFe_2O_4$

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M. Sumalatha, S. Shravan Kumar Reddy, M. Sreenath Reddy, Suresh Sripada, P. Venkat Reddy, Gopal Reddy Ch, P. Yadagiri Reddy, and V. Raghavendra Reddy

As-deposited sol-gel made TiO_2-SiO_2 films as protective coatings for silver

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B. Manikya Pratima, K. Uday Kumar, and A. Subrahmanyam

Synthesis, Characterization and Electrical Properties of Double Layered CMR Manganite $Sm_{1.2}Sr_{1.8}Mn_2O_7$

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ABSTRACT

Polycrystalline bulk sample of $Sm_{1.2}Sr_{1.8}Mn_2O_7$ was prepared by sol-gel method and was characterized using powder X-ray diffraction and scanning electron microscope. The sample shows single phase body-centered tetragonal structure. The electrical resistivity of the sample was measured, both in absence and in presence of applied magnetic field, in the temperature range 70 K - 300 K. The sample shows highly insulating behaviour in the measured region. The temperature dependent electrical resistivity data was fitted to the equations of various models. The results of the fittings indicate that the electrical conduction of the sample can be due to Efros-Shkloskii (ES) type of variable range hopping (VRH) mechanism in which electron-electron interactions are dominant.

Keywords: Manganites, Conduction, Magnetotransport, Sol-gel, Polaron

1. INTRODUCTION

The manganites with general formula $R_{2-2x}A_{1+2x}Mn_2O_7$ (R = rare earth ion and A=alkaline earth ion) are knows as double layered (DL) perovskite manganites. These materials, because of their reduced dimensionality and structural anisotropy, have been studied to explore the ways to improve their colossal magnetoresistance property with moderate magnetic fields [1]. The DL manganites consist of two perovskite blocks of MnO_6 octahedra, separated by a rock-salt (R, A)O layer. The anisotropic two dimensional Mn-O-Mn network gives rise to remarkable changes in electrical properties of the DL manganites. The two important interactions between Mn ions, namely double exchange (DE)-driven ferromagnetic (FM) interactions and superexchange (SE)-driven antiferromagnetic (AFM) interactions, are responsible for the observed transport and magnetic properties of the manganites.

There are many reports on the magnetotransport properties of lanthanum based DL manganites [2,3]. Nevertheless the DL manganites based on other rare earth manganites (Pr, Nd, Sm) have not been studied much [4,5]. This paper presents the results of the fittings of temperature dependent electrical resistivity data $Sm_{1.2}Sr_{1.8}Mn_2O_7$ to the equations of the different models to understand the electrical conduction mechanism in the sample.

2. EXPERMENTAL

Polycrystalline bulk sample of $Sm_{1.2}Sr_{1.8}Mn_2O_7$ was synthesized by sol-gel method. As compared to solid state reaction method, the sol-gel synthesis method has many advantages like homogenous mixing of the materials, low processing temperatures, uniform size of the particle, etc. Further, the DL manganites require high processing temperaturesn long reaction times and hence the sol-gel method is more appropriate for the synthesis of these DL manganites.

High purity powders of Sm_2O_3, $MnCO_3$ and $Sr(NO_3)_2$ were the starting materials. After the conversion of oxides into nitrates, the pH of these nitrates was adjusted to ~ 6 with the help of ammonia

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INDOOR RADON AND THORON IN THE VICINITY OF PROPOSED URANIUM MINING SITE: A CASE STUDY AT DASARLAPALLY VILLAGE, TELANGANA STATE, INDIA

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Studies are being conducted for the past few decades in and around the uranium mining sites across the globe to identify environmental nuclear radiation risk to the common public. The area near Dasarlapally village was identified for uranium exploration by the AMDER, Hyderabad. The present study was carried out to measure the indoor radon and thoron activity concentrations in the dwellings of Dasarlapally village. For this purpose different types of dwellings were chosen randomly across the village. The measured annual average concentration of radon and thoron in dwellings were found to be 141 ± 42 and 139 ± 77 Bqm^{-3}, respectively, and the calculated annual effective inhalation dose due to radon was determined to be 3.5 mSv. Seasonal variation and diurnal variation of radon and thoron activity concentration were investigated. The variation of radon and thoron activity concentration in different types of dwellings was also studied, and the variation was found to be statistically insignificant. The uncertainty propagated in the effective inhalation dose due to thoron was discussed.

INTRODUCTION

Radon (^{222}Rn), a decay product of radium-226 in uranium-238 decay chain, is responsible for more than half of the natural radiation dose received by common public[1]. Lung cancer is a major health hazard associated with the inhalation of indoor radon and its progeny[2]. Exposure to thoron, an isotope of radon and a decay product of ^{224}Ra in thorium series, was ignored initially citing its short half-life (55 s). It was realised in later studies that thoron is also one of the influencing contributor to the total inhalation dose in the indoor environment, if the thorium content in the soils of the area is considerably high[3–7]. The activity of radon and thoron in indoors vary significantly, and the concentration of these gases in the indoor environment are predominantly influenced by the building parameters, such as ventilation rates, life style of dwellers, porosity of the soil, geology of the area, etc.

Construction materials are the important source of indoor radon and thoron. Whether the materials are natural, man-made or by-product, they contain variable amounts of naturally occurring radionuclides such as the decay chain of ^{238}U and ^{232}Th, ^{40}K, etc. Concrete made from aggregates of granites, pumice and shale has higher reported radon emanation rates, whereas wood and other decorative materials have low ^{226}Ra concentrations and are treated as negligible source of indoor radon[8]. The emanation rates of radon and thoron gases depend on various parameters such as moisture content, porosity and meteorological factors[9]. Besides the construction materials, the geology of the region plays a major role on the indoor radiation activity concentration.

The Atomic Minerals Directorate for Exploration and Research (AMDER), Hyderabad, has identified Chitrial area of Nalgonda district, Telangana State, India, as potential area for the extraction of uranium and proposed for mining[10–11]. The mining and milling activities can enhance environmental nuclear radiation activity concentration in the surrounding areas[12]. Assessment of environmental radioactivity in and around the proposed mining sites before the extraction of the ore is required and helps in understanding the impact of mining. Investigations carried out before the mining begins can be used as the baseline data for future reference.

Study area

Dasarlapally is one of the nearest villages in the vicinity of the proposed uranium mining site. The village is in Nalgonda district, Telangana state, and is about 150 km from the capital Hyderabad in southwest direction, and it is located in Nidgul Reserved Forest. The location of village of the present study is shown in Figure 1 (latitude and longitude of location are 16^{0}31$'$42.6$''$N and 79^{0}02$'$35.4$''$E). Majority of the dwellings in the village were constructed with brick walls and cement plastering (some of them were

ARCHIVES

Computational Challenges in Statistical Outcome of Teaching Learning Practice: A Scientific Review

BL Reddy, GS Reddy, KVK Reddy and BS Reddy

Abstract

The implementation of soft computing techniques in the process of rubric evaluation is of vital importance in the environment of teaching learning. The evaluation and teaching methodology in modern era have been a challenging tasks in the process of imparting knowledge to the students of modern society. Statistical outcome of in the environment of teaching and learning process is a real objective need to be achieved through many challenges and difficulties. There have been multiple parameters involved in assessment and evaluation which can be possible through implementation of Softcomputing algorithms. The various facts encountered in the teaching learnig practice need to be analyzed in order to attain the targets of motivating the students and establishing the human resources in intellectual directions. The subjects presented in the paper deals with the mechanism of evaluation and utilization of technological resources in teaching learning practices. The teaching is the most challenging practice which can influence society and therefore teacher with high standards in the system of higher learning needs to established with all requirements necessary to provide the clear concepts in understanding and gaining the knowledge. Here the discussion will focus on the utility of modern techniques in connection with established principles of professional teaching practice.

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Disorder-induced critical exponents near a ferromagnetic quantum critical point in $Mn_{1-x}Cr_xSi$

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We report the observation of critical behavior in $Mn_{1-x}Cr_xSi$ ($0 \leqslant x \leqslant 1$) close to a $T = 0$ K quantum critical point, consistent with the Belitz-Kirkpatrick-Vojta (BKV) theory of disordered metallic ferromagnets. The critical exponents are in good agreement with the theoretical predictions of the BKV theory in the preasymptotic limit. A non-Fermi liquidlike behavior is seen down to 200 mK in the transport and thermodynamic properties around the critical concentration $x_C = 0.2$. Quantum criticality and self-consistency of the exponents is further confirmed using a scaling analysis of the magnetization and heat capacity data. A recovery to Fermi liquidlike behavior is displayed on moving away from the critical composition, as well as with the application of a magnetic field.

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I. INTRODUCTION

Tuning a continuous phase transition towards $T = 0$ K, through some nonthermal parameters such as pressure (p), magnetic field (H) or chemical substitution (x) leads to a quantum critical point (QCP). Systems close to a QCP are of fundamental importance, as the strong electron correlations present near the QCP give rise to interesting physical phenomena such as the heavy fermion behavior in f electron-based systems, non-Fermi-liquid (NFL) behavior, and unconventional high-T_C superconductivity [1]. The conventional Hertz-Millis-Moriya theory (HMM) [2–5] predicts a continuous phase transition with mean-field exponents in the case of ferromagnetic metals near a $T = 0$ K ferromagnet to paramagnet (FM–PM) transition. However, the well-known examples of itinerant ferromagnets, namely MnSi [6], $ZrZn_2$ [7], and UGe_2 [8], where pressure is used as a tuning parameter to suppress ferromagnetic ordering, deviate from such behavior. Belitz, Kirkpatrick, and Votja (BKV) demonstrated that the continuous tuning of the order parameter in sufficiently clean metallic ferromagnets is hampered through the growth of a discontinuous order parameter [9–11]. This happens due to a coupling between order parameter fluctuations with soft mode excitations present in metallic systems at relatively lower temperatures. BKV theory further suggested that a disorder induced suppression of T_C remains continuous down to $T = 0$ K [12–14]. The experimental results for the case of disorder induced FM QCP, however, are exceptionally rare [15,16].

MnSi with a low ordering temperature $T_C \sim 30$ K, is a candidate system to show a quantum phase transition (QPT) and has been studied extensively in this regard [1,6]. MnSi is a weak itinerant helimagnet (HM) with a pitch length of around 18 nm, which in a long wavelength limit is taken as a ferromagnet [17]. It recently attracted attention because of the presence of a skyrmion phase in the H–T phase diagram below T_C [18]. However, the continuous nature of the ferromagnetic ordering in MnSi, changes towards first-order, with the application of external pressure above $p^* \sim 12$ kbar $< p < p_C$ (critical pressure $p_C \sim 14.6$ kbar), which results in a tricritical point below $T \sim 12$ K and the emergence of tricritical wings in the p–T–H phase diagram [6,19], in agreement with the theoretical predictions [9,20,21]. Nevertheless, a putative QCP under the application of a magnetic field in $Mn_{1-x}Fe_x(Co_x)Si$ [critical concentration $x_C(Fe) \sim 0.192$ and $x_C(Co) \sim 0.084$] has been reported [22]. Yet another report suggested the restoration of a QCP in $Mn_{0.85}Fe_{0.15}Si$ at a critical pressure of $p_{QCP} \sim 21$–23 kbar [23]. In contrast, however, a recent report disputed the emergence of a QCP in $Mn_{0.85}Fe_{0.15}Si$ with pressure [24]. Although reports [22,23] claimed the restoration of a QCP as a function of doping and pressure, the nature of the QPT in MnSi remains elusive. Also, the critical behavior down to $T = 0$ K, with doping has rarely been studied in this compound, whereas, critical behavior studies in the parent compound suggest the critical exponents of MnSi belong to the tricritical mean-field theory universality class [25,26]. The present study aims to explore the doping induced quantum phase transition and to clarify the role of disorder and the nature of a quantum phase transition in metallic ferromagnets.

In this work, we present a detailed transport and thermodynamic study across the series $Mn_{1-x}Cr_xSi$ ($0 \leqslant x \leqslant 1$). We report the observation of critical behavior in Cr doped MnSi near a FM QCP and discuss it in the light of BKV theory for disordered metallic ferromagnets. We argue that the system

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Critical behavior, universality class and magneto-transport properties of Ni_2MnIn

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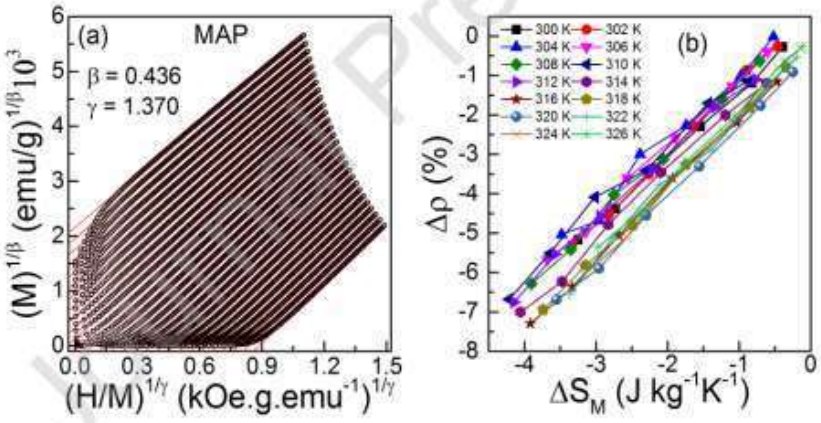
Graphical Abstract



ENERGY SOURCES, PART A: RECOVERY, UTILIZATION, AND ENVIRONMENTAL EFFECTS
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Long – term storage effect on molecular interactions of biodiesels and blends

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ABSTRACT

In this era of fuel crisis, biodiesel is the better alternative to Petroleum Diesel (PD). In general, biodiesel is composed of Fatty acid Methyl Esters (FAME). In the present investigation, change in molecular interactions of two year long-term stored biodiesels and blends were studied by measuring ultrasonic parameters. The results were analyzed with respect to fatty acid profile of biodiesels. The biodiesels collected were Cotton Seed Oil Methyl Esters (CSOME) and Palm Stearin Methyl Esters (PSME). The CSOME biodiesel was rich in unsaturated FAME and PSME in saturated FAME. Five different blends of both the biodiesels with Petroleum Diesel (PD) in the volume percent of 10, 20, 30, 40, and 50 were prepared. The blends were stored for two years in their as it was condition at room temperature without interaction of light. The measurements have been done using an ultrasonic interferometer of fixed frequency of 2 MHz. The measured parameters were density, ultrasonic velocity, adiabatic compressibility, acoustic impedance and intermolecular free length. Sediments were formed in CSOME biodiesel blends only which was rich in unsaturated FAME. No sediment was formed in PSME blends. The highest decrease was found in adiabatic compressibility for 10% volume blends by 5.96% and 5.65% for CSOME and PSME biodiesels, respectively. The lowest increase was found in density for 10% volume blend by 0.13% for both biodiesels. The difference between large and small values was found highest for 10% volume blend of PSME biodiesel by 5.17% for adiabatic compressibility. Poor stability was noticed in low-level blends than high-level blends. Pure biodiesels were found more stable than blends. Strong molecular interactions were observed in low-level blends. Systematic trend in the variation of percent change in parameters with respect to blend level was found in both biodiesel blends.

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KEYWORDS
CSOME and PSME biodiesel blends; unsaturated and saturated FAME; long-term storage; sediment formation; ultrasonic parameters

Introduction

At present, there is a fast depletion of fossil fuels. Biodiesel is a fuel alternative to Petroleum Diesel (PD). Transesterification of vegetable oils and animal fats produces biodiesel. Vegetable oils are the major sources of production of biodiesel (Jennifer, Amelia, and Jose 2015). In general, it is composed of Fatty Acid Methyl Esters (FAME) (Knothe 2008). As a fuel, biodiesel finds application in its pure form or blend with PD (Rodrigo et al. 2014). The importance of biodiesel is that it is renewable, locally available, and environmental friendly (Srivastava and Prasad 2000). However, the disadvantages of biodiesel are high feedstock cost and poor storage stability (Moser 2009).

Any fuel requires storage for some long term for the future use of it. Prolonged storage of the biodiesel affects its fuel quality (Bouaid, Martinez, and Aracil 2009). The major problem with biodiesel is oxidation stability during its storage (Rodrigo et al. 2014). Biodiesel shows poor oxidative stability

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Multiparton webs beyond three loops

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Abstract: Correlators of Wilson-line operators are fundamental ingredients for the study of the infrared properties of non-abelian gauge theories. In perturbation theory, they are known to exponentiate, and their logarithm can be organised in terms of collections of Feynman diagrams called *webs*. We study the classification of webs to high perturbative orders, proposing a set of tools to generate them recursively: in particular, we introduce the concept of *Cweb*, or *correlator web*, which is a set of skeleton diagrams built with connected gluon correlators, instead of individual Feynman diagrams. As an application, we enumerate all Cwebs entering the soft anomalous dimension matrix for multi-parton scattering amplitudes at four loops, and we compute the *mixing matrices* for all Cwebs connecting four or five Wilson lines at that loop order, verifying that they obey sum rules that were derived or conjectured in the literature. Our results provide the colour building blocks for the calculation of the soft anomalous dimension matrix at four-loop order.

Keywords: NLO Computations, QCD Phenomenology

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ABSTRACT

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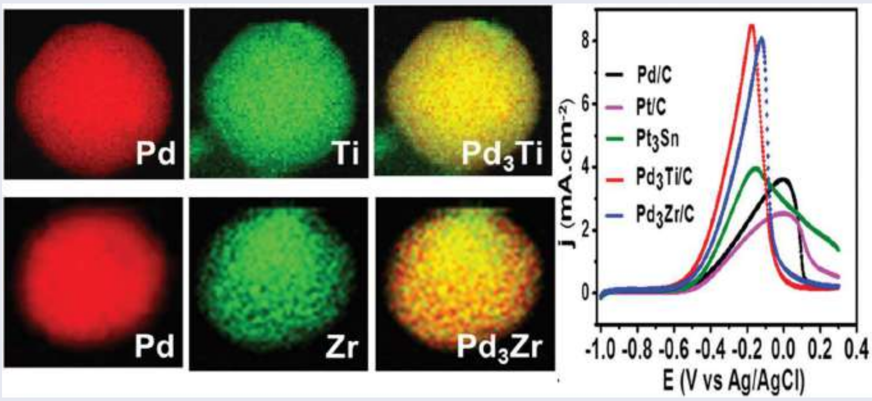

ARTICLE HISTORY
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Shylvhg 37 Kxr h 3131
Bffht whg 38 Kxr h 3131

KEYWORDS
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CLASSIFICATION
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A B S T R A C T

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Sol-gel synthesis and electrochemical properties of wolframite $FeNbO_4$

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Abstract. In the current effort, illustrate a different case $FeNbO_4$ with wolframite structure.$FeNbO_4$ was prepared by sol-gel polymeric precursor method in prospect of estimated prominent specific capacity. One cause is owing to the reduction of both Fe and Nb. The electrochemical lithium insertion/extraction studies on wolframite $FeNbO_4$ were conducted with a rate of C/10 in the potential window of 1.0-3.8V. Ex-situ XRD procedure was used to identify the Structural changes all the way through insertion/extraction of Lithium. The details of synthesis and lithium insertion mechanism in $FeNbO_4$ will be discussed.

Keywords: $FeNbO_4$, Wolframite, anode, Sol-gel method, Li ion battery.

1. Introduction

High potency, specific capability and long cycle life makes the lithium-ion batteries as fascinating power sources to use in electrical vehicles [1-3]. Safety issues and low theoretical capacity limit the appliance of graphite as anode material in lithium ion batteries [4]. To beat these limitations, scientists are targeted more on different anode materials. Structural aspects and polymorphism of $FeNbO_4$ was studied by Roth and Warring [5]. $FeNbO_4$ is widely utilized in gas device, chemical action applications [6-7]. Magnetic and electrical properties of $FeNbO_4$ were studied by several authors [9-11]. Additionally to it, $FeNbO_4$ has been worked as anode material in photograph chemical science because of its electrical properties for alternative energy conversion [12]. Wolframite, α-PbO_2 and rutile are the three totally different polymorphs of $FeNbO_4$. The natural action takes place from one type to alternative type counting on the synthesis conditions.α-PbO_2 sort structure is created at cold and rutile sort structure is created at hot temperature. α-PbO_2 and wolframite are common polymorphs of $FeNbO_4$. A physical and property varies from one being to the opposite [13]. Wolframite, α-PbO_2 and rutile are the three different polymorphs of $FeNbO_4$.The phase transition takes place from one form to other form depending on the synthesis conditions [13].

$FeNbO_4$ with wolframite structure crystallizes in monoclinic symmetry with space group P2/C. Zigzag chains of edge shared NbO_6 and FeO_6 octahedra exist within the wolframite structure on the c direction. Every chain accommodates either Fe or Nb [14]. Wolframite structure of $FeNbO_4$ is shown in Fig.1 [15,16].

Till date, only a few reports are available on the market on $FeNbO_4$ as anode material [12, 15-17]. Supported the oxidation-reduction couples of Fe and Nb and also the structure prompt the study of Lithium insertion into wolframite sort $FeNbO_4$. The aim of this work is to synthesize the

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RESEARCH ARTICLE

An Efficient Synthesis, Anti inflammatory activity and Molecular Docking Studies of new Triazinanes and Iminothiazolidinones

Dhanaja Kotte[1], Kumaraswamy Gullapelli[2]*, Brahmeshwari Gavaji[1], Ramchander Merugu[3], Ravichander Maroju[2], Muralikrishna Patwari[4]

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ABSTRACT:
A series of new triazinane-2-thiones and imino thiazolidinone-4-ones were synthesized from 2-acetyl benzimidazole (1). Treatment of compound 1 with urea in the presence of I_2 furnishes compound (2), which on reaction with Aryl isothiocyanateaffords the compound (3), which undergoes Cyclic condensation of classical Mannich amino methylation of compound 3with formaldehyde and methyl amine produces corresponding triazinane -2-thiones (4), whereas cyclic condensation of compound 3 with cholroacetic acid to furnish the corresponding iminothiazolidinones-4-ones(5).the chemical structures of the newly synthesized compounds have been characterized on the basis of spectral (IR,^{1}HNMR and Mass) and analytical data. The title compounds were evaluated for their anti-inflammatory activity and molecular docking studies. The docking studies are supporting anti-inflammatory activity exhibiting high inhibition constant and binding energy.

KEYWORDS: Benzimidazole, triazinanes and iminothiazolidinones, antiinflammatory activity and Molecular docking.

INTRODUCTION:

In the past few decades, Heterocyclic chemistry has received much attention due to its pharmacological importance[1-5]. Most of the heterocycles are natural products[6], which acts as antibiotics[7] and applied in pharmaceuticals[8-10]. In recent times, Nitrogen containing triazinanes found to be showing various biological activities[11-13] and used as engineering materials acting asMolecular Crystals[14], Phosphorescent light-emitting diodes[15] and having Nonlinear Optical Properties[16]. Thiazolidin-4-one derivatives have played vital role in medicinal chemistry due to their diverse chemical reactivity and broad spectrum of biological properties[17-19].

Imino-thiazolidin-4-ones have further gained importance due to their various chemotherapeutic properties having imino group in its molecular framework[20-21]. In view of the impressive biological activities shown by the molecules containing imino group, it was felt appropriate to highlight those features of the compounds and which has inspired to undertake this study.

Imino thiazolidinones are also one of the important classes of heterocyclic compounds[22-23]. The derivatives of imino thiazolidinones are found to be possessing biological activities such as antibacterial[24], antihyperglycemic[25], anticancer[26]and anti microbial activity[27].

Majority of the pharmaceutical products are heterocyclic molecules which meet the expectations of biological and industrial requirements. In view of this potential biological activity, It has been planned to synthesize 1,3,5 triazinanes and iminothiazolidinones linked with oxazole ring frame work.

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SYNTHESIS AND CHARACTERIZATION OF IMPURITY F IN 4-AMINO-N-(5-METHYL ISOXAZOL-3-YL) BENZENE SULFONAMIDE DRUG SYNTHESIS

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ABSTRACT

4-amino-N-(5-methylisoxazol-3-yl) benzenesulfonamide (API) has a great therapeutical value and acts as a good active pharmaceutical ingredient. However 4-amino-N-(3-methylisoxazol-5-yl) benzenesulfonamide (impurity F) has been identified in its synthesis in very minute quantities. Here in this paper, we present synthesis and characterization of this impurity so that its identification in API synthesis is made easy.

KEYWORDS: Cyanoacetic acid, Hydroxylammoniumsulphate, Impurity F, Coupling, Hydrolysis.

INTRODUCTION

Sulfonamides[1,2] are the basis of several groups of drugs. The sulfonamide group present in it is responsible for its antibacterial property. These sulfonamide drugs are known to have antibacterial, antibiotic, antimalarial and antifungal properties. They are also commonly used to treat sinus and urinary tract infections. They are also known as sulfomethaoxazoles. Human beings cannot synthesize folic acid (vit.B9) and should be acquired through their diet. Bacteria utilize para amino benzoic acid (PABA) which is used for synthesis of folic acid, an important metabolite in DNA synthesis. Sulfonamides are structural analogs and competitive antagonists of PABA. They inhibit the normal bacterial utilization of PABA. They are structural analogs and competitive antagonists of PABA. In bacteria, antibacterial sulfonamides act as competitive inhibitors of the enzyme dihydropteroatesynthetase, an

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Antimicrobial activity of pyrazole fused triazolo bridged thiadiazole derivatives

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Abstract: *The increasing incidence of bacterial and fungal resistance to a large number of antimicrobial agents has prompted studies on the development of new 1,2,4-triazolyl substituted thiadiazole derivatives potential antimicrobial as well as antibacterial compounds. The molecular manipulation of promising lead compounds is still a major line of approach to develop new drugs. In this paper we are discussing about the anti-bacterial activity of newly synthesized compounds* ***9a-l*** *by standard procedure.*

Keywords: *Triazole, thiadiazole, biological activity.*

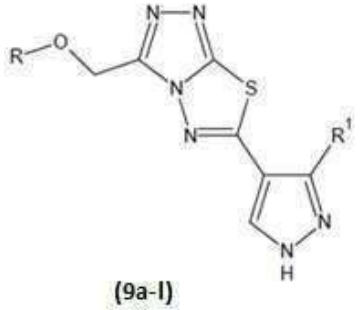
1. INTRODUCTION:

Heterocyclic ring substituted/fused on triazolo[3,4-b][1,3,4]thiadiazoles have become attractive targets in organic synthesis due to their significant biological and pharmacological activities. 2,4-Diaminopyrimidine derivative trimethoprim binds to dihydrofolate reductase and inhibits the formation of tetrahydrofolic acid. Then stops the DNA synthesis and finally inhibits the bacterial cell growth and also acts as bactereostatic agent.Various heterocycle derivatives have been reported to possess different biological and pharmacological activities like antibacterial[1], anti-inflammatory[2], diuretic[3], antimycobacterial[4-5].

The past decade has witnessed a significant increase in the resistance of pathogenic bacteria to antibacterial agents with direct implications in human morbidity and mortality. Hence, attention has been paid to a more detailed understanding of the mechanisms underlying antimicrobial resistance as well as to improved methods to detect resistance, new antimicrobial options for treatment of infections caused by resistant microorganisms, and methods to prevent emergence and spreading of resistance in the first place[6-9]. Most efforts were devoted to the study of antibiotic resistance in bacteria for several reasons: (i) bacterial infections are responsible for most community-acquired and nosocomial infections; (ii) the large and expanding number of antibacterial classes offers a more diverse range of resistance mechanisms; and (iii) the ability to move bacterial resistance determinants into standard, well-characterized bacterial strains facilitates more detailed studies of the underlying molecular mechanisms.

Antimicrobial is a general term for natural or synthetic compounds which at certain concentrations inhibit the growth of or kill microorganisms completely. The term antimicrobials are collective for antiviral, antibacterial, antifungal and antiprotozoal[10-12]. Due to the rapid development of microorganism's resistance to antimicrobial agents, it is necessary to discover compounds both naturally and synthetic of the new antimicrobial agents to help in the battle against pathogenic microorganisms. Much research has been carried out with the aim to discover the therapeutic values of flavonoid derivatives.

Structure of 6-(3-substituted -1 H-pyrazole-4-yl)-3[(substituted)methyl][1,2,4]triazolo[3,4-b][1,3,4]-thiadiazole derivatives (9a-l).



(9a-l)

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Synthesis and *In vitro* Anticancer Evaluation of Some New 5α-Cholestan-pyrazole Hybrids

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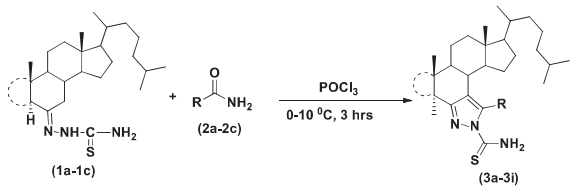
ABSTRACT The synthesis of some new 5α-cholestan-pyrazole hybrids from the reaction of 5α-cholestan-6-one-thiosemicarbazone derivatives with several amides using $POCl_3$ is demonstrated. The structures of newly synthesized hybrids were characterized by ^1H and ^{13}C NMR and mass spectral analysis. These compounds were screened for their *in vitro* anticancer activity over few human cancer cell lines such as ACHN, MCF-7, and A375 using doxorubicin as a positive control. Among them, compounds **3h** and **3i** have shown slightly higher activity than the positive control. The rest of the compounds have displayed moderate to good *in vitro* anticancer activity against all the tested cell lines as compared to the positive control. The IC_{50} values for more active **3h** and **3i** compounds were found to be ranging between 0.71 to 5.48 μM.



KEYWORDS Amides, Vilsmeier reagent, 5α-Cholestan-pyrazole hybrids, *In vitro* anticancer activity.

INTRODUCTION

Steroidal compounds have always gain a special place in medicinal chemistry research due to their key roles in numerous biologically active compounds. The development of new hydrophobic steroid core moieties is due to their proficient binding interaction with cell membranes which then further offers a route for the improved biological activity of respective hybrid compounds.[1] Interestingly, the fusion of heterocycles to steroids often leads to a change in physiological activities or appearance of new interesting biological behavior.[2] Hence, several steroidal-heterocycle-based pharmacologically active compounds such as antitumor, antileishmanial, antimicrobial, antiviral, and antianaphylactic proximities potential inhibitors of cytochrome P450 aromatase have been documented in the literature.[3,4]

Besides, pyrazole moiety can be known as active pharmacophore that shows necessary action in several biologically active compounds and thus became as an essential precursor in combinatorial as well as medicinal chemistry research.[5,6] Pyrazoles also serve as key intermediates for the synthesis of useful heterocyclic compounds in synthetic organic chemistry.[7] Moreover, pyrazole-based

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Ionic liquid catalyzed ambient synthesis of cholest-6-eno-4H-pyron hybrids and their in vitro anti-cancer evaluation

Ega Jagadeesh Kumar, Arisha Samba Shiva Rao, Kola Ramesh and Siddeju Kavitha

Page No. 123-129

A simple and efficient synthesis of cholest-6-eno-4H-pyron hybrids (3a-3f) via recyclable ionic liquid (bmim]PF6) catalyzed reaction of few cholest-5-en-7-ones (1a-1c) with ethyl cyanoacetate (2a) and malononitrile (2b) under mild temperature in described. The structures of synthesized compounds were confirmed with the help of IR, 1H and 13C NMR and mass spectral and CHN analysis. All the compounds have been further evaluated for their in vitro anticancer activity against three human cancer cell lines including MCF-7, A375 and ACHN using doxorubicin as standard drug.

Among all, two compounds 3c and 3f have shown slightly greater in vitro anticancer activity than the doxorubicin. The IC50 values for the more potent 3c and 3f compounds were observed in the range of 0.68 to 4.78 μM.

INDO AMERICAN JOURNAL OF PHARMACEUTICAL RESEARCH

A VALIDATED CHIRAL HPLC METHOD FOR THE ENANTIOMERIC PURITY OF TRELAGLIPTIN

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ABSTRACT

An accurate,precise,simple and rugged Chiral HPLC method has been developed and validated for the quantitation of (S)-isomer in Trelagliptin. The enantiomeric separation of Trelagliptin was achieved Chiral pak AD-3 (250×4.6mm, 3µm) column. The ratio of Hexane,ethanol and diethyl amine (70:30:0.1)in the mobile phase were optimized to obtain the best separation. UV detection was performed at 275 nm. The method is linear over a range of LOQ – 150 % of (S)-isomer. The mean recovery of (S)-isomer was found to be in the range of 95–105%. The method is simple, rapid, accurate, selective and precise, useful in the quality control of bulk manufacturing.

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Study of Structure of Buckminsterfullerene Using Nanotube Modellar Software

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Abstract— *Buckminsterfullerene is a type of fullerene with the formula of C60. It is an allotrope of carbon with a number of applications in fields of Drug delivery systems, Pharmaceuticals, targeted cancer therapies and hydrogen storage especially for applications in fuel cells and optical devices. In view of importance of Buckminsterfullerene its structure is studied by the use of nanotube modellar program and the structural data obtained is presented. XYZ-coordinates for Buckminsterfullerene were generated and with the help of integrated viewer of Nanotube Modeller, various geometries of Buckminsterfullerene were viewed. Some of these geometries include Ball stick model, wire frame model, Toggle bonds model, Toggle atoms model, cylinder or ball inserted, wire frame model, space filling model and Toggle fog model. Icosahedran geometry both as ball stick and wire frame model of structure of buckminsterfullerene were viewed. Also multi walled carbon nanotube (MWNT) is generated in the viewer for Buckministerfullerene.*

I. INTRODUCTION

Buckminster-fullerene, also known as a “buckyball" is a molecule composed of 60 carbon atoms and it is an allotrope of carbon other than diamond, graphene, and graphite. Its structure of a buckyball,is very much similar to the structure as a soccer ball (English football). The name ‘Buckminster fullerene' is after the name of the scientist Buckminster Fuller who first proposed it's existence. A team of scientists working on Buckminster fullerene' received a Nobel prize in Chemistry in 1984.Initially it was discovered in small proportions in soot and later it was detected spectroscopically in the vacuum of space.

The first fullerene molecule discovered is Buckminsterfullerene and is the most common form due to its occurrence naturally and it is found in soot also in small quantities. Buckminsterfullerene is a spherical fullerene molecule with 60 carbons. It was prepared intentionally in 1985 by Harold Croto, James heath, Sean O Brien, Robert Curl and Richard Smalley at Rice University. In 1996 Croto, Curl and Smalley were awarded Nobel Prize in Chemistry for their contribution in the discovery of Buckminsterfullerene and other class of fullerenes. The name Buckminsterfullerene is a homage and is in recognition of late Richard Buckminster fuller whose geodesic dome is of similar structure[1-5].

Buckminster-fullerene being a novel molecule has a number of practical uses as a very small inert spherical projectile. It shows wave-particle duality which is a quantum phenomenon, where under certain conditions bucky balls acting as massive particles behave like a wave.

This phenomenon of wave-particle duality is confirmed through the double slit experiment where Bucky balls are fired at a wall having two thin slits in it. When the molecules of bucky ball pass through the slits they hit the detector behind. An interference pattern is obtained instead of forming a linear pattern thereby indicating that the particles were mere probabilities. This gives the idea that a 60 atom molecule Buckminster-fullerene could be represented as a wave.

Structure, Properties and Applications of Buckminsterfullerene

Buckminsterfullerene is a molecule with 60 carbons that are arranged in regular pentagons and hexagons in the form of a hollow cage C_{60} structure of Buckminsterfullerene consists of 60 carbon atoms which are linked together forming cage-like structure which is hollow. Its basic structure consists of 20 hexagons and 12 pentagons with 32 faces. Among these none of the two pentagons are sharing a vertex (Figs 1&2).

Buckminsterfullerene C_{60} molecule is very stable molecule with spherical geometry, highly resistant to conditions of high temperatures and high pressures. It can react with other species at the exposed surface and at the same time the spherical geometry is also maintained. Because of its unique structure Buckminsterfullerene possess properties which are different from that of diamond and graphite. Some of its special properties are superconductivity and ability to trap other chemicals. Any element from the periodic table can be entrapped within the hollow spacious structure of Buckministerfullerene, and at the same time those elements are not reacting with the molecule.

Its conductivity can be increased by the process of doping and by doing so they can be made electrically insulating, conducting and sometimes semiconducting or even superconducting.

Potential applications of Buckminsterfullerene include Superconductors Lubricants Catalysts due to their high reactivity Drug delivery systems, pharmaceuticals and targeted cancer therapies Hydrogen storage especially for applications in fuel cells, Optical devices, Chemical sensors, Photovoltaics, Polymer electronics such as Organic Field Effect Transistors (OFETS)

Buckminsterfullerene is also useful in Antioxidants, Polymer additives, Cosmetics, where they “mopup” free radicals, Diamonds, fullerenes have been used as precursors to produce diamond films

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THE EFFECT OF THERMAL MODULATION ON DOUBLE DIFFUSIVE CONVECTION IN THE PRESENCE OF APPLIED MAGNETIC FIELD AND INTERNAL HEAT SOURCE

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The investigation of thermal modulation on double-diffusive stationary convection in the presence of an applied magnetic field and internal heating is carried out. A weakly nonlinear stability analysis has been performed using the finite-amplitude Ginzburg-Landau model. This finite amplitude of convection is obtained at the third order of the system. The study considers three different forms of temperature modulations. OPM-out of phase modulation, LBMO-lower boundary modulation, IPM-in phase modulation. The finite-amplitude is a function of amplitude δ_T, frequency ω and the phase difference θ. The effects of δ_T and ω on heat/mass transports have been analyzed and depicted graphically. The study shows that heat/mass transports can be controlled effectively by thermal modulation. Further, it is found that the internal Rayleigh number R_i enhances heat transfer and reduces the mass transfer in the system.

Keywords: thermal modulation, weak nonlinear analysis, internal heating, Newtonian fluid, double diffusive convection.

1. Introduction

The study of two-component thermohaline convection in porous media has found numerous applications. Due to the temperature and solutal fluctuation, there is a variation in fluid viscosity and density. Convection of two different density gradients with different rates of diffusion is known as thermohaline convection. There are many other applications related to natural convection. Some of the applications include are geology, astrophysics, and metallurgy. The basic and fundamental application of thermohaline convection is in oceanography, where heat and concentrations components exist with different gradients and diffuse at differing rates. There are other situations in which this convection takes place solidification of a binary mixture, migration of solutes in water-saturated soils, electrochemistry, crystal growth, geophysical system, the migration of moisture through air contained in fibrous insulation, earth's oceans, magma chambers, etc.

Hydrodynamic thermal instability is well documented and has been investigated, among others by Chandrasekhar [1]. Fundamental studies of double diffusion convection were mode by Huppert *et al.* [2] and Rudraiah and Shivakumara [3]. They investigated linear and nonlinear instability of double-diffusive convection in the presence of an imposed magnetic field. Stability analysis was discussed in terms of the

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Product of M-series and Srivastava's polynomials with generalized fractional integral operators
A. Padma, P. Neeraja
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Abstract
The goal of this article is to study some properties of generalized M-series introduced by Sharma and Jain in 2009. Here, we establish two theorems which provides the images of product of Srivastava's polynomials and this M-series under the generalized fractional integral operators involving Fox's H-function as kernel. Corresponding assertions in terms of Saigo, Erdelyi-Kober, Riemann-Liouville and Weyl type of fractional integrals are also presented. In the concluding part, a variety of well-known special cases are also mentioned.
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A Stochastic Study on Different Oil Seeds Using DEA Approach

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Abstract-This paper contains a number of to measure technical efficiency of Decision Making Units (DMU's). This approach engages the linear programming technique (L.P.P) with parametric and non-parametric production frontiers in easy way. The parametric estimates cannot be subjected to significance tests due to the non-obtainability of standard errors (S.E's).

In this Paper we proposed a method of stochastic production frontiers- technical efficiency of Cobb-Douglas frontier production function as a linear programming problem (L.P.P).This method can be stretched in easy way to any parametric frontier production or cost function which is linear in parameters.

Keywords: DEA, DMUs, Peer, Technical Efficiency, Super Efficiency.

I. INTRODUCTION

Efficiency is critical for organizations that seek to be both environmentally conscious and profitable. Efficiency has implications for a "win-win" situation to arise. Studying and managing organizations from this perspective requires an evaluation of efficiency. To aid researchers and managers develop measures for efficiency we review the use of data envelopment analysis (DEA) for this purpose. DEA theory and application has increased greatly. Its use as a tool for environmental performance evaluation has been limited. In this paper we provide a method of stochastic production frontiers- technical efficiencyof Cobb-Douglas frontier production function as a linear programming problem (L.P.P).

II. EFFICIENCY MEASUREMEN CONCEPT

The primary purpose of this section is to outline a number of commonly used efficiency measures and to discuss how they may be calculated relative to an efficient technology, which is generally represented by some form of frontier function. Frontiers have been estimated using many different methods over the past 40 years.

The two principal methods are:
1) Data envelopment analysis (DEA) and
2) Stochastic frontiers analysis (SFA),
Which involve mathematical programming and econometric methods, respectively. This paper is concerned with the use of DEA methods. The discussion in this section provides a very brief introduction to modern efficiency measurement. A more detailed provided by Fare, Grosskopf and Lovell and Lovell. Modern efficiency measurement begins with Farrell who drew upon the work of Debreu and Koopmans to define a simple measure of firm efficiency, which could account for multiple inputs. He proposed that the efficiency of a firm consists of two components: technical efficiency, which reflects the ability of a firm to obtain maximal output from a given set of inputs, and allocative efficiency, which reflects the ability of a firm to use the inputs in optimal proportions, given their respective prices. These two measures are then combined to provide a measure of total economic efficiency.

Super efficiency computations may result in infeasibility and the computations are linear programming based. It can be shown that for all DMUs which represent extreme point of the frontier production function, the input oriented super efficiency either larger then unity or the super efficiency problem is infeasible. For any DMU which is either weakly efficient or efficient but does not represent an extreme point, super efficiency score can be shown equal to unity. Therefore, for such DMUs unit input super efficiency score implies no additional input gains. To measure the performance of the states, we ranked using the AP ranking method using VRTS environment.

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THE COMPLEX GINZBURG LANDAU MODEL FOR AN OSCILLATORY CONVECTION IN A ROTATING FLUID LAYER

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A weakly nonlinear thermal instability is investigated under rotation speed modulation. Using the perturbation analysis, a nonlinear physical model is simplified to determine the convective amplitude for oscillatory mode. A non-autonomous complex Ginzburg-Landau equation for the finite amplitude of convection is derived based on a small perturbed parameter. The effect of rotation is found either to stabilize or destabilize the system. The Nusselt number is obtained numerically to present the results of heat transfer. It is found that modulation has a significant effect on heat transport for lower values of ω_f while no effect for higher values. It is also found that modulation can be used alternately to control the heat transfer in the system. Further, oscillatory mode enhances heat transfer rather than stationary mode.

Key words: convection, finite amplitude, nonlinear theory, rotation modulation, Nusselt number.

1. Introduction

The interest in the phenomenon of natural convection under externally modulated hydrodynamic configuration has been growing in engineering and thermal sciences in both theoretical and experimental studies. An excellent review on thermal convection was written by Chandrasekhar [1] and Drazin and Reid [2]. It is required to consider external phenomena, such as rotation, double diffusive convection, magnetic field, viscoelastic fluids, etc., for existing oscillatory mode of convection. In the present article, we consider rotation, and study Rayleigh-Bénard problem in a rotating fluid layer under rotation speed modulation. Donnely [3] was the first to study thermal instability in a rotating fluid layer under rotation speed modulation using perturbation method for free-free boundaries. For free-free boundaries conditions the normal velocity is zero and the tangential stress is zero at the wall. While calculating the shift in the critical Rayleigh number, he found that the system can be destabilized or stabilized by suitably tuning the frequency of rotation speed modulation. The rotation speed modulation was the originating idea of thermal (Venezian [4]) and gravity (Gresho and Sani [5]) modulations.

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NUMERICAL SOLUTION OF THE HEAT TRANSFER IN MHD FLOW AT THE THERMAL ENTRANCE REGION OF FLAT DUCT

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ABSTRACT

The objective of this paper is to analyze the heat transfer of MHD, fully developed incompressible cowling flow at thermal entrance region of a flat duct under constant heat flux at walls. The governing equations of the flow field are solved using by finite difference technique. The flow is in X-direction and applied magnetic field in the y-direction. The flow pattern is determined for different values of Hartmann number (m), heat generation (η) parameter and Electric field factor (e). Comparisons have been made with ordinary fluid flow and MHD flows. It is observed at MHD has effect of increasing temperature in cowlings flow. The variation of the wall temperatures for different values of M, e, η are shown graphically. Pseudo local Nusselt number variations shown graphically

INTRODUCTION

Heat transfer in electrically conducting fluid under the influence magnetic field for attracted the attention of many researchers. It has wide applications in magneto- hydrodynamics occillarater, generator, space research and wave propagation. Romig[1], siegel[2] have investigated heat transfer in a duct in the region where temperature distributions is fully developed and heat flux at the wall is uniform. Alpher [3], Yen [4] and Snyder [5] investigated the same problem but they assumed that the duct walls are electrically conducting. Regiver [6] and Grshuni et. al. studied the problem, neglecting joul heating in the fluid. Nigam and Singh [7] have included Jouls heating with constant wall temperature, viscocees and electrical dissipation in the thermal entrance. Erickson [8] applied "Finite Difference Technique" for the same problem. Jain and Srinivasn [9] extended this problem by including effect of electrically conducting walls. N. Rudraiah et. al [11] have studied effect of magnetic field free convention in rectangular enclosure.

Zmber et al [12] have studied the analytical solution to the problem of heat transfer in a MHD flow inside channel with prescribed sinusoidal heat flux. J.N.Lin et al [13] have investigated convective instability of heat and mass transfer for laminar forced convection in the thermal entrance region of horizontal rectangular channels. M.Essa Sayyed-Ahmed[14] have studied laminar heat transfer for thermally developing flow of a Herschel-bulkley fluid in a square duct. J.Lahjomri et.al [15] have studied heat transfer by laminar Hartmann flow in thermal entrance region with a step change in a wall temperatures.

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Common fixed point for two of sequences of occasionally weakly compatible self-maps

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Abstract - A common fixed point theorem of Bouhadjera is extended to a pair of sequences of occasionally weakly compatible self-maps.

Keywords–Symmetric, Occasionally weakly compatible mappings, Common fixed point.

1. INTRODUCTION

Let X be a nonempty set. A mapping $d : X \times X \to [0,\infty)$ such that $d(x,y) = 0$ if and only if $x = y$ and $d(x,y) = d(y,x)$ for $x, y \in X$ is called a symmetric on X. Let (X,d) be a metric space. Self-maps f and g on X are said to be occasionally weakly compatible (*owc*), if there is a point $u \in X$ which is a coincidence point of f and g, at which f and g are commute. Several fixed point theorems in metric space setting have been proved through contraction conditions involving different types of auxiliary functions. One such auxiliary function is a contractive modulus $\phi : [0,\infty) \to [0,\infty)$ with the choice $\phi(0) = 0$ and $\phi(t) < t$ and $t > 0$.

With these notions, Bouhadjera [1] proved the following:

Theorem *A:* *Let X be a set with a symmetric d. Let f, g and h be three self-maps of* (X,d) *and* ϕ *is a contractive modulus function satisfying*

$$d^2(fx,gy) \le \max\{\phi(d(hx,hy))\phi(d(hx,fx)), \phi(d(hx,hy))\phi(d(hy,fx)), \phi(d(hx,hy))\phi(d(hy,gy)), \phi(d(hx,fx))\phi(d(hy,gy)), \phi(d(hx,gy))\phi(d(hy,fx))\} \text{ for all } x, y \in X. \quad \ldots \quad (1)$$

If (f,h) *or* (g,h) *is owc, then f, g and h have a unique common fixed point.*

In this paper, Theorem *A* is extended to a pair of sequences of occasionally weakly compatible self-maps.

2. MAIN RESULT

Our main result is

Theorem B: *Let X be non-empty set with symmetric d. For fixed positive integer let* $\{f_i\}_{i=1}^{\infty}$ *and* $\{g_i\}_{i=1}^{\infty}$ *be two sequences of self-maps on X with* $f_{k+i} = f_i$ *and* $g_{k+i} = g_i$ *, i = 1, 2, … satisfying the following conditions*

$$d^2(f_ix, f_{i+1}y) \le \max\{\phi(d(g_ix, g_{i+1}y))\phi(d(g_ix, f_ix)), \phi(d(g_ix, g_{i+1}y))\phi(d(g_{i+1}y, f_ix)), \phi(d(g_ix, g_{i+1}y))\phi(d(g_{i+1}y, f_{i+1}y)), \phi(d(g_ix, f_ix))\phi(d(g_{i+1}y, f_{i+1}y)), \phi(d(g_ix, f_{i+1}y))\phi(d(g_{i+1}y, f_ix))\} \text{ for all } x, y \in X. \quad \ldots \quad (2)$$

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Ensemble Based Hybrid Recommender Systems

T. Prathima, B. Anjana, V. Apoorva, B.R.Sridhar

Abstract: In the past few years, the advent of computational and prediction technologies has spurred a lot of interest in recommendation research. Content-based recommendation and collaborative filtering are two elementary ways to build recommendation systems. In a content based recommender system, products are described using keywords and a user profile is developed to enlist the type of products the user may like. Widely used Collaborative filtering recommender systems provide recommendations based on similar user preferences. Hybrid recommender systems are a blend of content-based and collaborative techniques to harness their advantages to maximum. Although both these methods have their own advantages, they fail in 'cold start' situations where new users or products are introduced to the system, and the system fails to recommend new products as there is no usage history available for these products. In this work we work on MovieLens 100k dataset to recommend movies based on the user preferences. This paper proposes a weighted average method for combining predictions to improve the accuracy of hybrid models. We used standard error as a measure to assign the weights to the classifiers to approximate their participation in predicting the recommendations. The cold start problem is addressed by including demographic data of the user by using three approaches namely Latent Vector Method, Bayesian Weighted Average, and Nearest Neighbor Algorithm.

Keywords: Bayesian Weighted Average, Cold start, Hybrid recommender system, Ensemble hybrid models, Latent Vector method, Nearest Neighbor Algorithm

I. INTRODUCTION

With technology taking leaps and bounds in every field the amount of data being generated has crossed several limits. By using elaborate systems that exist, this humongous data can be used to help users and organizations make meaningful and informed decisions. Recommender Systems are the tools which come into play in this arena. By analyzing the data present, such as the types of products purchased over a period of time, behavior patterns of consumers, genres of movies and shows watched, the recommender systems present new products to the user which he is most likely to be interested in.

Traditional approaches use the content-based methods which recommend products based on the product content and an individual users profile. The content of each product is drawn from a descriptor set which describes the products.

The content-based methods give exceptional results because the probability of a user to like a product which is very similar to other products he likes is relatively high. The only drawback is that in case of a scenario where the user has just entered the scene and there are no products he has liked or purchased, it is almost impossible for the system to recommend, this is called the cold start problem from the user scenario. In this work we aim to address the user cold start through three techniques.

Another approach is the collaborative filtering where in the recommendations are made by using the recommendations made to other people. It works on the principle that if there are two people who have similar tastes, the products liked by one will most probably be liked by the other person, this is also gives it the name- Social Filtering. The catch here is that if there is a new product that hasn't been bought or reviewed yet, it takes some time for the machine to recommend it to the prospective users, this is called as the product cold start.

To combine the benefits of both and also to overcome individual drawbacks Hybrid Recommendation Systems have taken over now, which are a blend of the collaborative and content-based recommender approaches and definitely outperform the individual fundamental methods respectively. In this work we discuss a weighted approach which is applied to a combination of three different prediction algorithms and their results are compared.

A. Objective

The objective of this project is to increase the accuracy of hybrid recommender systems by performing comparisons between a linear combination and a weighted combination of the best performing algorithms like SVD, NMF and KNN by using different error measures and as well as address the cold start problem by using demographic information of users with the help of three approaches- Latent Vector Method, Nearest Neighbor Approach and Bayesian Weighted Average.

B. Organization of the Paper

The paper is structured as follows: Section II deals with the previous work that has been carried out in this area Section III highlights the dataset being used. Section IV focuses on the methodology that is applied and used in the aforementioned approaches. Section V gives an insight into the testing and results followed by Section VI which gives the conclusions and Section VII which gives the future scope.

II. LITERATURE SURVEY

Recommendation Systems (RS) have seen a lot of growth since the explosion of the internet and the increase of the amount of data. These can be classified broadly into content based, collaborative, and hybrid filtering [1] [2].

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Concentration Modulation Effect on Weakly Nonlinear Thermal Instability in a Rotating Porous Medium

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ABSTRACT

The present article is to study mass transfer in a rotating porous layer subjected to imposed time-periodic solutal boundaries. A weakly nonlinear analysis is applied to investigate mass transfer in a porous medium. The mass transfer coefficient is calculated by cubic Ginzburg Landau (GLE) amplitude equation. In this article the stationary convection is discussed in the presence of rotating solutal Rayleigh number. The amplitude equation (GLE) is solved numerically to calculate finite temporal convective amplitude. This amplitude is used to find Sherwood number in terms of the various system parameters. The effect of individual parameters on mass transport is discussed in detail in the presence of lower rotational rates. The onset of convection is discussed through the stability curves for stationary and oscillatory solutal critical Rayleigh number as a function of wavenumber. Further, it is found that the mass transfer enhances for modulated system than un-modulated system. Internal solutal number Si is to enhances for higher values and diminishes the mass transfer for lower values. Finally, it is also found that rotation and solutal modulation can be effectively used to enhance or diminish the mass transfer.

Keywords: Darcy convection; Concentration modulation; Rotation; Nonlinear theory.

NOMENCLATURE

A	amplitude of convection
δ_s	amplitude of modulation
d	depth of the porous medium
$\vec{q}$	velocity vector (u,v,w)
G	acceleration due to gravity
k_c	Critical wave number
S_h	Sherwood number
Vas	Solute Vadász number $Vas = \frac{\phi \nu d^2}{K_s \kappa_s}$
P	reduced pressure
S_i	Internal solute number $S_i = \frac{Qd^2}{\kappa_s}$
Ra_S	Solutal Rayleigh number $Ra_s = \frac{\alpha_s g \nu \Delta S K d}{\upsilon \kappa_s}$
R_{0c}	Critical Rayleigh number
Ta	taylor number $Ta = \left(\frac{2\Omega_0 d^2}{\nu}\right)^2$
S	solute
ΔS	solute difference across the porous medium
T	time
(x,z)	horizontal and vertical co-ordinates
α_s	coefficient of solute expansion
β^2	Horizontal wave number $k_c^2 + \pi^2$
χ	perturbation parameter
κ_s	effective solute diffusivity
Ω	frequency of modulation
μ	dynamic viscosity of the fluid
ν	kinematic viscosity$\left(\frac{\mu}{\rho_0}\right)$
ρ	fluid density
ψ	stream function
τ	slow time $\tau = \chi^2 t$

Other symbols

∇_1^2	$\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}$
∇^2	$\nabla_1^2 + \frac{\partial^2}{\partial z^2}$

Subscripts

B	basic state
c	critical
0	reference value

Superscripts

$'$	perturbed quantity
$*$	dimensionless quantity

The Time Periodic Solutal Effect On Oscillatory Convection In An Electrically Conducting Lluid Layer

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Abstract. The present article is to study mass transfer in an electrically conducting Newtonian fluid layer subject to imposed time-periodic solutal modulation. The mass transfer coefficient is calculated by complex Ginzburg Landau (CGLE) amplitude equation. It is a cubic equation involving oscillatory finite amplitude and obtained using solvability condition. A weakly nonlinear analysis is applied to investigate mass transfer in the layer. The oscillatory convection is discussed in the presence of oscillatory solutal Rayleigh number. The amplitude equation (CGLE) is solved numerically to evaluate mass transfer in terms of the various system parameters. The effect of individual parameter on mass transport is discussed in detail. Further the mass transfer is more for oscillatory mode than the stationary mode. Finally it is also found that, solutal modulation can be effectively applied in either enhancing or diminishing the mass transfer.

Keywords: Weakly nonlinear theory, Oscillatory magneto-convection, Complex Ginzburg–Landau model, Solutal modulation.

INTRODUCTION

Thermal convection is the flow of fluid induced by a temperature difference, or gradient. Rayleigh-Benard convection (RBC) is a particular type of thermal convection problem heating a bottom and cooling top of a horizontal fluid layer creates a vertical temperature gradient. And by the laws of thermal expansion, the fluid on the bottom is less dense than that on the top, and creates an unstable situation. The effect of gravity imposes a downward force on the fluid, while the heat transfer imposes an upward force. A variation on this problem was originally studied by Lord Rayleigh in the early (1900), with an attempted explanation of the problem published in a 1916 article.

Study of Rayleigh B´enard convection (RBC) gained lot of attention due to its prominent applications in thermal and engineering sciences. Instability in a fluid layer is to understand the nature of convective flow under some physical constraints. Numerous applications can be drawn related to convective flows where saving energy is a key point. Study of magnetoconvection in a fluid layer is motivated by Thomson (1951), and Chandrasekhar (1961) and numerous applications such as: astrophysical, geophysical, and in particular sunspots. Convection in the earth metallic core and stellar interiors often occurs in the presence of strong magnetic fields. Nakagawa (1957,1959) studied megneto-convection experimentally and reported that at high strength of magnetic field determines the effect of Chandrasekhar number Q on critical
Rayleigh number to stabilize RBC.

Rudraiah (1984), the effect of externally imposed vertical magnetic field on double diffusive convection is investigated. Both linear and nonlinear theories are examined and the stability criterion as well as heat and mass transport presented. It is observed that magnetic field enhances stability criteria and diminished the heat mass transfer. It is pointed that magnetic field can be used to control stability criteria as well as reduce heat mass transfer. Another interesting concept to regulate stability criteria or heat mass transfer is modulation. This modulation concept is either gravity, thermal, rotational, magnetic and solutal etc. The gravity modulation is given by Gresho and Sani (1970), thermal modulation by Venezian, (1969), rotational modulation by Bhadauria and Kiran, (2014) and magnetic modulation by

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On The Location of Zeros of Polynomials with Different Complex Coefficients

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ABSTRACT

In this paper we extend Eneström-Kakeya theorem (Let $P(z) = \sum_{i=0}^{n} a_i z^i$ be a polynomial of degree n such that $0<a_0 \leq a_1 \leq ... \leq a_n$, then all the zeros of P(z) lie in $|z| \leq 1$) for polynomials with complex coefficients the result of [8] have been generlized by relaxing the hypothesis in different ways by considering complex coefficients.

Mathematics Subject Classification: 30C10, 30C15.[2pt]
Keywards: Zeros of polynomial, Eneström-Kakeya theorem.

1. INTRODUCTION

Location of zeros of a polynomial is a long standing classical problem [1,3-5,8,9,11-13]. It is an interesting area of research for engineers as well as mathematicians and many results on the same topic are available in literature. Here we make an attempt to extend some of the known result for real coefficients to complex coefficients. Existing results in the literature also show that there is a need to find bounds for special polynomials, for example, for those having restrictions on the coefficients,there is always a need for refinement of results in this subject. The well known result in the theory of distribution of zeros of polynomials is the following:

Theorem A_1. [2, 7] : *Let* $P(z) = \sum_{i=0}^{n} a_i z^i$ *be a polynomial of degree* n *such that* $0<a_0 \leq a_1 \leq ... \leq a_{n-1} \leq a_n$ *then all the zeros of P(z) lie in* $|z| \leq 1$.

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IMAGE FORMULA FOR SAIGO FRACTIONAL DERIVATIVE OPERATOR CONNECTED WITH V-FUNCTION

A. PADMA AND G.V. REDDY

Abstract. The object of this article is to establish image formula for Saigo fractional derivative operator involving V-function. Corresponding assertions for the classical Riemann-Liouville and Erdélyi-Kober fractional differential operator are deduced, also we develop their image formulas by applying the Beta and Laplace transforms. Further, we point out also their relevance.

1. Introduction

The V-function is defined in [9] as follows:

$$V(z) = V_n^{h_\epsilon,d,g_j}\left(p,\tau,k,w,q,k_m,a_j,b_r,\alpha,\beta,\delta,z\right)$$
$$= \lambda\sum_{n=0}^{\infty}\frac{(-p)^n\prod_{\epsilon=1}^{t}\left[(h_\epsilon)_n+k_\epsilon\right](d+\alpha n+\beta)^{-\tau}(z/2)^{nk+dw+q}}{\prod_{j=1}^{s}\left[(g_j)_n+a_j\right]\prod_{r=1}^{u}\left[(d)_{\alpha n\delta}+b_r\right]} \tag{1.1}$$

where

(1) $p,k,w,q,\beta,\delta,k_\epsilon(\epsilon=1,\cdots,t),a_j(j=1,\cdots,s),b_r(r=1,\cdots,u)$ are real numbers.
(2) t,s, and u are natural numbers,
(3) $h_\epsilon,g_j\geq 1(\epsilon=1,\cdots,t;j=1,\cdots,s)$,
(4) $\alpha>0,\Re(\tau)>0,\Re(d)>0,z$ is a complex variable and λ is an arbitrary constant.
(5) The series on the RHS of (1.1) converges absolutely if $t<s$ or $t=s$ with $\left|p\,(z/2)^k\right|\leq 1$.

For details of convergence conditions of the series on the RHS of (1.1) one may refer to the paper [8]. The V-function defined by (1.1) is general in nature as it unifies and extends a number of useful function such as unified Riemann-zeta function [3], generalized hypergeometric function [1, 21, 22], Bessel function and generalized Bessel function, Struve's function [20], Lommel's function [2, 16], generalized Mittag-Leffler function [5, 12, 18, 19], exponential function and Macrobert's E-function [1] etc. Recently, many researchers have studied in depth level of properties, applications and diverse extensions of a range of operators of fractional calculus (see; [6, 10, 13, 22]). Also on other analogous topics is very active and extensive around the world. One may refer to the research monographs [7] and [11].

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English Language Assessment Testing: Key Strategies for Indian Students

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Abstract

Proficiency in English language is the need of the hour in the present day scenario. It is not sufficient to have a simple degree to get into higher studies or achieve good placement in a reputed MNCs. English language Tests have grown in importance in the aspects study and work overseas. These tests determine the level of proficiency for non-native speakers, and provide a means to compare fluency among individuals. English language exams can be divided into three categories: Academic, Business and General.

Academic English Exams include IELTS, STEP, APTISand TOEFL generally demonstrate the levels of English proficiency.Business English language exams like the TOEIC and BULATS are internationally recognized credentials required by the employers for the level of English in the workplace. General English language exams like the CPE, FCE, KET are used to demonstrate a level of English mastery.

This paper studies the significance of the current English language Testing system, preparation strategies and score bands by shedding the light on the plight of Indian students. It widely discusses the strategies of international boards like Cambridge, British Council and available resources including Apps. The study conducts simple survey on the engineering students who have taken STEP Exam. The findings are presented with an analysis of the performance of Indian students by providing the suitable suggestions. Further, it makes a comparative analysis of these different tests and provides clarity for the aspirants.

Key words: ***English Language Proficiency, IELTS, STEP, APTIS, Skills and Indian students***

Introduction

Currently, English language proficiency is not a mere academic practice as it has taken broader dimensions of international testing. There are internationally acclaimed tests to gauge the candidate's English skills at the global level. IELTS among all, is the most sought after exam by the students all over the world, other tests include BEC (Business English Certificate), TOEFL, APTIS, STEP(The Standardized Test of English Proficiency) initiated by The Hindu paper and so on. This paper studies the significance of the current English language Testing system,

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preparation strategies and score bands by shedding the light on the plight of Indian students. It widely discusses the strategies of international boards like Cambridge, British Council and available resources including Apps. The study conducts simple survey on the engineering students who have taken STEP Exam. The findings are presented with an analysis of the performance of Indian students by providing the suitable suggestions. Further, it makes a comparative analysis of these different tests and provides clarity for the aspirants.

The skills generally tested in all assessment tests are Grammar& vocabulary, Writing, Reading, Listening and Speaking within the time framing. These online tests are supported [illegible] with accurate timing and functionality. These tests will create enormous oppor[illegible] stakeholders. They are the gate ways for the admission into post graduate pr[illegible] recruitment process. They provide an International grading applicable almost globa[illegible]

This kind of an assessment and tests give a professional edge for students with authentication. In the present competitive world, one needs to fitted with competence. The academic competence

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WRITING TECHNIQUES FOR ENGINEERING STUDENTS

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Abstract

This paper tries to present teaching writing skills or enhancing writing skills among the engineering students. In this competitive world it has become very essential for engineering graduates to improve their technical writing skills especially report writing techniques, resume preparation, formal ways of sending emails, letter writing etc. It is very important that the students should learn the process of writing using the right vocabulary following a particular format, following the features of writing like maintaining proper unity, cohesion, coherence. Students have to improve their writing proficiency and have to show professionalism in writing. The teacher has to conduct the diagnostic test and then identify the needs of the students and carefully plan the syllabus and the lesson plans so that the training goes on efficiently and effectively. The teacher has to check the writing proficiency of the students, their standard, their lexical accuracy before starting the training sessions. Materials used in the classroom also have to be authentic materials so that they will help as tools in preparing standard assignments.

Keywords: Engineering, writing proficiency, classroom materials, features of writing, professionalism in writing.

Engineering students need writing proficiency to a certain extent where they can communicate effectively within the organization where they work and also communicate with people outside the organization, with the clients, employees business partners. The students should be able to write letters, emails, reports, resumes, memos, lab reports, field visit reports, data interpretation reports. Many students do not focus on written communication during their four year course of study and they do not understand how much it is going to help them in their professional lives. Based on the requirement of the students the teacher has to plan the writing component of the syllabus aspect and Tailor the syllabus according to the needs of the students. The student stays four years in the college and the curriculum has to be structured in such a way that writing skills of the students also have to be enhanced there should be a separate module to enhance the students writing proficiency so that the students will learn how to deal with writing tasks and communicate in a written format when they start working in organizations.

In the college there should be a specific course that deals with writing for specific purposes it should make the students learn how to communicate with others in the written format and get the response from others. According to Shirisha Deshpande "Designing curriculum is a practical way of language teaching, planning the objectives of the learners so that focus would be on full filling the needs of the learners ultimately achieving the goals and be effective communicators."[2] After the training students should be able to write simple messages which should be clear, simple, accurate, complete and relevant. The written message should have unity, cohesion, coherence and accuracy and students should also learn to use the right linkers in a written text.

The important aspect to be considered while preparing a technical document is that the students should know the difference between a technical document and a general document. The important element of technical writing is its communication. Conveying the right information and how the

Use of Multimedia in English labs of Engineering Colleges

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Abstract

For non-native English users. English is very important because it is widely spoken all around the world. Knowing English allows people to enjoy their life and work no matter where they are. For engineering students whose mother tongue is not English, mastering English is even more important not only for their academic life but also for their prospective career.

Inorder to master the engineering knowledge and skills better, engineering students should own the English language competence. Most of the scientific paper or journals in the world are written in English. Most of the engineering graphsare alsomarked in English. Moreover most Engineering professors in various universities are also conducting their lectures in English. Hence, engineering students should at least master the basic English ability to deal with the countless English lectures, tutorials, labs, projects and papers. Finally, they have to submit their important theses, still in English.

Therefore learning English and acquiring communication skills has become mandatory for all engineering students English Language labs are extremely helpful in achieving this goal. In CBIT, an Osmania University affiliated college, we the faculty have designed various lessons and activities for the labs to make the students proficient in the language.

My paper deals specifically with CALL lab activities (Computer Assisted Language Learning) which are being conducted to improve the pronunciation of engineering students.

Key words: *Proficiency, Multimedia, CALL*

Introduction

This paper explores key problems and possibilities in the use of Multimedia Digital Language Laboratories with Computer Assisted Language Learning (CALL) facilities in engineering and technology institutes in India. In India, language teaching mainly depends upon the chalk

Extensive Reading Activities to Promote Reading Skills among the Engineering Students.

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ABSTRACT

Reading is one of the important skills because it helps the students to become self learners and master proficiency in all other skills. Interest in Extensive Reading should be a most pleasurable activity, provided when students select and read the materials of their choice. In Indian context where English Language is not used outside the classroom, only reading can compensate improving the proficiency among the learners. Very less initiative is taken by the students on extensive reading outside the classroom. In Indian context the inputs on reading on English language are taken from the English classroom. I feel that Extensive Reading plays a prominent role, one of the effective ways to improve language proficiency among the Students. It is very important that students should read widely to become more confident, become good writers, improve their vocabulary, listening and speaking skills. We also find the students developing positive attitude.

The introduction of Extensive Reading course in the curriculum gives lot of opportunities to the low achievers for independence in learning and growth. It is an independent activity where the students have the choice of the selection of the texts and are motivated primarily by the pleasure that they derive in understanding or comprehending the texts. The major drawback for not introducing Extensive Reading in the classroom is there is lot of pressure on the teacher to complete the syllabus.

Krashan argues that extensive reading will help the students in language learning and language acquisition, provided that the learners meet certain conditions. These include exposure to language, choice of material and a relaxed and tension free learning environment. It can enhance learner's general language competence. Extensive reading practice provides automatic word recognition and decoding of the symbols on the printed page.

India's Real Fiction Meets World's Popular Cinema - Film Adaptation of Vikas Swarup's Q&A

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Abstract

The Indian Foreign Services (IFS) official Vikas Swarup penned "Q & A", a work of fiction that portrayed the ground realities of Dharavi, a slum in Mumbai. A few years later Danny Boyle adapted the book and created an improbable yet scintillating success making it the best British film of that decade which portrayed Dharavi's rooftops in the most cinematic technique possible. In this context, this research paper attempts to explore and analyse critically, the purpose and the socio-political connotations such adaptation reverberated by an all new portrayal of Indian story on the celluloid both for the local and global audiences. Amitabh Bachchan commented on Slumdog Millionaire that "if the film projects India as Third World's dirty underbelly developing nation and causes pain and disgust among nationalists and patriots, let it be known that a murky underbelly exists and thrives even in the most developed nations." "(Times of India & The Guardian, 2009) So, what could be the hidden purpose behind such portrayal by Danny Boyle and How were the Indian reactions spoken or otherwise and why? are a few issues that are intended to explore and present in this paper.

Keywords: Popularity, Reality, Fiction, Adaptation.

Introduction

A work of fiction be it a novel or a film is boundary less but when it is viewed from social or political perspectives, there needs a critical debate and clarity. When Danny Boyle's film adaptation of Vikas Swarup's début novel *Q & A*, published in 2005, was released worldwide in 2008 as *Slumdog Millionaire*, many critics and viewers harped on its Dickensian overtones, but so far no thorough analysis of the novel and its adaptation has really substantiated this claim. It also tries to aim at analyzing the reception of these two twenty-first-century works, and how they have led to contradictory and even incompatible, but nonetheless extremely relevant interpretations of the novel in its cinematic adaptation.

Q & A and *Slumdog Millionaire* cannot be denied that faint but distinctive echoes lead readers and viewers to envisage the novel and its adaptation as loose transpositions to Indian realities. The novel endows the hero, Ram Mohammad Thomas, Ram is the narrator of his own life, and his early years. He is alone in the world unsure who abandoned him but fancies

it might have been his mother whom he pictures to himself as "a tall and graceful young woman, wearing a white sari" (Q & A 36). In his "mind's eye," he sees her "leaving the hospital after midnight with a baby in her arms" (36). The scene he imagines recalls the poignant and dramatic in contrast to the scenes in Slumdog Millionaire its film adaptation. Jamal Malik's mother is shown as taking her sons to school, worries about their education and wellbeing. Rain is used as a metaphor for portrayal as she hopes for better future for her sons. The action and weather conditions are otherwise extremely similar: The wind is howling. Her long black hair bows across her face, obscuring her features. Leaves rustle near her feet. Dust scatters. Lightning flashes. She walks with heavy footsteps toward the church, clutching the baby to her bosom. She reaches the door of the church and uses the metal ring knocker (Q & A 36)

The fictitious elements of reality:

Vikas Swarup's surreal, naked narration of life and politics around Dharavi, Mumbai are intriguing as they reveal the socio-economic manipulations and how the youth desperate for a significant change in their lives in modern India. Such story in its adaptation of such episodes from the novel—the paradox portrayal made it easy for people to understand it as a mere demonstration effect. This circuitous reference to reality, via the

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Abstract

Information and Communication Technologies (ICTs) are considered to be a vital factor in achieving sustainable development of education. Education for emerging societies requires ICTs to facilitate large scale learning needs for social and economic development. ICTs have thus become a critical tool for any professional training aimed towards the cause for any accomplishing development in a specific segment. Technology today plays a vital role in modernizing global education system. Mobile phones, PDAs and Tablet Pcs are found to be emerging as powerful pedagogical innovation in the area of teaching and learning process. These devices facilitate the easy interaction among instructors and learners in a time bound and truly collaborative manner.

In this context, an attempt is made to find the usage of ICT based resources and barriers in usage of these tools by teachers of various schools and colleges of Secunderabad and Hyderabad.

Keywords:

Information and Communication Technologies (ICTs), Personal Digital Assistants (PDAs), Personal Computers (PCs), Wireless Fidelity (Wifi), Massive Open Online Courses (MOOCs), Human Computer Interaction (HCI), Kaiser-Meyer-Olkin (KMO), Higher Education Institutions(HEIs)

Introduction

Education is considered as the most important driving force for fostering economic and social development in both the developed and developing countries. In this context, Information and Communication Technologies (ICTs) are considered to be a key factor in achieving sustainable development through an effective education system. ICTs have the built-in potential to innovate, accelerate, enrich and motivate teachers and students in active learning process. It is hence necessary and important to ascertain various means and methods to ensure that good quality education is easily accessible and affordable to all, in a cost- effective manner, with the use of latest technology and various online resources that are available. India with a billion-plus population of which a high proportion is found to be youth and there is thus a large potential for growth in its formal education system. The demand for imparting quality education in developing countries like India has been increasing quite phenomenally.

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IDENTIFICATION OF TOURISTS FROM PUBLIC COMMUTERS USING TRANSPORT DATA AND PREDICTING NEXT TOUR

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ABSTRACT

Traveling recommendation systems have become very popular applications for organizing and planning tourist trips. Tour Sensor, is a framework for tourist identification and preference analytics using city-scale transport data (bus, subway, etc.). This work is motivated by the observed limitations of utilizing traditional data sources (e.g., social media data and survey data) that commonly suffer from the limited coverage of tourist population and unpredictable information delay. Tour Sensor demonstrates how the transport data can overcome these drawbacks and provide better insights for various stakeholders, typically including travel agencies, transport operators/drivers and tourists by themselves. Specifically, we first propose a graph-based iterative propagation learning algorithm to recognize tourists from public commuters. And then, taking advantage of the trace data from the identified tourists, we then design a tourist preference analytics model to learn and predict their next tour, where an interactive user interface is implemented to ease the information access and gain the insights from the analytics results. In this work a machine learning algorithm is used to identify the

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Robust Frequent Item set Mining on Massive Data

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ABSTRACT

Frequent item set mining is one of the significant operationswhich returns all item sets in the transaction table, that occur as a subset of specified fraction of the transactions. The existing algorithms fail to compute frequent item sets efficiently on massive data, since they either require multiplepass scans on the table or construct complex data structures which normally exceed the available memory on massive data. This paper proposes a novel pre computation-based frequent item set mining (PFIM) algorithm to compute the frequent item sets quickly on massive data. PFIM treats the transaction table as two parts: a large old table storing historical data and a relatively small new table storing newly generated data. PFIM first pre constructs the quasi-frequent item sets on the old table whose supports are above the lower-bound of the practical support level. Given the specified support threshold, PFIM can quickly return the required frequent item sets on the table by utilizing the quasi-frequent item sets. Three pruning rules are presented to reduce the size of the involved candidates. An incremental update strategy is devised to efficiently re-construct the quasi-frequent item sets when the tables are merged. The extensive experimental results, conducted on synthetic and real-life datasets, show that PFIM has a significant advantage over the existing algorithms and runs two orders of magnitude faster than the latest algorithm.

KEYWORDS–*Frequent item sets, Pre-computation based frequent item set mining, quasi-frequent item set, minimum support Threshold*

INTRODUCTION

In practical applications like as data mining, software bug detection, spatiotemporal data analysis and biological analysis we use the important operation Frequent itemset mining which is used to mine the frequent itemsets. In the proposed algorithm given transaction table contains a set of items, frequent itemset mining returns all sets of items whose frequenciesare above a given threshold. The existing frequent itemset mining algorithms can be classified into two groups:candidate-generation-based algorithms and pattern-growth-based algorithms. In frequent itemset mining, the number of the frequent itemsets normally is sensitive to the value of the support threshold which is very small there will be a large number of frequent itemsets and it is difficult for the users to make efficient decisions. if the support threshold is large, there may be no frequent itemsets or the interesting itemsets may be missed. So,a proper support threshold is mandatory for the practical frequent itemset mining and the users often need to perform frequent itemset mining for several times before the

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ORGANIZING IoT HEALTH CARE BASED ON FOG COMPUTING: CORONA TASKS SCHEDULING BASED ON THE PRIORITY

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Abstract

IoT in HealthCare is an important and emerging area as Mobile health and monitoring patients remotely is possible with the current available technologies. At present worldwide the CORONA patients and CORONA death rate is increasing and there is no place for patients in the hospitals. This is the actual time to utilize IoT HealthCare services and since it is related to health no delays are encouraged which may cause due to transmission of data to the cloud and then back to the application. Hence we come up with a new solution which introduces fog computing in between sensor and cloud computing so that much of the processing is done in fog layer which can reduce the amount of data to be transmitted between sensor and cloud and reduce the delay in transmission of data that improves the performance of IoT HealthCare System. Irrespective of the amount of data generated we need to schedule these tasks based on the priority that is severity of the disease.

Introduction

IoT is defined as the computational devices that are interconnected through the Internet and are embedded in our activities that are able to send and receive the data [1]. IoT is opening doors to the intercommunication among things and individuals and among things. IoT stood as the entrance

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Keywords: Cloud Computing, Fog Computing, IoT, Task and Scheduling.
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Cluster Sampling to Improve Classifier Accuracy in Continuous Data

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Abstract

Clustering techniques are important in drawing different groups of similar data to make decisions. There is variety of clustering techniques available in data mining and Machine learning fields. Similarly a good sample taken for training improves classifier accuracy. Sampling techniques like Adaboost and Boosting are used in many classification models. But these sampling techniques are not good enough unless many epochs were done. In our approach we use two step procedures. First step uses the data and make the data into clusters of required size. The clustering process may use any existing clustering techniques. Second step uses sampling techniques to make different levels of samples. These samples drawn from clusters contain all kinds of data from the original data. When the samples drawn directly from the original data, it may not contain all kinds of data and is not possible for large scale of data. Sampling of the data is necessary for any modelling and is an important aspect in data mining. Our approach of cluster sampling shows superiority to any other sampling methods in improving classifier accuracy. Cluster samples consist all verity of data with equal proportion. Cluster sampling leverages the tree based ensemble models to handle categorical, numerical and mixed type of data. Classifiers modelled on cluster sampling samples shown good accuracy.

Key words: Clustering, Classifier, Sampling, Adaboost

I. INTRODUCTION

Grouping the entire data into different partitions with similarity Clustering algorithms is an unsupervised learning. Useful patterns can be identified and characterized into the groups using the clustering algorithms. There are many challenges still existing in clustering process.

Classification is another important domain in data mining for training the models using the available data with high precision. In modelling the data, traditional sampling methods are used. In real life data there is a high dimensionality. It is another big challenge for clustering. These challenges are very high in dealing with Euclidean distance measurement. The curse of dimensionality arises when the objects are in equidistance in any cluster [4] and NN problem can also be ill defined [5]. Real life data may contain noisy, irrelevant and redundant data which leads wrong patterns from the clusters. Eliminating these objects also very important process. Outlier analysis is another important method to eliminate outliers [2][3]. Data normalization is another technique to transform the data, which plays an important role in data mining. To make transformation of the data any distribution methods are useful. This transformation is very important to train correct classifier. Distribution is different for different types of data. Distribution of categorical data remains an important task. Majority of data related applications deal with the categorical or mixed data.

We propose a cluster sampling algorithm, to improve the classifier accuracy and it addresses many challenges in data mining. Our algorithm starts with clustering and then distributing the data from clusters to make the samples.

II. RELATED METHODS

There are different types of clustering algorithms. These are divided in to four categories as Partitioning-based, density-based, hierarchical-based and grid-based clustering algorithms.

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THE COVID-19 PANDEMIC'S IMPACT ON CLOUD STORAGE

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ABSTRACT

The Cloud Computing can be defined as the set of resources or services that cloud providers provide to users through the Internet according to their demand. It communicates everything through the Internet as a service based on user demand, for example network hardware, operating system, resources, storage, and software. When each company moves its data to the cloud, it means that it uses the storage service provided by the cloud provider. So that data needs to be protected from unauthorized access, modification or denial of services, etc. In the digital era, Cloud computing is very playing a crucial role especially in the Covid-19 pandemic. The huge data are stored in the cloud as compared to before corona. The worldwide effect of COVID-19 on cloud market size is projected to rise over the forecast period from $233 billion in 2019 to $295 billion by 2021. In light of the innovation, the software as a service (SaaS) arrangement fragment of the market is extended to hold a bigger market size during the estimate time frame. With the ascent in the instances of COVID-19, cloud programming arrangements are confronting significant hit. There are a ton of verticals of cloud, for example, fabricating, shopper merchandise, and retail, and so on. In any case, companies have changed their needs, for example, companies are using cloud mechanization and expanding their online nearness by creating trade sites on cloud stages to diminish the effect of COVID-19 on profitability and operational productivity. Such use cases are advanced in this COVID-19 pandemic. People are using online mode for meetings, attending classes through various software's like Zoom, Google Meet, Microsoft Teams, Goto Meeting, WebEx etc., In this paper, We are reviewing the how cloud storage usage has increased based on the study of various cloud providers.

Keywords: Covid-19; Software as a service; Cloud computing;

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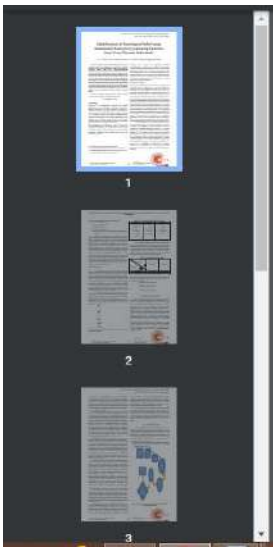
ABSTRACT

While agriculture's share in India's economy has progressively declined to less than 15% because of the high development rates of the industrial and services sectors. First, almost seventy five percent of India's families rely upon rural incomes. What's more, third, India's sustenance security depends on delivering grain crops, as well as increasing its creation of fruits, vegetables and milk to satisfy the needs of a developing populace with rising incomes. The target of the paper is to design an agriculture entrance which provides solutions to farmers and stake holders of agriculture. The farmers can think about government schemes and market data. Agriculture is a lifestyle, a convention, which, for a considerable length of time, has shaped the idea, the viewpoint, and the way of life and monetary existence of the general population of India. The appearance of present day technologies toward the start of the last century has acquired improvement of various technologies, which has substantially increased the yields of various crops[3]. This portal provides various documents related to Department of Agricultural Research and Education, Grants, Ministry of Water Resources, River Development and Ganga Rejuvenation , Grants, Department of Agriculture, Cooperation & Farmers Welfare and Department of Animal Husbandry Dairying and Fisheries.

Keywords: Agriculture, Farmer, Rural Economy;



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Identification of Astrological belief using Sentimental Analysis by Capturing Opinions from Cross-Domain Individuals

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Abstract: *Astrology usage is substantially composed of the belief and opinions by individuals in recent times. Astrology describes a huge set of predictions by using a wide range of horoscope charts along with scientific/mathematical computations. Planets movement around twelve houses is the vital thing for Astrological specifications. Astrology is having mutual sides of belief in proportionate and the belief is identified by using concepts like Sentiment analysis, Naive Bayes classifiers and others. Sentiment Analysis specifies the odds in-favor and against the concept. The current study describes a model to identify the belief in and against cases on Astrological belief; also identifies the deviated opinions with the help of various features using confusion matrix. Training, Tuning and other analytical activities are used to build and verify a model for accuracy. The present study is mainly emphasized on identifying the belief, which is very*

Although some systems are generating dynamic recommendations without user thought, recommender systems should not only be intelligent but also have to identify tendencies of users [19]. In recent times media is also influencing people in vast set of scopes and Astrology is one such kind. People are also willing to know about their future to make their life run in a smooth passion. Feature similarity and divergence plays a vital role in identification of source domain for a specific domain [3].

B. Sentiment Analysis:

The main reason behind the lack of belief on Astrology is that astrologers' provide quality services to persons rather than universal rules and standards [6] and so the belief on

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A Conceptual Model of Hybrid Recommender using Big Data and Machine Learning Approach

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ABSTRACT

An exponential growth in tourism data had recorded online in the past decade due to the recent developments of web technologies and communication means. At the same time, the information overload incurred on web search engines challenges the quality of recommendations to the users although various recommenders have been developed. The main objective of these recommenders is to attract the tourists in turn promote tourism by means of advanced artificial intelligence and big data technologies. In this paper, a conceptual model is proposed for hybrid recommendation system for tourism data that considers the tourist preferences. Hybrid recommender system is the combination of the content based and collaborative filtering recommenders, which absorbs the benefits of both approaches and leads to the quality recommendations. For this, a deep learning model is developed to study the patterns in the tourism data and recommends the based on the tourist profile.

Keywords : Recommender Systems, User Profiling, Content-Based Filtering, Collaborative Filtering, Hybrid Recommender System; E-Tourism

I. INTRODUCTION

other similar users with same kind of preferences [8]. The history of user profiles and what items they like,

Integrating IOT and Fog Computing for solving time sensitive Applications: The need of the hour

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Abstract: With the quick advancement of Internet and Cloud technologies, many numbers of physical objects are linked to Internet and are communicated with each other to solve many real-world problems without human intervention. It delivers great benefits to cater the needs of our daily life and in turn significantly improves the quality of our life. Millions and trillions of devices are connected together which generates a very huge data and a platform is required in order to process this large amount of data generated by these massively connected devices. Technologies like Cloud computing and Big Data Analytics can be employed to address this problem. But, the traditional Cloud Computing Paradigm faces some challenges like high latency, bandwidth, Network failure and reliability. In order to address these challenges, the concept of Fog Computing paradigm is introduced. Fog Computing extends the Cloud Computing services to the edge of the network. Fog computing is a virtualized platform that provides storage, compute and other network services between end devices and cloud computing. The Fog Computing paradigm utilizes local computing resources and minimizes latency, conserve network bandwidth, address security concerns and operate in reliable and secure environment. Cloud Computing fails in most of these requirements. Fog Computing reduces the amount of data that needs to be transported by filtering the data and thereby improving the efficiency. In this context Fog Computing provides a pragmatic and viable solution to most of real world and time-sensitive applications like autonomous vehicles, smart grids, wireless sensor and Actuator Networks (WSANs), smart Homes or buildings, smart traffic lights, Healthcare monitoring etc. This paper provides state - of – the – art of Fog Computing including the architecture characteristics and benefits. An attempt is made to address the challenges of integrating IOT with Fog Computing and this paper also presents some real world, time sensitive IOT applications and future directions of integrating Fog Computing, Cloud Computing, Big Data Analytics and Internet of Things.

Keywords: Internet of Things, Fog Computing, Cloud Computing, Big Data Analytics Smart grid, Autonomous cars, Fog as a Service, Smart Home, Health monitoring WSAN.

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BIG DATA CLASSIFICATION APPROACHES TOWARDS IMPROVING TRADITIONAL CLASSIFICATIONALGORITHMS

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ABSTRACT

Data give power, which companies and individuals of every type are looking for means to collect, manage, and utilize upon. Even though documents are not essential like gold or cattle, several companies and individuals recognize, just about intuitively, that there are great possibilities in the vast volumes of information available to the contemporary community. Data mining is a crucial way to employ records by dynamically refining it via the use of progressing technology—Big Data issue large-volume. These growing records collections are sophisticated and also have various independent resources. Earlier modern technologies were unable to deal with storing and processing huge files; therefore, Big Data idea begins.

Index Terms : Big data, data mining, classification

I. INTRODUCTION

Along with the swift growth of Internet interaction and a partnership, Internet of Things and Cloud Computing, large amounts of data have come to be progressively on call at substantial volumes (petabytes or additional). Such data comes from a more extensive selection of sources and layouts featuring social media communications, web pages, click on flows, internet deal, emails, online videos, sounds, pictures, posts, search questions, health and wellness reports, science data, sensing units, cell phones as well as their apps, and so on [1] Depending on to the 2014 IDC 'Digital Universe Study' [2], 130 exabytes (EB) of globe's data were created as well as stored in 2005. The volume grew to 4.4 zettabytes (ZB). It is increasing in measurements every two years as well as is projected to grow to 44 ZB in 2020 [2] In 2012, IBM predicted that 2.5 quintillion bytes of data were created day-to-day [3]

The fast growth in the quantity of data resulted in makes up the big data sensation. Since 2004, the enthusiasm of search on "big data" in Worldwide has enhanced significantly, depending on Google Trends (view Figure 1) [4]

There are three characteristics utilized to determine big data (additionally referred to as, the 3V's of big data): amount as data always keeps developing, variety as the sort of data varies, as well as speed as it is continually coming in very quickly into the systems [1]

[5] As a result of these qualities, the existing standard techniques and innovations do certainly not have the ability to deal with storing and handling of this data. As a result, brand-new technologies have been actually established to manage this big data sensation. IDC defines big data modern technologies as "a new creation of modern technologies as well as architectures created to remove worth fiscally coming from big volumes of a wide array of data through enabling higher velocity

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NETWORK SECURITY THREATMODELS AND SOLUTIONS TOWARDS PROGRAMMABLE NETWORKS

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ABSTRACT

It is crucial to protect the whole distributed infrastructure, especially its availability in case of denial-of-service attacks. A security framework for programmable networks may provide security solutions at different levels of abstraction. Active networks mainly propose a network-layer approach, by extending the packet format to include security information. Mobile code technologies tend to provide security tools at the application layer to integrate with standard external infrastructures, such as public key ones.

Index Terms : network security, programmable networks, security threat models

I. INTRODUCTION

NetworkSecurityreferstoallsoftwareandhardwarefunctions,accountability[1],features, administrative and management, measures, characteristics[2], access control, information in a network and operational procedures are acceptable level to protect software and hardware. Cryptography is one of the emerging technology used for providing security to data. The authorized user should provide user ID and password or any other unique data to access secured data[3]. It used to keep the information more secure and safe. There are four network security problems: nonrepudiation, secrecy, confidentiality and authentication. Secrecy is a term used for keeping the data more confidential without accessed by unauthorized users. Authentication need to keep the data moresensitive.Nonrepudiationalwaysdealswithsignature.MessageIntegrityusedtoensuret hesecureconnection between sender and receiver[4]. Cryptography is the process of writing in secret code. Cryptography has many applications like computer passwords, ATM cards, e-commerce, electronic commerce, business applications and also in some other applications. Cryptography is nothing which is closely related to cryptology and cryptanalysis. Two technologies are used in cryptography. Encryption used in sender side and the decryption is used in receiver side[5]. The decryption cannot perform without knowledge of encryption. Cryptanalysis is used for “breaking the code”. The area where we have both cryptanalysis and cryptography is called as cryptology. There are many powerful techniques but among them AES is one of the most powerful and useful techniques. Cryptography use many algorithms and someprinciples.

AODV and AntHocNet for Mobile Ad Hoc Networks Performance Evaluation Analysis

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1. Abstract

Different routing protocols used in MANET have impact on the performance of the network. Lack of knowledge is the cause of concern in decision making. In this paper we made a comparative study of two well known routing protocols such as Ad-hoc On Demand Distance Vector (AODV) and AntHocNet through simulations. We evaluate the performance of the two protocols by using ns-2.34 with different simulation environments. The metrics used to evaluate performance include packet delivery ratio (PDR), normalizing routing load, average delay, average throughput, average jitter, and routing overhead at different pause times, different number of nodes, different Simulation Time and different node speeds. Our extensive simulations revealed interesting results. AntHocNet showed poor performance in all aspects when compared with AODV.

Index Terms – MANET, routing protocols, AODV, ANTHOCNET

2. INTRODUCTION

Mobile Ad Hoc Network (MANET) is flexible, self organized and quickly deployable network that can be used for communications when there is a situation where normal communications are disrupted or demolished. MANET has become ubiquitous and used widely as and when required [1]. Ad-hoc On Demand Distance Vector (AODV) is one of the routing protocols in MANET which is widely used as it supports both unicast and multicast routing [2]. Reducing overhead in MANET is very important research area in MANET. Besides, energy efficiency is essential in the network as it is energy constrained [3]. Mobility has its impact on the routing protocols. Different routing protocols in MANET provide different performance with respect to mobility [10]. MANETs can be integrated with other networks including Internet for higher utility [12]. AntHocNet is another protocol which is being used in MANET. In this paper we compare these two protocols and evaluate their performance with different environments, different metrics at different nodes, pause times and areas.

Our main contribution in this paper is performance evaluation of AODV and AntHocNet in different simulation environments using various performance metrics such as PDR, normalizing routing load, average delay, average throughput, average jitter, and routing overhead at different pause times, different number of nodes, and different speeds. The

A STUDY ON FINANCIAL PERFORMANCE OF INDIAN PUBLIC SECTOR BANKS UNDER CAPITAL REGULATIONS OF BASEL NORM III

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ABSTRACT- The present study attempts to determine 21 Indian public sector banks' financial performance by considering the Basel III norm's capital regulations. The major constrain for banks is the Global financial crisis through which there was a decrease in financial health and quality of asset management of the banks. Failure in the banking sector can lead to a decrease in the country's financial stability, which affects the economy as a whole. In this study, Return of Assets (ROA) and Return on Equity (ROE) are used to measure financial performance. The profitability of 21 Indian public sector banks is determined from 2007-2019. This study helps the bankers and investors to determine the opportunities in the banking sector.

Keywords: ***Basel Norm III, ROA, ROE, Profitability of banks***

I. Introduction

The banking sector is one of the major sectors that play a significant role in the country's financial aspects. Because of the activities which are being performed by the banks, they have been exposed to many types of risks. The flow of money in the economy is being carried through banking institutions in the country. In recent times, the assessment of the performance of the banking industry has got greater significance. The banks' performance is deteriorated day-by-day because of the privatization of banks, high competition, and an increase in fraudulent activities in the banking industry. Banks are collapsing because of their inability to bear the risk. Therefore, Banks have to keep some amount of capital as security to offset the risk of non-recovery.

Basel committee introduced norms for banks to manage the risk, which is called Basel norms for banks. In 1988 Basel Committee on Banking Supervision (BCBS) in Basel, Switzerland released Basel I norm in which the minimum requirement of capital has to be maintained in the banks is determined. A set of new rules were introduced as Basel II to overcome the disadvantages of Basel I.

Assessment of Customer Purchase Behavior for Electric Vehicles in New Delhi

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Abstract

India is gaining notoriety for its worst polluted environment as confirming by presence of 6 Indian cities in the list of top 10 polluted cities of the world in 2019. The polluted environment problem is devastating by Motor vehicles' emission. Thus, the Indian government has started taking initiatives for promoting ecofriendly segment in Automobile sector to control the Air Pollution. So, the present study is attempting to assess the awareness of Electric vehicles among Indian customers and to determine the factors that have highest impact on buying decisions of customers for Electric vehicles. Primary data from 250 respondents who are residing in New Delhi through a structured questionnaire is collected to achieve the objectives of the study. Data is analyzed through Descriptive statistics and Exploratory factor analysis. It is ascertained that either the customers are unaware of existing Electric vehicles that are offered by Automobile companies in India or if they are aware, most of them are not preferring Electric vehicles as they find them unsuitable for their commuting needs due to various perceived drawbacks viz. inappropriate roads and unavailable charging stations, no re-sale value, poor technical features of present Electric vehicles etc. Moreover, the customers are unaware of basic feature of Electric vehicles and their positive effect on environment and economic problems of India. It is further determined in the present study that customers will be considering technical features, post buy services and availability of charging stations as primary parameters while taking purchase decision of Electric vehicles.

Key words: Customers, Electric Vehicles, Factor analysis, Hybrid Vehicles, NEMMP 2020, Purchase decisions.

DIFFUSION OF LIQUID HAND WASH INTO RURAL MARKETS

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ABSTRACT

The purpose of this study is to understand how the liquid hand wash entered into the rural markets with a very low penetration rate of 10% when compared to 99.9% for soaps. And did the companies succeed in marking people aware of their product with their product strategies by facing competition from their big brand companies. The main objective of this research was to find out number of brands that the people in rural areas of Andhra Pradesh are aware of, how they use the product, what are the factors influencing them to buy the liquid hand wash and their perception towards the liquid hand wash. On the basis of the study it was I found that the hypothesis was properly justified. Among the respondents, majority were aware of Liquid hand wash, and Hygiene influenced the purchasing behaviour of the buyer. This study shows that the people in rural area are aware of liquid hand wash, they use liquid hand wash as it is more hygienic and helps them stay healthy. Also, price, natural ingredients, packaging, foaming and fragrance are some of the factors that influences them during buyingprocess.

INTRODUCTION

Sanitation is a critical issue as it is linked to both human health and basic dignity of life. Poor sanitation directly results in not only decline in the quality of life but also quantity of available water resources. As such the problem of sanitation attracted the attention of world leaders with greater degree of seriousness than ever before. This was highlighted during World Summit on Sustainable Development at Johannesburg in 2002, where the existing Millennium Development Goals (MDGs adopted by the United Nations in New York in September 2000) were expanded to include the sanitation target of halving the proportion of people without access to sanitation in 1990 by the year 2015. It is argued that poor access to sanitation

SUSTAINABLE DEVELOPMENT OF TEXTILE INDUSTRY THROUGH INNOVATIVE TECHNOLOGY AND OPERATIONAL MANAGEMENT SKILLS: INDIAN SCENARIO

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ABSTRACT

Fashion has dovetailed the diverse upcoming technologies overtime augmenting the growth of textile industry in combination with efficient management proficiency. E-commerce acts as a sturdy catalyst for economic development making possible maximum inculcation of creativity. Customer, today's pivot of the ship has given open challenge to many through its customized demand. The integration of information and communications technology (ICT) in business has heavily improved inter and intra organizational relationships. Specifically, the participation of customers for enabling mass customization as well as cost effectiveness through the above techniques aids in improving productivity. Internal management processes of recruitment, training, internal information-sharing, video-conferencing and employee services are enhanced through electronic application of ICT conjugating apposite flow of data sharing between production and sales force. Still, there are lots of promises in store yet to be catered in this growing and opportune industry in a culturally diverse country like India. Risk of channel conflict between existing and new profile customers, computer illiteracy in rural areas, capital budgeting decisions for redesign, restructuring involving commitment of huge funds with scarce resources are few limitations to count for. However, the thought process of "Think globally and act locally" shall counter the above.

Keywords: E-commerce, Fashion, ICT, Internal Management processes.

SUSTAINABLE DEVELOPMENT OF TEXTILE INDUSTRY THROUGH INNOVATIVE TECHNOLOGY AND OPERATIONAL MANAGEMENT SKILLS: INDIAN SCENARIO

Unity without uniformity and diversity without fragmentation applies to a culturally diverse country like India. India has many states, languages, religions, yet it has peculiar clothing that change with states and cities. Indian clothing will keep us spellbound with its alluring contrast and striking features that beholds its captivating beauty that lies in its 'unity in diversity'.
Fashion in India is as diverse as it can get. Rural areas and urban cities dressing style vary a lot. This is because of the cosmopolitan nature of the crowd, foreign influences and the liberal socio-economic pace. Metro fashions in India for men and women bear the distinct imprint of the western world. Men and women are seen wearing the latest western wear like trousers, shirts and skirts. A blend of western and ethnic wear usually dominates formal occasions in the big cities.

India is no longer the place to source exotic textile and embroidery only. Indian designers are now going global. Indian clothing like the saris and the salwar kameez are receiving global attention and more and more people are being fascinated with the same thereby increasing posing greater challenges for textile industry.

A Study on Price Action Patterns (Inside Bar and Outside Bar) Formed at Prime Numbers with Reference to Equity Stocks

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Abstract - **An investor in the stock market is concerned in analysing the price movement of stocks. Prices in the stock market fluctuate because of continuous buying and selling in the market. The basic approaches used in analysing the share price movements are fundamental and technical analysis. Candle stick patterns provide an immense advantage to investors. As such Technical analysis is a tool that helps to forecast the price fluctuations of stocks. Candlestick is a method of communicating information regarding change in the price of the stock. Candlesticks can show whether the buyer or seller has control over the market. This research paper seeks to understand and study the candlestick patterns especially inside bar and outside bar when they occur at the prime numbers. The study is confined to companies listed in Nifty pharma and is based on historical data and investor perception.**

Key Words: Prime Number Bands, Technical Analysis, Inside Bar, Outside Bar, Intraday Trading.

I. INTRODUCTION

Technical analysis is a tool/method which is used to forecast the probable future price movement of a stock. Along with fundamental analysis, it is one of the two main ways to analyse markets and includes seeing the past market performances in terms of price movements, moving averages, volume, Candle stick chart, Point and figure chart, Relative strength analysis and various statistics.

Chart indicators provide distinctive and brief information and are able to provide data about what is doing at what period of time. Candlesticks patterns been one of the technical tools play a very important role in quantitative trading strategies.

II. CANDLESTICK PATTERNS

In the 1600s, the Japanese have developed a method of technical analysis to analyze the price of rice contracts. This method is called Candlestick Charting in today's terminology. Munehisa Homma (a.k.a. Sakata), a rich Japanese business man started trading at the local rice exchange during 1750.

Japanese candlesticks offer an Opportunity to the trader to perform short-term trading activity. Candlesticks can show whether the trader can buy or short sell the stock as it gives an idea about who has control over the market (the buyers or sellers). The highs and lows are described as supports and resistance levels. The candlestick charts are interpreted based on the pattern observed. There are various types of patterns that can be observed in the candlestick chart.

The paper by Caginalp and Laurent (1998) is one of the first empirical studies on candlesticks. They used a z-test to study and analyze eight three-day reversal candlestick patterns for all S&P 500 stocks over the time-period 1992–96, and claimed that candlestick analysis has a good predictive value.

Another study by Goo et al. (2007) revealed that they utilized the daily data of twenty-five stocks in the Taiwan Top 50 Tracker Fund and Taiwan Mid-Cap 100 Tracker Fund over the time-period from 1997 to 2006, and found that there was a strong support for candlestick techniques. Meanwhile, they suggested that the performance of candlesticks can be more improved further by implementing stop-loss strategies.

Zhu (Zhu, Atri, & Yegen, 2015) concluded that certain candlestick patterns are effective for particular kinds of stocks in the Chinese exchanges. Xie et al. (Xie, Zhao, & Wang, 2012) challenged the academic skepticism and claimed to have demonstrated that candlesticks provide predictive power based on past performance using S&P 500 data.

On the negative side; in a seminal case study, Horton (Horton, 2009) examined candlesticks patterns as a method of intraday technical analysis for 349 stocks from Commodity Systems Inc. (CSI), with 349 randomly selected companies.

Prado, et al (Prado, Ferneda, Morais, Luiz, & Matsura, 2013) replicated a study performed on the U.S. Market, and applied these strategies to the Brazilian market. Not only

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DESIGN ENGINEERING

A STUDY ON INTRADAY PRICE ACTION PATTERNS AND TRADING VOLUME RELATIONS IN THE STOCK MARKET WITH SPECIAL REFERENCE TO NIFTY IT COMPANIES

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Keywords: Technical analysis, Candlestick patterns, Volume, etc.

ABSTRACT

In the recent scenario, investment has been becoming a vital aspect for every earning individual which he thinks most probably to do certain amount as an investment at some point of time. In the available options, investment in stock market is not only rewarding but also risky. When a decision is required to be made, the term 'analysis' comes into the picture. Analysis includes both fundamental analysis and technical analysis. For predicting short term trends in financial markets, technical analysis is used. This study focuses on technical analysis using Price action movements and volume analysis in select stocks of Indian IT sector which are listed in NSE. Time period taken into consideration was from April

DESIGN ENGINEERING

A STUDY ON INVESTMENT PATTERN OF SALARIED CLASS DURING COVID-19 IN TWIN CITIES OF HYDERABAD, INDIA

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Keywords: Investment, Salaried class, Behaviour, Pattern, Savings etc.,

ABSTRACT

Investment is the allocation of funds for getting the return on it. It is the commitment of funds which have been saved from current consumption with the hope that some benefits will accrue in the near future. This research aims to study and understand the behavioural patterns of investments among the salaried people working in different sectors in twin cities of Hyderabad during the pandemic. The investment pattern varies from person to person and there are various investment avenues available to invest. The study also focuses on identifying the factors considered for an appropriate investment. The study is based on the

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An Empirical Examination of Employee Perception Towards Organizational Climate

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Abstract

Every organization irrespective of its size and nature needs to focus on the ways to create congenial relationship with its employee so that organizational goals can be met. One of the factors that can contribute to this is, creating a better Organizational climate where employees become more productive .When employees perceive organizational climate to be positive there is lot of commitment exhibited by them, which makes them engaged with the work by developing a right kind of psychological contact with the organization. Having understood the benefits of Organizational climate, this study attempts to measure the Organizational climate of IT companies by considering the data collected from convenient sample of 122 IT employees from Twin cities of Telangana state. The 50 item standard scale "CLIOR" is used for the study. The collected data is analysed SPSS 26. The results revealed that the respondents perceive their job, innovation Contribution are appreciated and have means necessary for doing work while, some of the respondents perceive that the methods used in some sections of the organization are old fashioned. Females and unmarried respondents have positive perception towards organization climate. There is a significance difference in Organization Climate with respect to age groups, work experience and levels of IT employees. So it is recommended that the IT companies need to address these changes in the views of their employees towards their work environment so as reap the maximum benefits in all of their managerial functions.

Keywords: *Organizational Climate, Organizational Goals, Commitment, Productive*
JEL Classification: *D23, M 1, O15*

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Academic Stress and Its Management- A Study

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ABSTRACT

Academic Stress is the feeling of anxiety or apprehension over one's performance in the academic endeavors. In this competitive academic environment, irrespective of the levels of the education, students are undergoing immense amount of the stress in various ways. Some of them include, derived from a need for perfection, worry over grades, parental pressure, competition and a tough class load. Higher secondary students are one of the most common victims of stress. It is one such phase, where most of the students experience academic stress, as they are in transition stage of their education and focused on achieving a good score in the competitive examinations. Even though, moderate amount of stress acts as a motivation for students, but at times too much of it may disturb with their daily lives. When built over time, stress can give rise to a host of serious problems such as depression and anxiety. So the present study makes an attempt to study the factors causing stress among the higher secondary students and analyze the consequences of stress on the students. The study also examines the personal coping strategies adopted by students, apart from the Institutions support to overcome stress. Structured questionnaire was used as primary source to collect the required data. The secondary data sources include books, magazines, journals, web sources. Convenient sampling technique is adopted to select the respondents. Sample size is 112 students who are pursuing their higher secondary education in Twin cities of Telangana state. Descriptive analysis and Percentage analysis are used to interpret the data collected. From the study it was found that the main reasons for academic stress are too many extra demands on students and interest in some subjects. The major impact of academic stress on the students is being Moody and showing Nervousness. Students are finding alternatives on the actions to cope up with stress. It is also noticed that certain institutions are taking measures like helping students to manage stress. A model is proposed to manage academic stress effectively based on the findings of the study.

Key words: Academic stress, Competitive environment, coping strategies, Higher Secondary Education

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Measuring the Role of Training And Development Activities in Enhancing Organization Citizenship Behavior

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Abstract

In today's dynamic competitive environment, Organizations constantly look for the workforce who can go beyond the formal requirements of the job role. This search is mainly to enjoy the benefitsof Human resources being the core competence of the Organization. So as to realise this many initiatives are taken by the organizations and one such is training and development activity. Moreover Organization insist on owning the employees, who practice good citizenship behaviour, so that they can represent the company 24x7, and be the part in Organizations success. Organ (1988) defines Organizational Citizenship Behaviour (OCB) as "individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization". This paper makes an attempt to understand the relationship between the training and development activities of the organization and OCB. Data collected by considering convenient sample of 116 academicians was analysed using Descriptive statistics and correlation. The results revealed that there is a prominent role played by the training and development activities in promoting the citizenship behaviour of the teaching fraternity. Faculty are motivated, supported to attend training and development programmes and they making use of these programmes to exhibit their in-role (mandatory) and extra-role (discretionary) job behaviour.

Keywords: *Organizational Citizenship Behaviour, Core competence, Training & Development.*

JEL Classification:*D23, P36, O15*

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Association of Emotional Intelligence and Organizational Citizenship Behavior - A Study With Reference to IT Employees

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ABSTRACT

The continuous interactions, both positive and negative which occur among theemployees in a workplace will impact the overall operations of the organization. The concept of Organization Citizenship Behavior(OCB) has its way into literature and practice, as it includes that discretionary behaviors that go beyond the regular job description. In order to exhibit extra role Behaviour, an employee working with any kind of industry requires an adequate amount of emotional stability. IT companies demands high levels of Emotional Intelligence and citizenship Behavior from its employees in order to stay ahead in the tough competition that exists in the IT industry. So in the present research paper an attempt was made to measure emotional intelligence and organization citizenship behavior of the employees working with IT companies in Twin cities of Telangana State. Standard scales were used in the questionnaire to get the required data. The data collected from a convenient sample is analyzed using descriptive statistics and correlation. From the study it was found that there is a positive association between emotional intelligence an organization citizenship behavior

KEY WORDS: Citizenship Behavior, Emotional Intelligence, Turbulent business environment

INTRODUCTION

Emotional Intelligence (EI) has come into its own as one of the most popular psychological concepts of the last decade. EI has been used by some as an umbrella term that comprises elements such as ‘soft skills’, ‘people skills’, and a general ability to cope with life’s demands. In other words ‘Emotional intelligence gives you a competitive edge. Emotional intelligence is all about listening to your internal voice and it’s imperative that organizations should focus on the importance of emotions with respect to the intellectual abilities attached to it. Today, organizations need to evaluate employee’s abilities in terms of emotions instead of their intellectual level because human relations in organizations are influenced by emotional5w factors more than by intellectual factors

RESEARCH-ARTICLE

The role of brand community identification and reward on consumer brand engagement and brand loyalty in virtual brand communities

Authors: Harsandaldeep Kaur, Mandakini Paruthi, JamidUl Islam, Linda D. Hollebeek Authors Info & Claims

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Abstract

Effect of Firms Capital Structure on Stock Returns - A Study of Selected Companies Listed in National Stock Exchange

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ABSTRACT

The aim of the study is to examine the effect of Capital structure on stock returns of select companies listed in National Stock Exchange during the period between 2014 and 2018. The present study helps managers and policy makers to make the right decision in determining the possible debt ratio that maximizes stock return. The main source of this study is from secondary data from firm's financial reports. Correlation and regression analysis are used for present analysis. The results of study revealed that there is a negative effect of capital structure on stock returns. The results also indicated that profitability and growth are positively correlated with stock return and size is negatively correlated with stock return.

Keywords: Capital structure, stock return, NSE, policy makers and firms

1. Introduction

Capital structure is the important concern for firms. It is a combination of equity and debt which a financial manager uses to finance the activities in firm. Managers build the capital structure in such a way that trade off takes place between risk and return. Financial managers believe that debt is cheaper source of finance which has the advantage of the tax benefit while in the case of equity, it is most expensive form of finance. It becomes most complex to take finance decision for choosing the combination of debt and equity because it affects the overall value of the firm. However there is no predetermined leverage to be used in capital structure, it depends on various factors like firm size, sector, country and other factors. (Khan, Naz, Khan,

A STUDY ON TECHNICAL ANALYSIS WITH RESPECT TO INDIAN IT SECTOR

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ABSTRACT

In the recent scenario, investment has been becoming a vital aspect for every earning individual which he thinks most probably to do certain amount as an investment at some point of time. In the available options, investment in stock market is not only rewarding but also risky. When a decision is required to be made, the term 'analysis' comes into the picture. Analysis includes both fundamental analysis and technical analysis. For predicting short term trends in financial markets, technical analysis is used. This study focuses on technical analysis using various indicators in select stocks of Indian IT sector which are listed in NSE. Time period taken into consideration was from January 2017 to June 2018, on daily basis. For this study, only secondary data is considered and the tools used are Exponential Moving Average (EMA), Relative Strength Index (RSI), Rate Of Change (ROC), Average True Range (ATR) and Stochastic Oscillator. The study revealed that stochastic oscillator will generate more and apt buy and sell signals followed by relative strength index and also enclosed that without having proper knowledge one should not opt for technical analysis.

KEY WORDS: Technical Analysis, Moving Average, Relative Strength Index, Rate of Change, Average True Range, Stochastic oscillator.

I. INTRODUCTION

Technical analysis is a study of price actions of shares in the past & present situations in any financial market which enables us towards future direction. It focuses more on finding sufficient opportunities to trade with utmost probability than on estimating the future. On the basis of their trading style, different analysts use different charts at different times. The charts may be a line chart, bar chart, point and figure chart, candlestick chart etc. Some use technical indicators and oscillators and most use a combination of techniques. Technical analysis majorly concentrates on price and volume which ignores the fundamental aspects. The time frame in technical analysis may range from intraday (1-minute, 5-minutes, 10-

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Consumer Buying Behavior - A Comparative study between HUL and P&G in Hyderabad

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ABSTRACT - Marketing is a very important aspect of business, because it contributes large extent to the overall success of the organization, thus production and distribution depends exactly on it. Promotional activities and other relevant factor of purchasing decision making attracts customers to at least try the product, and then decide if the quality meet the necessary requirements of their needs and demands. This report addresses the aspect of promotion strategies and the factors influencing the consumer buying behaviour of hair care brands. The purpose of this paper is to analyze the impact of promotional activities during the decision-making process and the buying behavior of hair care products of two companies HUL and P&G. For the purpose of this report, the research was conducted through questionnaires. 155 responses have been collected and the data was analyzed accordingly. Target groups selected for interview were of different ages and different professions. Research was conducted in the twin cities of Hyderabad.

Keywords: Promotional strategies, consumer buying behavior, Influencing factors

I. INTRODUCTION

In marketing, **promotion** refers to any type of marketing communication used to inform or persuade target audiences of the relative merits of a product, service, brand or issue. The aim of promotion is to increase awareness, create interest, generate sales or create brand loyalty. It is one of the basic elements of the market mix, which includes the four Ps, i.e., product, price, place, and promotion. Promotion covers the methods of communication that a marketer uses to provide information about its product. Information can be both verbal and visual.

An effective promotional effort contains a clear message that is targeted to a certain audience and is done through appropriate channels. The target customers are people who will use, as well as influence or decide the purchase of the product. Identifying these people is an important part of market research. The following are few of the promotional strategies ,

PRICE DISCOUNT

A product discount is a temporary decrease in price for a good or service, often for a specific purpose. Companies may develop discount pricing strategies such as quantity, seasonal, cash or promotional discounts to increase sales revenues.

COUPON DISCOUNT

coupons are issued by manufacturers of consumer packaged goods or by retailers, to be used in retail stores as a part of sales promotions. They are often widely distributed through mail, coupon envelopes, magazines, newspapers, the Internet (social media, email newsletter), directly from the retailer, and mobile devices such as cell phones. Since only price conscious consumers are likely to spend the time to claim the savings, coupons function as a form of price discrimination, enabling retailers to offer a lower price only to those consumers who would otherwise go elsewhere. In addition, coupons can also be targeted selectively to regional markets in which price competition is great.

FREE SAMPLE

A method used to stimulate consumption by consumers. A free sampling of product are given to the consumer, enabling them access to the product before they are purchased. Such product samples, at a certain point, were dispensed at stores only. Nowadays, samples can be delivered to homes upon order from the company.

ELECTRONIC MEDIA

Electronic media means marketing using digital technologies such as websites, mobile devices and social networking to help reach the customers, create awareness of the brand and sellgoods or services. The basics of marketing remain the same - creating a strategy to deliver the right messages to the right people.

PRINT MEDIA

Print media means usage of the physically printed media such as Newspapers, Magazines to reach the consumers and create awareness or to generate sales of the given product.

BUY ONE GET ONE FREE

"Buy one, get one free" or "two for the price of one" is a common form of sales promotion .The price of "one" is somewhat nominal and is typically raised when used as part

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POSSIBLE PREVENTION OF COVID-19 BY BEHAVIORAL CHANGE AND HYGIENIC HABITS OF INDIAN POPULATION AS WELL AS ITS CLIMATE

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1.0 INTRODUCTION

A new mutation of the virus took its shape in Wuhan in China and is genetically related to the coronavirus responsible for the severe acute respiratory syndrome and was responsible for the SARS outbreak of 2003. The new mutant, is a highly transmittable and pathogenic. It was named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on February 11, 2020 by the ICTV. WHO announced “COVID-19” as the name of this new disease on 11 February 2020.

Genomic analysis revealed that SARS-CoV-2 is phylogenetically related to severe acute respiratory syndrome-like (SARS-like) bat viruses, therefore bats could be the possible primary reservoir. The intermediate source of origin and transfer to humans is not known, however, the rapid human to human transfer has been confirmed widely.

As the concept of Global village is the trump card, the interaction among nations is vigorously growing. A mad rush is at vogue and people are flying from one nation to other on different jobs. Along with people, even the microorganisms boarded the flights and were received by different nations. Among them the note worthy one is the Corona Virus, the talk of the world.

2.0 SYMPTOMS AND PRECAUTIONS

This virus causes difficulty in breathing if the condition is severe; otherwise in mild cases respiratory illness (like the flu) with symptoms such as cough and fever. Named as Corona virus it spreads primarily through contact with an infected person when they cough or sneeze. It also spreads when a person touches a surface or object that has the

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IMPLEMENTATION OF SIGMOID FUNCTION IN LOGISTIC REGRESSION

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ABSTRACT

Regression is a form of machine learning where we try to predict a continuous value based on some variables. It is a form of supervised learning where a model is taught using some features from existing data. Around 60% of the world's classification problems can be solved by using the logistic regression algorithm. It predicts the probability of occurrence of a binary outcome using a logic function. It is a special case of linear regression as it predicts the probabilities of outcome using log function. There are many examples where we can use logistic regression for example; it can be used for fraud detection, spam detection, cancer detection, etc using relevant datasets. Sigmoid is a mathematical function having a characteristic that can take any real value and map it to between 0 to 1 shaped like the letter "S". The sigmoid function also called the logistic function gives an 'S' shaped curve that can take any real-valued number and map it into a value between 0 and 1. If the outcome of the sigmoid function is more than 0.5 then we classify that label as class 1 or positive class and if it is less than 0.5 than we can classify it to negative class or label as class 0. If the curve goes to positive infinity, y predicted will become 1, and if the curve goes to negative infinity, y predicted will become 0. In this paper, I explain how to use the sigmoid function to convert the outcome into categorical value and implementation of sigmoid function using python language.

Keywords : Regression, Classification, Sigmoid Function;