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3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during year 2018-19

Sr. No.	Title of paper	Name of the author/s	Name of journal	Is it listed in UGC Care list/Scopus/Web of Science/other, mention
1	Block Chain for Secure Energy Trading on Solar System	Dr. Prasad S. Halgaonkar	International Journal of Innovative Technology and Exploring Engineering	other
2	Spam Review Detection to Increase User Reliability on Reviews for Availing Online Service	Dr. Prasad S. Halgaonkar	International Journal of Innovative Research in Science, Engineering and Technology	other
3	Network Intrusion Identification System using Artificial Neural Network	Prof. Atul B. Kathole	Journal of Emerging Technologies and Innovative Research (JETIR)	other
4	Modern Logistics Vehicle system using Dynamic Scheduling, Tracking and Security	Prof. Prakash D. Kshirsagar	International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)	other
5	A Smart Trolley System using RFID	Prof. Prakash D.Kshirsagar	International Journal of Research in Engineering, Science and Management (IJRESM)	other
6	Survey On Botnet Detection using real time packet analysis	Prof. Deepali Lokare	Journal of Emerging Technologies and Innovative Research (JETIR)	other
7	Survey of Security Using Multimodal Biometrics System	Prof. Deepali Lokare	Journal of Emerging Technologies and Innovative Research (JETIR)	other
8	Data Hiding In Images with Two JPEG of the Same Scene	Prof.V.M.Patil	International Journal of General Science and Engineering Research (IJGSER)	other
9	Monitoring of plants in Poly House using Automation	Prof. Pushpmala Nawghare	Journal of Emerging Technologies and Innovative Research (JETIR)	other

10	Maintaining security of data access in cloud computing	Prof. Pushpmala Nawghare	Journal of Emerging Technologies and Innovative Research (JETIR)	other
11	Poly House Monitoring and Plant Disease Detection	Prof. Pushpmala Nawghare	Journal of Emerging Technologies and Innovative Research (JETIR)	other
12	Touchscreen Mobile Device Owner Identification Using Continuous Successive Gestures	Prof. Balaji A. Chaugule	Journal of Emerging Technologies and Innovative Research (JETIR)	other
13	A Survey on Intelligent Data Mining of Social Media for Better Decision Making	Prof. Chaugule Balaji A.	International Journal for Research & Development in Technology (IJRDT)	other
14	Intelligent Data Mining of Social Media for Better Decision Making	Prof. Chaugule Balaji A.	International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)	other
15	Human Social Network Addiction Detection using Social Networking	Prof. Balaji Chaugule	Journal of Emerging Technologies and Innovative Research (JETIR)	other
16	Gross Domestic Product (GDP) Prediction: A Review	Prof. Aparna V. Mote	Journal of Emerging Technologies and Innovative Research (JETIR)	other
17	Modelling and Forecasting Gross Domestic Product (GDP) using Linear Regression	Prof. Aparna V. Mote	Journal of Emerging Technologies and Innovative Research (JETIR)	other
18	A Review on Different E-commerce Sites with Outfit Composition	Prof. Aparna V. Mote	Journal of Emerging Technologies and Innovative Research (JETIR)	other
19	Survey on Emotion Detection from Text using Automatically Generated Rules	Prof. Anuradha Yenkikar	Journal of Emerging Technologies and Innovative Research (JETIR)	other
20	Ranking based recommendation using online social user data	Prof. Gopal R. Chandangole	Journal of Emerging Technologies and Innovative Research (JETIR)	other

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21	A review on online supermarket models and customer interpretations	Prof. Vidhya R. Vasekar	Journal of Emerging Technologies and Innovative Research (JETIR)	other
22	A smart online grocery shop system	Prof. Vidhya R. Vasekar	Journal of Emerging Technologies and Innovative Research (JETIR)	other
23	Performance Optimization in Multi-cloud Computing: A Review	Prof. Vidhya R. Vasekar	Journal of Emerging Technologies and Innovative Research (JETIR)	other
24	E-commerce: Digital Marketing using Google Bot and Augmented Reality	Ms. Smita S. Bachal	Journal of Emerging Technologies and Innovative Research (JETIR)	other
25	Crop disease detection using Image Processing	Ms. Smita S. Bachal	Journal of Emerging Technologies and Innovative Research (JETIR)	other
26	Improved Algorithm for visual summarization of image collections using crowdsourcing and infinite push ranking	Prof. Rupali Waghmode	Journal of Emerging Technologies and Innovative Research (JETIR)	other
27	Ransomware Threat to Organizations	Mr. Aniruddha Kshirsagar	Journal of Emerging Technologies and Innovative Research (JETIR)	other
28	IOT Based Smart Traffic Management System using Image Processing.	Mr. Aniruddha Kshirsagar	Journal of Emerging Technologies and Innovative Research (JETIR)	other
29	Load Balancing in Distributed File Systems using Clouds	Prof. Pravin S. Patil	Journal of Emerging Technologies and Innovative Research (JETIR)	other

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Block Chain for Secure Energy Trading on Solar System

Sheetal P. Shrotri, Prasad S. Halgaonkar

Abstract: Data security is progressively essential for generally organizations what's more, even home PC clients. Proposed framework will give the security to close planetary system information security utilizing blockchain idea. P2P network will used to store every owner solar based energy information month to month. All information identified with solar based energy information will be valuable and give the security of that information to avoid programmers and information lost for secure transaction. To avoid loss of information and its accessibility cryptographic methods are utilized. What the transaction information with any missteps will found and redressed before producing any block. To get accessibility and checked cryptographic hash are being placed in each block in the energy block chain. This framework deal with verification of - retrievability. Information store dependent on block chain security. The energy block chain conveys the hash value of past associated nodes to the consensus procedure and in the traditional block chain it applies consensus process on all node.

Keywords: Block chain, Cryptography, Data security, Peer-to-peer, Proof-of- retrievability, Solar system

I. INTRODUCTION

The decentralized storage system presented with points of interest for capacity of server farms. Like the traditional arrangement, the non-centralized cloud distributed storage organize takes preferred standpoint of customer side encryption to maintain data security. Solar energy is a reliable and renewable source of energy, and it is additionally the cleanest kind of energy known to man, since it does not pollute and adds to the decrease of a nation's carbon emanations. A Block chain is list of records called block, that are associated by encryption. Each block has an exceptional hash of existing block and transaction data. By structure, a chain of blocks does not permit data modification. Blockchain is a distributed record that stores communication between two clients proficiently. To be utilized as a accounting book, a chain of blocks is generally handled by a machine to machine networks that delivers by protocol for correspondence among nodes and checks the new blocks. Once put away, the data in a given block can not be changed without evolving every resulting block, which requires the consent of the maximum of the network. The study of Blockchain in recent time is because of the decentralization advantage in the energy transaction.

The open and distributed registry to keep verified and permanent transaction records is a blockchain. The chain of blocks in the consortium is a chain of coherent blocks with preselected nodes to keep the common databases appropriated. The chain of blocks of the consortium is mostly private. Here there has been some perplexity with respect to how this contrasts from a totally private framework. Rather than every individual inside System taking an interest in the verification of the transaction process or permitting just a single organization's individual that one have full control, some chosen nodes are predetermined. A consortium stage offers a considerable lot of similar advantages related with the chain of private blocks: efficiency and privacy of transaction

II. RELATED WORK

1. The record exhibited to diminish the transaction impediment is the consequence of postponements in the affirmation of the transaction in the chain of energy blocks. This framework offers an installment plot dependent on layaway. In the base cost procedure the advance depends using a credit card utilized by the Stackelberg diversion. In this Propose framework the stackleberg game is utilized in energy advances to increase the advantages of the credit banks. The assessment of execution examination and security of energy blocks and installment plot by credit [1].
2. Offering task is a distributed power trading model that is utilized to purchase and sell power locally between PHEV in keen networks. In existing frameworks transportation of power for long separations through complex transportation system of power. The proposed framework answers the question by giving motivators to the release of PHEV to adjust the nearby interest for power with individual interests [2].
3. In this work, proposed another IoT server platform for chain of blocks and presentation of sensor information storage into chain of blocks. The chose mobius IoT server stage to enable verification to IoT gadgets with good M2M standard for certain measure of time. It get sensor information what's more, data progressively from them and store it on the Mysql database server and controls them [3], [13].
4. In this work creator manage the issue of transaction security in shrewd lattice energy exchanging without provoke to other people. They have dealt with a proof of-concept in block chain innovation by utilizing multi-signature and encrypted informing [4].

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Spam Review Detection to Increase User Reliability on Reviews for Availing Online Service

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ABSTRACT: People refer reviews while purchasing product or availing any service from online sites. Spammer leave fake review to promote/harm business demand. Recognizing these spammers and the spam content is a widely debated issue of research. Research is going on to identify feature and increase the accuracy of spam review detection. Various features are available depending on performance features need to selected and used for fake review detection. The existing system proposed Netspam algorithm made use of review-based and user-based features for spam detection and also calculated the weight of each feature to identify performance of individual features. The Proposed System used Sentiment analysis ,Semantic analysis with Netspam Framework to identify fake reviews with increased accuracy. The Proposed System also provide top-k hotels based on user search query and recommend single hotel based on user point of interest.

KEYWORDS: Social Media, Social Network, Spammer, Spam Review, Fake Review, Heterogeneous Information Networks, Semantic analysis, Sentiment Analysis.

I. INTRODUCTION

Online shopping or availing service is in big trend where user mostly refer reviews, rating and features of product/service before purchasing or availing any service, but if reviews are fake it may mislead the user interest and indirectly harm the business demand. Spammer may promote/damage the reputation of business based on contract. The fact that anyone with any identity can leave comments as review provides a tempting opportunity for spammers to write fake reviews designed to mislead users opinion. Reviews are mostly referred and the reliability of user on reviews need to be maintained to increase online availing service . Various analysis are performed on spam review detection to increase the accuracy. Semantic analysis and sentiment analysis are most commonly used for text analysis.Semantic analysis compare one review with remaining other reviews an generate score ,Sentiment analysis analyze each sentence and remark review has Positive, Negative or Neutral .Research is going on to identify features to increase the accuracy.metadata which mean data about data like rating, time, date and content of review are used for analysis. There are also sudden increase of reviews in time periods for a product such areas are called as review bursts. A large number of customers may purchase the product and write reviews for the product in a short period of time. Most reviewers in this kind of bursts are likely to be non-spammers. when a product is under spam attack, a number of spam or fake reviews may be posted.

Motivation:

- To identify the spam user using positive and negative reviews in social media.
- To display only trusted reviews to the users.
- User search query (location), it will show top hotels and recommends one hotel by using users point of interest.

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Network Intrusion Identification System using Artificial Neural Network

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Abstract: In today's world the anomaly-based network intrusion detection techniques have become very efficient in identifying the both known and unknown types of network intrusions, in this paper we have implemented the anomaly-based technique with the help of feed forward neural network in deep learning, the dataset used for the model building was CICIDS2017 Dataset which is updated with attacks type of today's world. We were very successful in detection of intrusion types in 14 groups with very high accuracy.

***Keywords*– Anomaly Based Network Intrusion Identification System; Artificial Intelligence; Deep Learning; Sequential Model.**

I.INTRODUCTION

An Intrusion Identification System is a software application or a service that monitors the network traffic and based on the traffic it detects the network attacks. Identifying the intrusion is the art of detecting malicious, wrong or non-benign activity. Intrusion Identification System that operates on a host to detect malicious activity are called host based intrusion identification systems. Similarly, Intrusion Identification systems that operate on network data flows are called network based intrusion identification systems. We used network-based intrusion identification system in this paper. Basically, there are two types of intrusion identification systems: Signature based Intrusion identification system and Anomaly based intrusion identification system. Signature based Intrusion Identification System are fast and works well but have one major disadvantage. It does not detect the unknown attacks. So, with the modification of attacks this method may fail to detect the attacks. On the other side, we have another type that is anomaly-based intrusion identification system. This system can be used to identify the unknown attacks or some kind of new attacks. Anomalies show very crucial and rare events in the anomaly identification. For an instant, if any computer is facing some irregular traffic pattern then we can say that some unauthorized actions have been performed which can be a malicious data transmission to the destination

In anomaly-based network IDS, given system is trained with "benign" as well as "malicious" network traffic for generating the Model. When the generated Model for particular system is available, it is used to classify the malicious type based on its learning. Most important a self-learning system have to be use. It is an effective model which has characteristic to adapt to generalize systems behaviour and survive with changing environments.

This system is used in order to detect various on-going attacks based on anomalies and have the aim of catching the hackers before they do damage to our work[8]. This system inspects the data within the packets, analyses them, understands them, feed it to the trained and tested model and after learning various features and attributes based on the fed data, it detects the attack if it shows any kind of anomalies defined in our system.

Another critical problem in anomaly-based network intrusion identification is possibility of having labelled data for training and model validation. In normal behaviour, availability of labels is high but in intrusions labels are not highly available. In such cases, unsupervised and semi supervised techniques which are used to detect anomalies are highly recommended.

Hence, motivated by problems mentioned above, we propose an anomaly-based NIDS using deep learning to identify fourteen types of network intrusions in our system. With the help of deep learning, we expect to handle issues in anomaly-based network intrusion identification, like high intrusion identification rate, capability to adapt to dynamic network environments.

Using Artificial Intelligence in Intrusion identification system helped us to improve the accuracy of the system and also it helped to analyse huge volume of dataset in dynamic nature in comparatively less time. It efficiently recognizes the intrusion patterns and detects the attacks accuracy with very low false-positive rate and providing higher true-positive rate.

So, anomaly-based network intrusion identification using artificial intelligence allows us to detect unknown attacks with help of anomalies found in the network and detect them accurately and in very fast manner with the help of artificial intelligence.

Deep Learning Techniques:

The goal of deep learning states that it is used to calculate hierarchical features or representations of the observational data. It extracts the higher-level features or factors from lower level features. Also, it focuses on extracting and learning a better feature representation from a huge amount of labelled data. It helps model to be pre-trained in a supervised manner. The strategy of layer-wise supervised training allows adequate training of deep networks and gives auspicious solutions for different challenging learning problems, considerably bettering upon the current. In an area which is near a good local minimum, we initialized the weights, which made increase to internal distributed representations that were high level abstractions of the input, thus it brought a better generalization[8]. There are various Deep learning techniques used for pre-training and they are chosen depending on many various domains as network packets are available in sequential format. In our system, we have used feed-forward network for training the model.

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Modern Logistics Vehicle system using Dynamic Scheduling, Tracking and Security

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ABSTRACT: The Movers and Packers frameworks have risen as of late with the improvement of Global Positioning System (GPS), mobile communication technologies, sensor and remote systems administration advances. The Movers and Packers frameworks are imperative as they can add to a few advantages, for example, recommending right places for getting clients, expanding income of truck drivers, decreasing holding up time, automobile overloads just as limiting fuel utilization and subsequently expanding the quantity of treks the drivers can perform.The main purpose of this system would be supplying required vehicles that would be used to meet customer demands through the planning, control and execution of the successful development and capacity of related data and administrations from root to goal. We need to give start to finish security to client and supplier information by utilizing QR code idea. We are proposal of closest best specialist organization as per client intrigue and recognize spam specialist co-op. Coordinations the executives alludes to the obligation and the board of structure and manage frameworks to control the development and topographical situating of crude materials, work-in-process, what's more, completed inventories at the most reduced all out expense. Collaborations incorporates the organization of solicitation getting ready, stock, transportation, and the mix of warehousing, materials managing, and packaging, all fused all through an arrangement of workplaces.

KEYWORDS: Intelligent Transportation. Logistic system, QR Code, Solicitation distribution. Vehicle routing

I.INTRODUCTION

Collaborations implies the commitment to design and direct structures to control improvement and land arranging of harsh materials, work-in-process, and completed inventories at the most decreased total cost. Collaborations incorporates the organization of demand getting ready, stock, transportation, and the mix of warehousing, materials giving, and packaging, all consolidated all through an arrangement of workplaces. As demonstrated by the determined characters, collaborations information the officials systems join modules, for instance, structure the administrators, resources the board, customer the board, get the board, exceptional organization, amassing the officials, trade the board and invoicing the board. Each subsystem has particular helpfulness and the determined information structures are the string that joins collaborations practices into a fused technique. Vital information structures begin activities and track information as for methodology, and help the administrator's essential authority. The essential worry in our system is, we have to offer end to end security to customer and provider data by using QR code concept.in QR code twofold picture we have to cover customer and provider data. simply endorsed customer can see data. For customer energy mining we used aggregate filtering technique. The crucial principle of this system is proposition of vehicle as shown by provider advantage. Proposition is used to find customer interest and give related event. We are proposition of nearest best pro association as shown by customer interest and recognize spam authority center. Customer Advice is a term which is used in the sense to energy mining. One can give direction for the issue or can simply give an answer. Direction, is apparently a supposition with course or control and even control. Proposition looks like, a customer eagerness opening about organization is used for new customer to use master association vehicle.

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A Smart Trolley System using RFID

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Abstract: A supermarket is a form where wide variety of product items is available. These product items can be food, beverages or any household product. The main purpose of supermarkets is to provide availability of all the products and save the time of the customers, but sometimes customer gets frustrated while waiting in the queue at billing counter and sometimes, they get confused while comparing the total price of all the products with the budget in the pocket before billing. To overcome these problems, we have designed a smart trolley using a smart phone and Arduino. With this system, there is no need for customer to wait in the queue for the scanning of the product items for billing purpose. Supermarkets provide this facility to customers through an application. The customers will be allotted the trolley with the help of the application. Otherwise, it can also work as a normal trolley. This can also help the supermarkets and hypermarkets to increase the number of customers.

Keywords: RFID, Bluetooth, Shopping Trolley, Arduino.

1. Introduction

Shopping mall is a place where people get their daily necessities ranging from food products, clothing, electrical appliances etc. Sometimes customers have problems regarding the incomplete information about the product on sale and waste of un-necessary time at the billing counters. Continuous improvement is required in the traditional billing system to improve the quality of shopping experience to the customers.

Now a day's numbers of large as well as small shopping malls has increased throughout the globe due to increasing public demand and spending. At the time of festivals, special discounts, holidays, etc. there is a huge rush in shopping malls. The use of bar-code reading technique in such situations always results in waste of time since customer has to wait till all the items get scanned. These disadvantages can be avoided by using IoT based intelligent trolley.

This system uses RFID technique instead of barcode. Proposed system uses separate RFID reader for each trolley and RFID Tag for each product. When customer buys any product RFID reader reads the tag which is present on the product. The cost of the product and the total bill of shopping items can be displayed in the application.

IoT based intelligent trolley presented here is easy to use and does not requires the special training to customers. RFID technique has many advantages over barcode systems. RFID reader reads the tag from a distance of 300 feet whereas barcode can read the information at distance not greater than 15 feet. Also the barcode need one site of propagation. Reading frequency of barcode reads is only two tags whereas reading frequency of RFID is 40 tags. So the use of RFID is more useful than traditional barcode reading technique. Here use of RFID is helpful for customer.

2. Literature review

Smart Shopping Cart with Automatic Billing System through RFID and ZigBee proposed Chandrasekar and Sangeetha which states each shopping cart is designed or implemented with a Product Identification Device (PID) that contains microcontroller, LCD, an RFID reader, EEPROM, and ZigBee module.

Human-Following Mobile Robot in a Distribute Intelligent Sensor Network proposed Kazuyuki. M., Lee, J-H. and Hideki solves that the robots that will be needed in the near future are human-friendly robots that are able to coexist with humans and support humans effectively.

RFID Based Automatic Shopping Cart by Aggarwal AA discuss an innovative concept of the Automatic shopping cart in which the customer need not have to wait in the queue for billing for hours in shopping malls. Billing will be done automatically as and when the product is added to the cart by using RFID and Arduino. Automatically amount will be deducted in case the customer chooses cancel/ remove the product from the cart.

Intelligent wireless transmission ordering system for dishes based on ZigBee from Shen FK, Tsai FH, Lin HC, Zeng HD Design of Zigbee Based Wireless Order System for Restaurants. wireless self - service order management for intelligent. which has many advantages such as data transmission Research of ZigBee wireless order system for dishes. Future impacts of RFID on e-supply chains in grocery retailing Supply Chain Management proposed by Edmund Prater and Gregory V. Frazier Automating inventory replenishment decisions would result in significant cost savings to the stores, by freeing up time that department managers spend walking the floor Figure Market leakage analysis Figure The enabling steps of item level supply chain management Future impacts of RFID on e-supply chains in grocery.

3. Proposed system

A. *RFID Scanner*

Scans the RFID tag which is attached to the product. After

Survey On Botnet Detection using real time packet analysis

Ms. Payal Sondkar[1] , Ms. Snehal Zende[2], Ms. Shital Tamkar[3], Prof.Deepali Lokare[4]
[1,2,3] Research Scholar,[4]Assistant Professor ,ZCOER

Abstract: At present, Botnet is an important demonstration of advanced malware. The botnet is serious threats to our network. Originator(BotMaster) which controls the collection of compromised computers (Bots) from a remote location guided by common command-and-Control(C&C) infrastructure is called Botnet. To convey commands to the bot command and control is used to perform a malicious activity such as sending spam emails, form grabbing, Denial-of-service (DoS) attacks, information capturing etc. Therefore, it is necessary to analyze the botnet to contribute in secure network service.The Proposed work focus on detecting and deactivating Zeus bot, detecting TOR attack and DOS attack and alert to the victim by applying certain steps. To analyze network traffic it is necessary to monitor and observe who is connected to whom and how. The proposed system will give information about Source IP, Destination IP, the name of the protocol, Active Time etc. Based on this information Bots will get detected. The first and second step is to diagnose Bot by monitoring network traffic.

Keywords: Bot, botnet, Communication topologies, c&c server, Zeus, DOS, Tor.

Introduction :

The term botnet is extracted from the combination of 'robot network'. The bot is designed to perform predefined functions automatically. It creates serious threats to a network asset. Originator (BotMaster)which control collections of compromised computers (Bots) from a remote location beneath a common command and Control(C&C) framework is called Botnet [1]. As shown in fig.1, BotMaster is the computer that attacker used to collect commands which are relayed to the bots through controllers. Once the bot code located into the compromised computers, the computers act as bot or zombie.

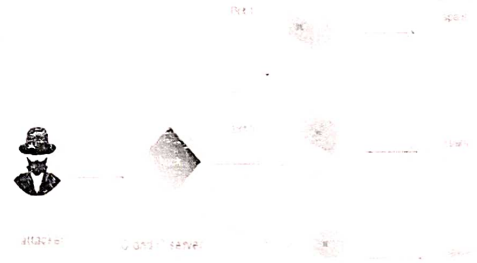

Fig1. BOT networks

The dissimilarity among Botnet, virus, and worm is that botnet has the C&C framework. The C&C permit Bot to receive commands and malicious potentialities through C&C server as devoted by BotMaster. The main goal of malware is attacking and targeting the contaminated host. With respect to the C&C channel, two different models are created which are centralized and decentralized communication model. In Centralized communication model, interchanging commands and data between BotMaster and Bots are accomplish by one central point present in communication [2]. The advantage is that this model has a compact message suspension. The drawback of this model is that, C&C server. If anyone unable to recognize and exclude the C&C server entire Botnet will become ineffectual and incapable. The other communication topology is a decentralized model which does not fail because of a single point lack of success. Therefore, it is difficult to track such type of bot[2].

The botnet is the most prime or dominant threat to the internet. It affects to machine very dangerously under control of the attacker. Hackers are creating own network and control using the Command and Control server. It is not easy to finds causes on the internet by botnets.Various Botnet operating peer to peer networks. Then communication done with server Bots performing tasks such as server send commands and client receives those commands this also avoids the single point of failure. In peer to peer architecture, there is a decentralized point of command and control. There are network nodes perform as both client and server such that there is decentralized coordination that can be in the capacitor.

Survey of Security Using Multimodal Biometrics System

Prof.Deepali Lokare[1], Ms. Rohini Birajdar[2], Ms. Priyanka Kakade[3], Ms. Pournima Indalkar[4],
[1]Assistant Professor, [2,3,4] Research Scholar, ZCOER

Abstract: Multimodal Biometric framework is a combination of more than one biometric innovation. In the vast majority of security frameworks has true uses a single biometric system for confirmation that is just a single fingerprint , palm print, face, voice or iris which is known as unimodal biometrics framework. A portion of the limitations of unimodal biometrics are improve by mixing data from different biometrics frameworks for extraordinary individual feature. This paper introduces a multimodal framework that joins the highlights of fingerprint and face to defeat a few downsides of unimodal biometrics. In this propound framework, Pre-processing is a fundamental piece of image pre-processing in which it highlights the execution of critical-advance technique. In this system series of pre-processing techniques are applied on captured image for the extracting unique features from face and fingerprint. We propose strategy which has better execution as compared with uni-modal methodologies utilizing separately with a face or a palm print. The error rate is decreased by utilizing a multimodal biometric framework.
Keywords: Bio-measurements, Multi-Modal System, Fusion, Fingerprint, Face, Uni-Modal, Image Pre-processing, Security.

I. INTRODUCTION

Biometrics is the wide term which is characterized as an arrangement of an individual physiological or social characteristics, is starting to get access as a appropriate strategy for deciding a people identity. In real world applications most biometric frameworks are unimodal, for example gather attributes from single sensor for verification. These frameworks need to battle with an assortment of issues, for example,

(a) Noisy information: An information may change due to loud information. Loud information is generated because of defect in sensors.

(b)Within-class varieties: These happens because of the change in the qualities of sensors or the client who is mistakenly interact with sensors.

(c) Between-class similitudes: In a biometric framework including countless users, there might be between class similitudes. A fingerprint framework, for instance, may separate wrong details highlights from the fingerprints of specific people, due to the low quality of the edges.

A portion of the disadvantage happened in unimodal biometric frameworks can be diminished by including different wellsprings of data for building up singular personality. Such frameworks, known as multimodal biometric frameworks, which are expected to be progressively proficient because of the nearness of numerous sources. They address the issue of non-all inclusiveness, since different characteristics guarantee adequate populace inclusion. Likewise they can encourage a test reaction kind of System by asking for the client to exhibit an arbitrary subset of biometric qualities there by guaranteeing that a live client is available at the purpose of information securing.

II. LITERATURE SURVEY

In paper[1] it proposed that the different standardization and combination rule is connected at the coordinating score level method. An expansive scale dataset is broken down to approve the proposed method, utilizing the face ORL database and CASIA-V3-Interim database. The exploratory outcomes demonstrated high acknowledgment rate for this proposed multimodal biometric ID framework.

In paper[2] it proposed a multimodal biometrics framework that consolidates face and fingerprint confirmation modules. The propound face confirmation module consolidates Gabor Wavelet surface method highlights what's more, face edge highlights. With respect to the fingerprint module, a straightforward calculation is connected for extracting features for each unique finger impression. The propound framework can be utilized adequately for individual recognizable proof at different applications.

In paper[3], it depicts, monomodal biometric frameworks issues. Answer for these issues can be found by utilizing multimodal biometric frameworks that unite proof from scores of different biometric frameworks. In which they have connected the execution of a score level combination for multimodal biometric framework against various monomodal biometric framework and a bimodal biometric framework dependent on highlight level combination of similar modalities.

In paper[4], it proposed the multifaceted nature of computation created by the PCA, empowered the analysts to consider incorporating a stag which could diminish the processing time to touch base to a genuine framework. Answers for location this is to utilize the vector of coefficient DCT of the picture as opposed to utilizing the vector of picture itself.

Data Hiding In Images with Two JPEG of the Same Scene

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Abstract: *- It is widely known that incorporating side-information at the sender will considerably improve steganographic security in practice. Currently, most side-informed schemes utilize a top quality "precover" image that's afterwards processed so conjointly quantity and embedded with a secret. During this paper, we have a tendency to investigate another style of side-information – a group of multiple JPEG pictures of identical scene – for applications once the sender doesn't have access to a precover. The extra JPEG pictures are accustomed verify the well-liked polarity of embedding changes to modulate the prices of adjusting individual DCT coefficients in Associate in Nursing existing embedding theme. Tests on real pictures with synthesized acquisition noise and on real multiple acquisitions obtained with a tripod mounted and hand-held photographic camera show a rather important improvement in empirical security with relevance steganography utilizing one JPEG image. The projected through empirical observation determined modulation of embedding prices is even exploitation Monte Carlo simulations by showing that qualitatively identical modulation minimizes the Bhattacharyya distance between a quantity generalized Gaussian model of canopy and stego DCT coefficients corrupted by AWG acquisition noise.*

Keywords: - Steganography, side-information, precover, acquisition, security, steganalysis, JPEG;

I. INTRODUCTION

Steganography is typically cast using three characters – Alice and Bob, who communicate by hiding their messages in cover objects, and the steganalyst, the Warden, whose goal is to discover the presence of secrets. Since empirical cover sources [2], such as digital media, are too complex to be exhaustively described using tractable statistical models [3], both the steganographer and the Warden have to work with approximations. This has fundamental consequences for the steganographer[4], who is unable to achieve perfect security, as well as for the Warden, who inevitably builds sub-optimal detectors. Most consumer electronic devices, such as cell phones, tablets, and low-end digital cameras, however, save their images only in the JPEG format and thus do not give the user access to non-rounded DCT coefficients[5][6][7]. In this case, Alice can utilize a different type of side-information – she can take multiple JPEG images of the same scene. This research direction has not been developed as much mostly due to the difficulty of acquiring the required imagery and modeling the differences between acquisitions. Prior work on this topic includes where the authors made multiple scans of the same printed image on a flatbed scanner and then attempted to model the acquisition noise. Unfortunately, this requires acquiring a potentially large number of scans, which makes this approach rather labor intensive. Moreover, differences in the movement of the scanner head between individual scans lead to slight spatial misalignment that complicates using this type of side-information properly. Because this problem is especially pronounced when embedding in the pixel domain, in this paper we work with multiple images acquired in the JPEG format as we expect quantized DCT coefficients to be naturally more robust to small differences between acquisitions. Since our intention is to design a practical method, we avoid the difficult and potentially extremely time consuming task of modelling the differences between acquisitions and make the approach work well even when mere two images are available to Alice. In another relevant prior art, the authors proposed embedding by stitching patches from multiple acquisitions in a predefined pattern. The individual patches are not modified and are therefore statistically indistinguishable from the original images. However, as the authors discussed in their paper there are likely going to be detectable differences between individual patches and inconsistencies at their boundaries.

Furthermore, the required number of acquisitions quickly grows with the length of the secret message. By using 150 acquisitions of the same scene (scans), the authors were able to embed only 0.157 bits per non-zero AC coefficient on average. We first report the results of experiments on BURSTbase for J-UNIWARD costs [8] across a wide range of quality factors and payloads and contrasted with J-UNIWARD and SI-UNIWARD to see the gain w.r.t. using only a single JPEG image and the comparison to other type of side-information. We also investigate how the gain in security decreases with increased differences between exposures. This section continues with a summary of experiments on BURSTbaseH images with hand-held camera on both J-UNIWARD and UED-JC[9]. Although the security gain is smaller than for BURSTbase, when the steganographer rejects bad bursts, a significant security gain is still observed w.r.t. steganography with a single JPEG. Finally, the appendix contains analysis that explains the shape of the experimentally determined modulation of costs.

II. LITERATURE SURVEY

E. Franz and A. Schneidewind, E. Franz,K. Petrowski [12], [13], [14]authors made multiple scans of the same printed image on a flatbed scanner and then attempted to model the acquisition noise. Unfortunately, this requires acquiring a potentially large number of scans, which makes this approach rather labor intensive.

T. Denemark and J. Fridrich, [15] authors proposed embedding by stitching patches from multiple acquisitions in a predefined pattern. The individual patches are not modified and are therefore statistically indistinguishable from the original images.

A. Foi, M. Trimeche, V. Katkovnik, and K. Egiazarian [17] authors proposed Images acquired using an imaging sensor are noisy measurements of the true scener by which we understand the image rendered by the camera lens. The randomness in the

Monitoring of Plants in Poly House using Automation

[1]Prof. Pushpmala Nawghare, [2]Priyanka Jawalkar, [3]Jyoti Bhoj

Abstract: Current period has made a major global food inadequacy due to climatic changes in the world. So, in order to overcome this issue, households may need to grow a conservative area of vegetables and other crops using artificial poly houses. Poly house is a controlled area in which plants are grown according to their requirements. Some of the parameters considered during maintaining a poly house are temperature, humidity, soil moisture, air movements etc. This paper describes the technique used to discern the plant disease using NDVI (Normalized Difference Vegetation Index). It is an image processing algorithm, which analyze the condition of plants from their appearance. Determining plant disease manually is challenging, so image processing is used.

Keywords: IoT, NDVI, DHT11, Arduino UNO, LDR.

1. Introduction

The primary occupation of India is agriculture, where most of the people depend on it. Agriculture gives the major contribution for the economic development of India. The aim of agriculture is not only to feed ever growing population, but it is also an important source of energy and a solution to solve the problem of global warming. There are various ways of developing plants. One of them is poly house. Poly house is the strategy which is used to grow the plants under controlled environment for rising yield and quality of the crops. Poly house uses an ultra violet plastic sheet, of thickness 150Im, which lasts for at least 5 years. It is built using iron pipes or bamboos. In general, the length of poly house is 25-30 feet and width is 4-5 feet. The progress of poly house and growth of crops depends on the internal environment of poly house such as humidity, temperature and soil moisture level. Poly house system monitors ecological conditions, to raise plant development with improved production in least conceivable time, which is one of the major objective of the modern cultivation framework. Automation in poly house provides data acquisition. It also majorly reduces the labour or manpower required for its upkeep. Along these lines making the framework helpful for little scale farmer, plantsman and horticulture analysts. Poly house is optimal solution for proper plant growth and high production of the crop.

BLOCK DESCRIPTION:

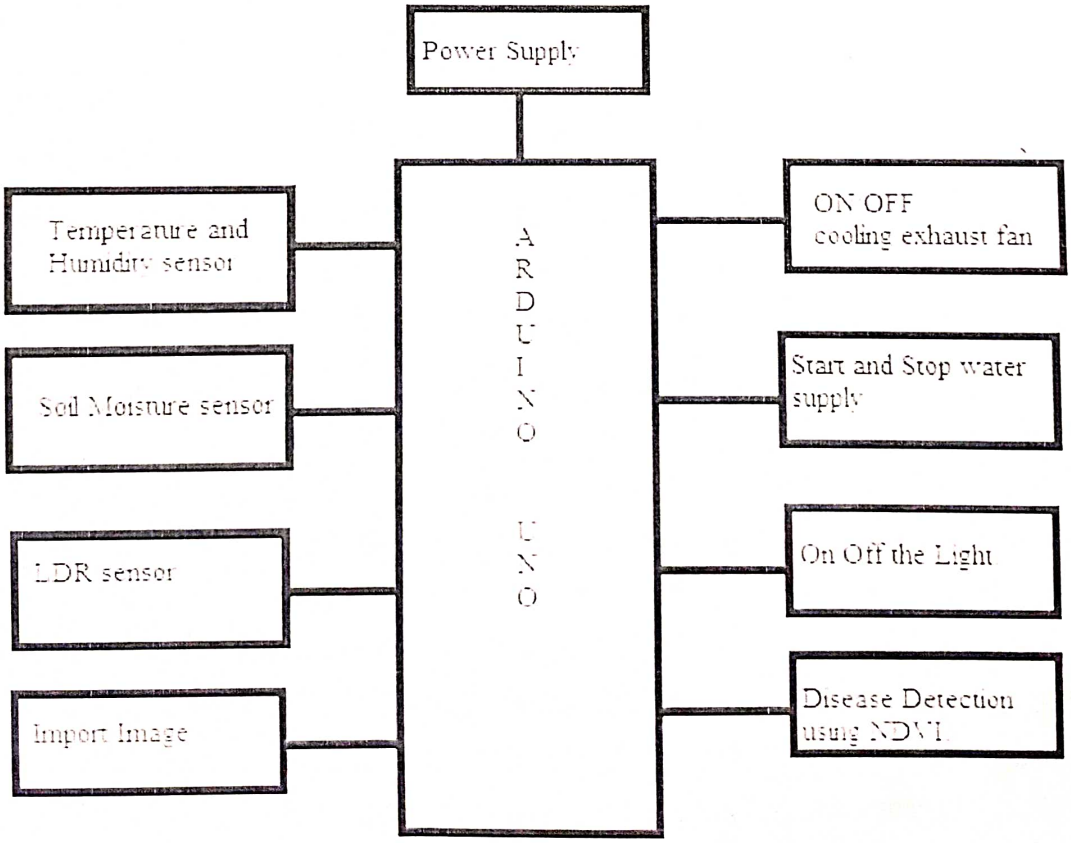

Figure 1. Block Diagram

MAINTAINTING SECURITY OF- DATA ACCESS IN CLOUD COMPUTING

[1]Prof. Pushpmala Nawghare, Seema Sagar, Sakshi Ughade, Asmita Surve
ZES"s ZCOER, Narhe, Pune

Abstract: Now a day"s people are using their smart phones for various purposes like uploading data, sharing data, use of online services, etc. along with their primary functions, but the problem with smart phones is that they are having limited computational power and storage space. Cloud computing along with mobile computing environment, solve this problem and also increases the capacity of mobile devices. The major problem of using cloud is the privacy issue, which also becomes the problem in mobile cloud computing environment. This paper gives light-weighed cryptographic machinery a proxy re-encryption to solve the data integrity, data security issues in which users has to keep only short secret keys for all cryptographic operations in mobile cloud without involvement of any trusted third party.

Keywords: Anonymous authentication, Advanced-Encryption-Standard, Elliptic-curvecryptography, sync traffic, reduplication, key Aggregation.

1. Introduction

Cloud-Computing refers to manipulate, configuring, and access the hardware and software possessions closely. It gives online data storage space, road and rail network, and submission. Cloud-computing provides display place independency, as the software is not compulsory to be installed in the neighbour hood on the PC. Consequently, the Cloud Computing is making our profitable and reliable-business applications mobile and collaborative. To save data on cloud, cryptographic machinery a proxy re-encryption system provides many benefits, like less cost, authenticity and availability, but the data privacy issues result into security and truthiness problems. Since portable cloud computing combines the techniques of portable computing and cloud computing, many users can upload there data on cloud through cell phones. This paper gives an idea of well-organized data circulation system in dynamic environment which gives flexibility to transportable users to strongly accumulate their data in cloud storage armed forces, and share their information with acquaintances. System given in this paper is several cryptographic prehistoric to release data space to yourself, data integrity, dynamical data adjustment and scoring from commencement to end, and stretchy data circulation. Also allows the dataset admin to anytime change and remove his data.

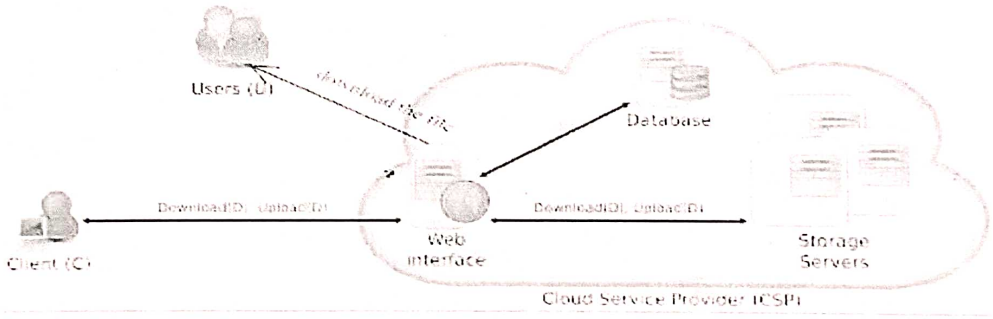

Fig 1. Basic Structure

In fig.1 the basic structure there are two categories/modules, first is user (admin) and second is client. Here, user and client both will get access of a file. The owner/ user accessing the all categories like upload, download, delete, accept request, remove request etc. Client has access only for upload, download, and send request to owner for accessing file. User or admin have fully access about the data accessing but client required the permissions for accessing the data. For that the client send request to the owner or admin for data accessing after accepting the request admin gives permission to client for access the file/data which is warehoused in the cloud. The data which remains stored in various storage servers and through the web interface user or client can store and access the data from cloud.

2. Existing Work

The interconnected employment on mysterious validation plans can be comprehensively ordered into open key cryptosystems (PKC) based plans [3]–[4], uniqueness founded cryptosystems investigation of STASIS and LSA. These proportions of semantic closeness can be connected to short messages for use in Conversational Specialists (CAs). CAs are PC programs that associate with people through regular language discourse [5]Tara"s Finikov proposed a system in which influence of transformation processes in higher education to lower academic standards, changes and deformation in ethical field of global and national higher education. We considered the genesis and

Poly House Monitoring and Plant Disease Detection

[1]Prof. Pushpmala Nawghare, [2]Ashwini Satpute, [3]Sejal Sakhare

Abstract: Current period has made a major global food inadequacy due to climatic changes in the world. So, in order to overcome this issue, households may need to grow a conservative area of vegetables and other crops using artificial poly houses. Poly house is a controlled area in which plants are grown according to their requirements. Some of the parameters considered during maintaining a poly house are temperature, humidity, soil moisture, air movements etc. This paper describes the technique used to discern the plant disease using NDVI (Normalized Difference Vegetation Index). It is an image processing algorithm, which determine the condition of plants from their appearance. Determining plant disease manually is challenging, so image processing is used.

Keywords: IoT, NDVI, DHT11, Arduino UNO, LDR.

I. INTRODUCTION

The primary occupation of India is agriculture, where most of the people depend on it. Agriculture gives the major contribution for the economic development of India. The aim of agriculture is not only to feed ever growing population, but it is also an important source of energy and a solution to solve the problem of global warming. There are various ways of developing plants. One of them is poly house. Poly house is the strategy which is used to grow the plants under controlled environment for rising yield and quality of the crops. Poly house uses an ultra violet plastic sheet, of thickness 150lm, which lasts for at least 5 years. It is built using iron pipes or bamboos. In general, the length of poly house is 25-30 feet and width is 4-5 feet. The progress of poly house and growth of crops depends on the internal environment of poly house such as humidity, temperature and soil moisture level. Poly house system monitors ecological conditions, to raise plant development with improved production in least conceivable time, which is one of the major objective of the modern cultivation framework. Automation in poly house provides data acquisition. It also majorly reduces the labor or manpower required for its upkeep. Along these lines making the framework helpful for little scale farmer, plants man and horticulture analysts. Poly house is optimal solution for proper plant growth and high production of the crop. This paper mainly concentrates on monitoring the plants in poly house and disease detection of the same, for which we are using NDVI algorithm. This algorithm is used to test the plants as well as the area. It was used by NASA in 1945 for determining the area which was affected by atom bomb attack happened on Hiroshima and Nagasaki.

II. LITERATURE SURVEY:

Table 1. Literature Survey

SR. NO	Title	Author and Year	Methodology	Limitations
1.	Automated monitoring and controlling of poly house environment	Shubhangi Bhosale, S. Sonawane. (8 August 2016)	Collects and control the poly house environment.	It only gives soil nutrient parameters in the green house to solve problems of plant disease.
2.	Controlling and environmental monitoring of poly house farm through internet	Shubhangi Bhosale, S. Sonawane. (3 June 2016)	Collects and automatically controls the condition of poly house environment by using sensors.	It only control and monitor the temp, humidity, soil moisture and not plant disease actually.
3.	Automated poly house using image processing	A. Saranya, P. Vijayalakshmi, K. Sushmita, R. Swetha(3 March 2017)	Poly house makes the farmer's work easy and it can be achieved by using image processing.	It detects the disease of plant only for the limited region.
4.	IOT based poly house monitoring and controlling system	Jayaty, Dhruv Binani, S. Nagadev (2018)	It reduces the direct supervision of humans.	Light is the most important source for photosynthesis but the light intensity is not measure.

Touchscreen Mobile Device Owner Identification Using Continuous Successive Gestures

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Abstract: Behavioral biometric on cell phones has turned out to be well known in previous some years and the capability of finger touch gestures as a new biometric style has been investigated of late. Securing the individual user information on touch screen smart mobile devices and makes the correct user validation is a critical issue. The unbending nature amongst security and ease of use renders, however the errand of client confirmation on cell phones a testing undertaking. This paper enlightens Multi-Touch Authentication method to ensuring information put away on touch screen cell phones (unique mark and Finger motions with need Authentication System utilizing Touchscreen Devices), a behavioral touch screen constructs validation approach in light of touchscreen cell phones. other than extricating touch information from touch screen prepared advanced mobile phones. This framework provides and approves this information utilization on touch screen smart mobile devices. A prominent motivation of this paper is to provide consistent, client straightforward post login authentication and verification Techniques.

IndexTerms - Hand-held touchscreen Mobile device, Mobile authentication, gesture recognition, Biometric.

I. INTRODUCTION

Technological proposals in computing world moving the attentiveness towards the touchscreen mobile phone devices by considering the I/O effectiveness and conjointly network property. According to Market study in 2015 there'll be 1.5 billion good phones and 640 million tablets in use worldwide [1],[2]. Moreover, companies, colleges, and government organizations square measure increasingly more handing out mobile computing systems and applications that authorize their staff to figure remotely whereas invariably staying connected to the group's or society's structure. The name of hand-held devices makes them the safe verification is required by the still massive information system of such gadgets and the diverse client suppositions for connection models, outstandingly when related to the ordinary validation arrangements. As showed in an investigation of more than 6,000,000 passwords, 91% of all client passwords have a place with a rundown of only 1,000 normal passwords [4] (e.g., Number of clients utilize either "secret key" or "123456" as passwords). These contraptions consistently contain private tricky Information, for instance, singular photos, email, bank card numbers, passwords, corporate data, and even business special bits of knowledge. Losing a PDA with such private information could be a shocking for the customer.

The proposed framework is three-shot confirmation answers for shielding touch screen handheld gadgets from robbery and misuse. We are implementing a Touchscreen Mobile Authentication System (TMAS) for better secure authentication. This framework works as the android application for touch screen android OS gadgets for more grounded security to the information put away finished the handheld gadgets from unlawful clients. This framework will address the definitive interest for a more secure and easy to use versatile verification arrangement that backings both aloof and ceaseless confirmation for portable clients in view of client's touch motions and unique finger impression acknowledgment. This framework will exploit the way that amid their connection with cell phones, clients reveal their one of a kind touch highlights, for example, finger weight and way, the speed and quickening of development. A basic favorable position of our approach is its straightforwardness to the client: the touch information is caught by versatile sensors without irritating typical client gadget collaborations. Amid the post login organize, the customary unequivocal confirmation process is activated just when framework recognizes that the present client is likely not quite the same as the advanced cell proprietor, that implies it identifies misfortune or burglary of the gadget.

II. MOTIVATION

Quantities of people groups are utilizing a touchscreen cell phone as a result of it have an extensive stockpiling limit and simplicity of Internet access from remote area. Touchscreen cell phone cell phones are simple for get to and accessible at least expensive rate in showcase, it gives almost same usefulness (e.g.- pdf record perusing, archive document proofreader and so forth.) as contrast with the PC, thus the ubiquity of the touchscreen cell phones increments. People groups utilize touchscreen cell phone gadgets to store individual points of interest like photo, contact subtle elements, monetary points of interest and so on and to get to their financial balances points of interest from such cell phones so giving security to such gadgets is the most critical thing The client utilized confirmation components connected on them still normal content passwords. The perceived issues identified with clients choosing feeble literary passwords [7]. In latest, user uses gesture pattern for authentication as a mechanism for security. They use gesture to provide security, Smart devices using a single gesture for authentication and it allows to authentic user to use the password as a pattern. The Password pattern is like draw-secret gesture (shape) on the screen. The form contains a random number of strokes between 9 dots shown in the finger.1 [8].It have large possibility to break single pattern by shoulder surfing attacks.

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A Survey on Intelligent Data Mining of Social Media for Better Decision Making

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[1,2,3]BE students,[4]Professor, Department of Computer Engineering. Zeal College of Engineering and Research, Pune

Abstract: The creation of social media and the rapid improvement of mobile communication technology have dramatically changed the way to express the feeling, attitude, temper, passion and so forth. People often express their reaction, fancies and predilections through social media by means of short texts of epigrammatic nature rather than writing long text. Many social websites like Twitter, Google Review, Just Dial, Book my show, etc enables people to share and discuss their thoughts, opinion and view in the form of short text, which can be useful for other unknown peoples, customers and service users to decide whether that service or product is good or not. In this paper, whole process is divided into two steps. In first step through intelligent data mining data will be abstracted and in second step analysis frame work will be there, which will focuses on positive and negative opinion and through R-Programming the visualization will be created will be helpful for peoples to make decision on their subject (i.e. on institute, services, products, movies, tourist spot etc.). In visualization section it will contain graph, pictures, etc. Comparison parameter can also be implemented which will be again very much helpful for user and peoples.

Keywords- co-extracting algorithm, co-extracting model, opinion targets, Opinion Relation Graph, opinion words, Topical Word Trigger Model.

1. INTRODUCTION

Online networking is giving boundless chances to patients to talk about their encounters with drugs and gadgets, and for organizations to get input on their items and administrations. Pharmaceutical organizations are organizing informal organization checking inside their IT offices, making an open door for quick spread what's more, input of items and administrations to enhance and improve conveyance, increment turnover and benefit, and lessen costs. Online networking information collecting for bio-surveillance has additionally been accounted. The idea of informal groups makes statistics accumulating tough. A few techniques have been utilized, for example, link mining, classification through links, predictions based on objects, links, presence, estimation, protest, aggregate, and subgroup location, and mining the information. Connection forecast, viral showcasing, online talk gatherings (and rankings) take into consideration the advancement of arrangements in view of client criticism. In the first stage of our current work, we employ exploratory analysis using the Self Organizing Maps to assess correlations between user posts and positive or negative opinion on the drug. In a second stage, we model the users and their posts using a network-based approach. Conduct a manual qualitative analysis of a large sample of software-relevant data to determine the information value of software users' posts. Use text classification techniques to effectively capture and categorize the various types of actionable software maintenance requests present in such posts. Investigate the performance of various text summarization techniques in generating compact summaries of the common technical concerns raised in software systems' Twitter feeds. Our main objective is to lay down an infrastructure for a more responsive and a more adaptive software engineering process that can achieve user satisfaction in an effective and a timely manner.

2. RELATED WORK

Artificial Societies and Social Simulation Using Ant Colony, Particle Swarm Optimization and Cultural Algorithms, This system proposes Ant Colony System Algorithm [1]. Artificial Societies and Social Simulation using exceptional techniques to analyze and model the important data to assist appropriate decisions of the evolving models. Advantages: Improves good quality in a short time. It has better performance.

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Intelligent Data Mining of Social Media for Better Decision Making

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ABSTRACT: The creation of social media and the rapid improvement of mobile communication technology have dramatically changed the way to express the feeling, attitude, temper, passion and so forth. People often express their reaction, fancies and predilections through social media by means of short texts of epigrammatic nature rather than writing long text. Many social websites like Twitter, Google Review, Just Dial, Book my show, etc enables people to share and discuss their thoughts, opinion and view in the form of short text, which can be useful for other unknown peoples, customers and service users to decide whether that service or product is good or not. In this paper, whole process is divided into two steps. In first step through intelligent data mining data will be abstracted and in second step analysis frame work will be there, which will focuses on positive and negative opinion and through R-Programming the visualization will be created will be helpful for peoples to make decision on their subject (i.e. on institute, services, products, movies, tourist spot etc.). In visualization section it will contain graph, pictures, etc. Comparison parameter can also be implemented which will be again very much helpful for user and peoples.

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Online networking is giving boundless chances to patients to talk about their encounters with drugs and gadgets, and for organizations to get input on their items and administrations. Pharmaceutical organizations are organizing informal organization checking inside their IT offices, making an open door for quick spread what's more, input of items and administrations to enhance and improve conveyance, increment turnover and benefit, and lessen costs. Online networking information collecting for bio-surveillance has additionally been accounted.

The idea of informal groups makes statistics accumulating tough. A few techniques have been utilized, for example, linkmining, classification through links, predictions based on objects, links, presence, estimation, protest, aggregate, and subgroup location, and mining the information. Connection forecast, viral showcasing, online talk gatherings (and rankings) take into consideration the advancement of arrangements in view of client criticism.

In the first stage of our current work, we employ exploratory analysis using the Self Organizing Maps to assess correlations between user posts and positive or negative opinion on the drug. In a second stage, we model the users and their posts using a network-based approach. Conduct a manual qualitative analysis of a large sample of software-relevant data to determine the information value of software users' posts. Use text classification techniques to effectively capture and categorize the various types of actionable software maintenance requests present in such posts.Investigate the performance of various text summarization techniques in generating compact summaries of the common technical concerns raised in software systems'Twitter feeds. Our main objective is to lay down an infrastructure for a more responsive and a more adaptive software engineering process that can achieve user satisfaction in aneffective and a timely manner.

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Human Social Network Addiction Detection using Social Networking

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Zeal College Of Engineering

Abstract
Our perspective, latest and modern to the apply on Social Network Human Addiction Detection, does not depend on demonstrative of those psychological elements through questionary. as a substitute, we recommend a machine learning frame, namely, Social Network Human Addiction Detection (SNHAD), with the aim of exploits characteristic take out from Social Network records to exactly recognize probable occurrence of SNHADs. The new users register on the social network like twitter and then login. The client has to posting their observation on the Social Network and be capable to keep an eye on their progression and find associated anomalies and the organization then retrieve the irregularity thing of that particular post from database which the user has posted and these posts are displayed in the anomaly list.

Keywords: Twitter text stream, blog and microblogs, emerging, anomalies.

1. INTRODUCTION

Through the volatile enlargement in attractiveness of community networking and communication apps, Online Social Networks (OSNs) contain a dimension of abundant users each day lives. Highest inspect on social web removal centre of attention on discover the understanding following the information used for humanizing users life. Though OSNs it seems that spread out their peoples' capacity in escalating community associates, they might in fact decline the confronting each other mutual connections in the real earth. Because of the plague range of such phenomena, latest requisites such as phubbing (Phone Snubbing) and Nomo phobia (no mobile phone phobia) have been formed to illustrate persons who not able to discontinue using mobile community network apps. They investigate also reveal that social network compulsion may unconstructively collision touching position, cause top opposition, sad feel, and obsessive actions. Still additional disturbing is to the interruption of before time obstruction might dangerously hurt persons' community implementation. In summary, it is admired to have the capability to aggressively notice likely SNMD clients on OSNs at an untimely phase.

2. MOTIVATION:

This System used to detect social network mental disorders person with using this system. We used anomalies tweets, login Sessions , Comments , Review , and some social media platform activities. The purpose of the system is used to detect anomalies or an abnormal event that occurs on social media like twitter by using text streams. This system is capable toward identify appearing anomaly at a previous phase compare toward the presented techniques.

3. Related work:

Using keyword co-occurrence, we evaluate interconnected occupation regarding subject recognition plus rising occasion recognition. It have lengthy acknowledged that representation of subjects otherwise actions base on KeyWord conjunction is an successful perspective. For expression collection plus KeyWord removal from documents Co-occurrence information has been used. A small content subject form that straight forms the creation of expression Co-occurrences prototype has been planned. In difference; our perspective accept a combined diagram processing outline during every stage plus meets the entire recorded morphological prerequisite. Identify the rising actions fundamentally requires recomputing collection from scratch though the effectiveness of mainly accomplishment cumulative estimation. For Twitter, this technique would produce lots of direction that merely enclose a distinct keyword, which is tough to understand.

4. LITERATURE SURVEY

In 2013 Jain.R[5] the main moto of this paper to examine the performance of unseen markov Model(HMM) and Support Vector Machince (SVM) for anomaly interruption recognition.
In 2014 Lin H.L[1] the moto of this paper cross-sectional learn were to inspect the relations of suicidal ideation plus effort with web habit plus significance performance in a huge representative taiwanese teenager inhabitants but the limatations of this paper is crosssectional research design of this study could not confirm the causal relationship between internet addiction and suicidality
In 2014 Ferrara[7] the moto of this paper is how do social interactions influence personality with combined nature? or else how does connectedness influence personality with combined relevant safety ?Yet how do trendy plus admired substance come out from those contacts? In this paper they deal with these querys by analyzing an rising sociotechnological
In 2015 K.Hayashi[9] We integrate both the interaction of meaningful subjects plus the penetrate of communication over the twitter stream.
In 2016 H Chang.C[11] the moto of this paper building predictive models that leverage language and behavioral patterns,used particularly in social media,to determine whether a user is suffering from two cases of mental disorder.
In 2016 Zhao.L[13] this paper proposes a novel feature learning model that concurrently addresses all the above challenges but the limitation of this paper is a huge computing power to train.Need to have HUGE amount of data.
In 2017 K.Kim[12] study on poor sleep quality and suicide attempt among adults due to internet addiction.

GROSS DOMESTIC PRODUCT (GDP) PREDICTION: A REVIEW

[1]Aparna V.Mote, [2] Utakarsha Musmade, [3]Nikita Deshmukh
[1]Assistant Professor, [2]Student, [3]Student
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Abstract: Gross Domestic Product (GDP) is mostly known as the main measure of economic performance. It is an economic survey of market values of all merchandise and services produced over a period of time, usually annually or quarterly. GDP is Nominal when calculated for current prices. When calculated for constant prices, it is Real GDP. The increase in real GDP indicates increase in the national output GDP per capita. GDP per capita at purchasing power parity (PPP) is possibly more useful while comparing the living standards between nations. This paper highlights the major components involved in GDP calculation. This paper reviews various indicators used for measurement of GDP and how they affect GDP.

Index Terms – GDP, Machine Learning, Data Mining

I. INTRODUCTION

Gross Domestic Product (GDP) is an economic measure which records the quantity of goods as well as services produced within nation's economic period. It is an economic survey of market values of all merchandise and services produced over a period of time, usually annually or quarterly. The main aim is to record the level of production within an economy. This is considered as main factor for calculating the economic performance. GDP value gives the total size of an economy. Overall health of the economy is generally measured by considering the changes in GDP usually referred as real growth in GDP[14].

GDP combines all private as well as public consumptions, government expenditures, various investments, difference of exports and imports. Usually GDP is calculated with followingformula:

Following figure shows the four important components of GDP:

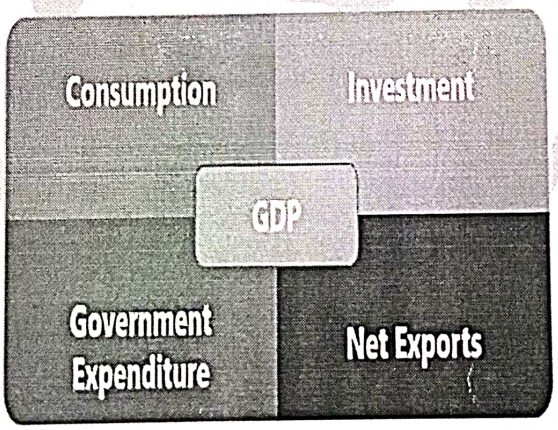

Fig 1: Components of GDP

- Consumption (C):

This component calculates money value of consumer goods as well as services purchased by households or profitless institutions during the year. These are categorized into consumer durables[15], semi-durables, non-durables and services. These categories mainly consider length of time within which goods are used.

- Investment (I):

Investment is nothing but the addition to the physical stock during specific time period. Gross Private Domestic Investment gives the collaborative value. This considers manufacturing of housing construction's machinery, factories construction. Goods used in the process of manufacturing of other goods called as intermediate goods. These intermediate goods get partially consumed[16] in the production of other goods as well as services. This is known as Depreciation of fixed capital goods. Depreciation is nothing but decrease in the value of current capital stock which is used in output production.

MODELING AND FORECASTING GROSS DOMESTIC PRODUCT (GDP) USING LINEAR REGRESSION

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Abstract: Gross Domestic Product (GDP) is mostly known as the main measure of economic performance. It is an economic survey of market values of all merchandise and services produced over a period of time, usually annually or quarterly. GDP is Nominal when calculated for current prices. When calculated for constant prices, it is Real GDP. The increase in real GDP indicates increase in the national output GDP per capita.GDP per capita at purchasing power parity (PPP) is possibly more useful while comparing the living standards between nations. This paper highlights the major components involved in GDP calculation. This paper reviews various indicators used for measurement of GDP and how they affect GDP. This paper used linear regression for GDP prediction.

Index Terms – GDP, Machine Learning, Data Mining, Linear Regression

I. INTRODUCTION

Gross Domestic Product (GDP) is an economic measure which records the quantity of goods as well as services produced within nation's economic period. It is an economic survey of market values of all merchandise and services produced over a period of time, usually annually or quarterly. The main aim is to record the level of production within an economy. This is considered as main factor for calculating the economic performance. GDP value gives the total size of an economy. Overall health of the economy is generally measured by considering the changes in GDP usually referred as real growth in GDP.

GDP combines all private as well as public consumptions, government expenditures, various investments, difference of exports and imports. Usually GDP is calculated with following formula:

Following figure shows the four important components of GDP:

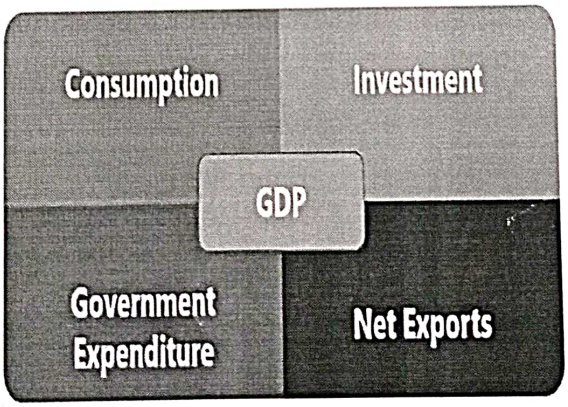

Fig 1: Components of GDP

- Consumption (C):

This component calculates money value of consumer goods as well as services purchased by households or profitless institutions during the year. These are categorized into consumer durables, semi-durables, non-durables and services. These categories mainly consider length of time within which goods are used.

A Review on Different E-commerce Sites with Outfit Composition

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Abstract: The fashion industry has evolved in many fields and its growing and making an enormous promote in article of clothing company and e-commerce entity. The challenging task for IT industry in fashion is to model a predictive system with the domain of data mining. E-commerce uses electronic communication as well as information technology in many transactions for creating, transforming or for redefining the relationships between individuals and organizations. It simply means buying of products, services and information and selling them through computer network. It is totally changing the traditional approach of business. The main change in business is noticeable growth and it has many significant effects on environment as well. This is the reason why it is so preferred in business nowadays. The objective of this paper is to review the present status and trends of E-Commerce websites for outfit composition.

Keywords: Convolutional neural Network, outfit product images, data mining

1. INTRODUCTION:

E-commerce uses electronic communication as well as information technology in many transactions for creating, transforming or for redefining the relationships between individuals and organizations. It simply means buying of products, services and information and selling them through computer network. E-commerce uses electronic communication as well as information technology in many transactions for creating, transforming or for redefining the relationships between individuals and organizations[10]. It simply means buying of products, services and information and selling them through computer network. It is totally changing the traditional approach of business. The main change in business is noticeable growth and it has many significant effects on environment as well. This is the reason why it is so preferred in business nowadays.

E-commerce websites is an important cluster composition for finding a good collection composition of almost everything. Composing E-commerce websites involve bottomless thoughtful of e-commerce principles while incorporate resourcefulness for choosing several e-commerce objects (e.g. clothing, mobile, shoes).

1.1 Important Factors of E commerce

The important factors responsible for the growth of E-commerce are

- Global Customers – customers available worldwide
- Global Products – Foreign product demands
- Global Operations – Availability of Transnational and Multinational Corporations
- Global Resources – Foreign raw material usage

2 Factors Affecting E-commerce:

The important factors affecting the E-commerce are categorized as follows:

1.2.1. Technical Factors:

- Infrastructure of Telecommunication
- New technical developments and their access
- Availability of bandwidth
- Rates of internet

1.2.2. Political Involvement:

- The initiatives by government to support the implementation of new technology
- Demoralizing regulations of government
- The interest of government for adopting the new technologies

1.2.3. Social Factors:

- Count of literate people
- Internet user's count
- Interest of people to learn new technology

Survey on Emotion Detection from Text using Automatically Generated Rules

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Abstract: Feelings have a noteworthy job in everyday correspondence between two people. Feeling identification can be coordinated and formed into the content to discourse applications. Most specialists have endeavored to identify the client's feeling in some ways, for example, outward appearance, voice, and content. A fruitful intelligent framework between individual and PC can be accomplished when the framework can perceive & decipher the outflow of a person feeling precise. The user emotions are recognizing in two way i.e. hard sensing and soft sensing. We can analyze the user by their gestures, emotions, and thoughts. An emotion can be described as a state of mind to express our feelings which affection, rage, excitement etc. Programmed feeling recognition from content has pulled in developing consideration because of its possibly helpful application. Perceiving feelings through content is one of the greatest difficulties for people and machines. The feeling location framework can be connected to numerous areas also, for example, in business (to perceive the clients' impression dependent on their announcement on the item offered), in training (used to identify the understudies' excitement for a web-based learning framework), in PC gaming, in emotional wellness, in national barrier, and others. Distinguishing human feeling through content is considered as the most basic one.
Keywords: Emotion types; Textual Emotions; ERR; Emotion analysis.

I. INTRODUCTION

Feelings or emotions are an integral part of our day to day life. Human mind can have variety of emotions which according to researchers have been categorised into 27 types but for basic it has categorised into sad, anger, disgust,fear, joy, happy. How someone is feeling can describe his/her activities and behaviour towards others. Research have suggested that in order to know emotions better it can be divided into three elements the subjective experience, thephysiological response, and the behavioral response [1].

The Subjective Experience

Even if the emotions are classified into some of the basic type but they all can be felt in many ways depending upon the situation and position. For e.g. a joy of getting passed in an examination is way different from that of joy of becoming parents [1].

The Physiological Response

Research have shown that there are many emotions that are controlled by our nervous system known as sympathetic nervous system(SNS) [1]. Emotions like butterflies in stomach or heart sinking are some of the examples of SNS. SNS can also result in sweaty palms or heart beating getting faster.Thesetypes of emotionscome under the physiological response.

The Behavioral Response

Humans always have a tendency to know the emotions of the persons he is surrounded with or interpreting what the other persons state of mind is. Emotional Intelligence can be described as the ability to accurately figure out the emotion of a person. This expression play an important role in knowing overall body language of a person [1].

Detecting emotions has been always a topic of discussion among researchers and a sufficient research has been done in detecting human emotions through facial expression and through speech. Detecting human emotions through text is still a new field and as compared to facial and speech detection. Detection of emotions through text can help in commercial world as well as in education field. Previous works has been done in regarding with text classification which can help to know sentences and paragraphs better and extract the emotion in it. Retrieval of information through text comes under the concept of text mining. The mining of text includes three processes: (I) The input text should be properly structured, (II) After applying preprocessing steps like removing stopwords, parsing patterns are derived (III) The retrieval of required information is the last step [2].

Ranking based recommendation using online social user data

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Abstract: Social throwing a vote is new segment in online casual networks. This is helpful in giving correct finding with the help of criteria like social trust etc. In this system we propose MF and NN recommender frame work helpful the criteria of user activities and also find the same peer reviewers, to find a correct recommendation. Through investigation of the actual societal selection traces, we test that group of societal and set affiliation text can automatically get better the correctness of high rating based selection commendation. We likewise inspect to societal and gathering data be significantly additional important to arctic user than to weighty users. Here, easy MP based nearest- neighbor (NN) model best computation exhaustive MF models in hot-voting proposal, whereas user happiness for non hot voting's MF models in hot-voting recommendation, while users interest in support of cold selection is healthier than via MF model.

Keywords: CF for Recommendation, OSN, RS, societal selection.

1. Introduction

The main moto of any commercial website is using e-commerce, a movie website for online is to display correct information to user.

A recommender framework is fundamentally a calculation used to give the client or the client an exact recommendation of the item or a film survey/rating they have been searching for [1]. This is essentially done in two diverse ways, one of which incorporates proposing a significant thing dependent on the client's history, which is his/her past movement identified with it (Personalized strategy). Another is the non-customized strategy which can be depicted as the regular deal that is expectation dependent on stock accessibility.

Numerous Recommender frameworks essentially take a shot at community oriented separating. Synergistic separating is a standout amongst the best strategy and a spine technique for the present social Recommender frameworks [2].

The increasing importance of the social voting system is used "information overload" difficulty: customer be capable of be simply overpowered in different selection to be started, participate, re-tweeted by his through friends and circuitous associates. The basic be to test and to display "right voting's" to "right clients" in order toward enhance client encounter with boost client commitment within a societal vote system. Recommender structures oversee over-loaded information by proposing the things that are likely of the customer's advantage. We present in this paper our ongoing exertion on creating RSs for the online social casting a ballot framework. i.e suggestion of intriguing casting a ballot crusades for clients. Unlike conventional things, such as various kinds of books, movies, the social voting system propagates along the social links. A client is bound to be characterized as casting a ballot if the casting a ballot was begun, taken an interest, or retweeted by her companions. A casting a ballot framework recognizable to a client is profoundly associated with the casting a ballot exercises in his/her social neighborhood. A client is bound to take an interest if his/her companions have taken an interest in the casting a ballot. Because of social spread and social impact, a client's casting a ballot conduct is emphatically associated with her social companions. Social casting a ballot presents different kinds of problems and opportunities for Recommendation systems utilizing social true information [26][32][34]. Furthermore, casting a ballot investment information are paired without negative examples. It is, along these lines, interesting to create RSs for social casting a ballot.

"Toward tending to these difficulties, we build up a lot of novel RS models, including network factorization (MF)- based models and closest neighbor (NN)- based models, to learn client casting a ballot premiums by at the same time mining data on client casting a ballot investment, user– client fellowship, and client aggregate distress. We methodically assess and analyze the execution of the proposed models utilizing genuine social casting a ballot follows gathered from Sina Weibo. The commitment of this paper is triple."

"Online social casting a ballot has not explored as far as anyone is concerned. We create MF-based and NN-based RS models. We appear through examinations with genuine social casting a ballot follows that both interpersonal organization data and gathering alliance data can be mined to essentially improve the precision of fame based casting a ballot suggestion."

1) Our analyses on NN-based models counsel that interpersonal organization data control gather association data and gathering data is more essential to cold clients than to substantial clients'.

2) The basic meta way base NN model break calculation serious MF model in the hot-casting a ballot suggestion, while clients' interests for non hot casting a ballot's can be improved mine by MF model.

A Review on Online Supermarket Models And Customer Interpretations

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Abstract: The processing on huge amount of text is performed by information system and that's why it becomes an important part of our daily routine. The information processing is also widely used in data mining to analyze customer behavior. The behavior of customer can easily analyze because so many customers now uses the online markets and market technologies for shopping purpose. We have described the existing literature that is done in supermarket to analyze the customer behavior and customer interest in purchasing products in nearby supermarket. Then in future we are going to propose our proposed system that will help to customer to find the right product in a nearby supermarket.

Index Terms – Online markets, supermarket, data mining.

I. INTRODUCTION

The processing on huge amount of text is performed by information system and that's why it becomes an important part of our daily routine. The information processing is also widely used in data mining to analyze customer behavior. The behavior of customer can easily analyze because so many customers now uses the online markets and market technologies for shopping purpose. This customer behavior statistic is playing very important role for retailer. The retailer can understand customer requirement as well as effective analysis may satisfy portability of product, quality of service and product, and satisfaction of customer.

Thus, Market Basket Analysis is one of the approach that can predict the customer behavior i. e customer purchase some group of items and along with these items they also purchase some other items for example while purchasing milk, they also purchase bread [1]. This customer behavior is based on previous expenditure pattern of that customer or client. Regarding this, Association rules are playing important role to check the relationship between items in big dataset transactions. It is also used in decision making and to calculate the risk factor.

When a significant item needs to find out from large dataset items, it becomes one of the important research areas in data mining. There may be the situation where same items but having different characteristics, quality and so on. So in such a case, customer behavior also may change. The customer who purchase frequent items that is calculated by using frequent itemset algorithm, called as Apriori Algorithm. This is one of the most important algorithm used in market basket analysis and it was proposed by Agrawal and Srikant in 1994 [2]. The Artificial intelligence algorithm, "Recommendation System" is used to filter the information of customer behavior and also it suggests some additional products to the customer [3].

To determine the past customer behavior , collaborative filtering is used. The customer purchase, activities and preferences are checked by using collaborative filtering and based on these parameter it predicts which products customer will prefer [4].
The goods arrangement in a shopping room and online recommendation of products are not related with each other. But the important thing is to analyze customer behavior by checking the transactions. By using this analysis, shop can make the promotions and improve the quality. For such a region, the retailer requires to construct powerful recommendation system. The quality of recommendation system will increase through processing large data. This large data is added through external heterogeneous sources. These sources can be integrated from offline and online markets. For example, suppose when we consider one specific market area, then range of products may be the similar but the characteristics or quality may vary. So, when we integrate the external data sources into existing system, it is also required to check structure and contents of data sources. Kutuzova and Melnik [5], proposed a system for integration of heterogeneous data source based on market basket analysis.

The goal of integration, which was provided by them, is to improve the quality of developed RS by utilizing extra information sources. These outside information sources may have a totally unique organization and contrast in content. For the shared examination of heterogeneous information, it is important to change over every one of the information to an appropriate single structure.
This incorporates investigation of information attributes, looking for basic gatherings of principles by utilizing cauterization techniques what's more, sifting of non-acclimating portions of information. Further, coordinated information from every accessible source are utilized to assess also, improve the nature of proposal framework
In this investigation, they examined the probable outcomes of improving the nature of a proposal framework for grocery of general stores and proposed the integration structure that permits adjusting outside heterogeneous information hotspots for fit to existed suggestion framework. The integration schema depends on a few market bin investigation strategies, for example, affiliation rules, shared sifting and cauterization. For the test contemplate, we discovered two datasets with exchange of information of general stores' clients. We characterize two measurements to assess the nature of developed proposal framework and direct investigations looking at the first and adjusted suggestion frameworks.

A Smart Online Grocery Shop System

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Abstract: Now a day's customer faces problems, to check availability of product in nearest supermarkets. And Retailers also cannot interact with multiple customers at a time or they don't entertain each and every customer quickly. And it is also difficult for the retailer, to collect the customer's requirements and making accurate products available in supermarket. In case, any customer requires any goods immediately, they cannot go for online shopping, because it takes time in delivery of that particular product. At that time, they can search the product in his nearby location. The overall structure is to help know the customer which is the products he intends to search. By having a searching mechanism the user can easily have his/her products by just standing outside the shops. He can also check the various commodities and its price tag on it, whether he goes for the product is according to his needs. The availability must be checked by having certain steps to the application which makes it easy for searching. A person can check the shops in full detail by using set of algorithms and software stages. This makes it easy to find the detailed product where user wants to buy. An application is done for this by using a set of specific algorithms of machine flows. Online shopping is done easily and due to product searching in nearest shops, product delivery becomes quick

Index Terms - : Online supermarket system, Artificial Intelligence, Optimal Character recognition (OCR), K nearest Neighbor (KNN), Convolution neural network (CNN), Google map, Image recognition.

I. INTRODUCTION

Now-a-days, the world is very much attached by mobile phones or we can say Android Operating systems. Before, the things which were done by computer systems, now a day's done by mobile phones in very less time span with the help of Android Applications. From finding information till finding road ways and from chatting online till tracing a number, all things can be done using Android Application. Due to these applications, world which was quite big or wide for us comes much closer and closer.

In recent days due to busy life of each and everyone we try to save our time and efforts in one or other way. If a person wants some product, mostly visit to the super markets. Then product needs to be searched and if we didn't got the product, it'll be difficult to ask dealer about it due to the huge crowd at store.

This effort of visiting and searching products is difficult and time consuming. So to overcome this problem we are making this Application where you can do these things online using your mobile phones. The OCR algorithm will easily recognize the product. And the detail of the super market with which product is available is shown to customer [4]. Using AI technology as well as machine learning, which shows the modern problems of waiting in the queue for shopping, is making a modern application. Such combinations can make an application that leads to growth. By using AI technology and machine learning, which shows the real world problems of waiting in the queue for shopping, is making a true modern application [1] [3].

OCR is used for recognizing the particular product, it scans the text which is on product and convert that image file in text file and these text is used for the searching purpose but there is one disadvantage of OCR that is , the accuracy of scanning the image or text is not 100% so to improve the accuracy of OCR, KNN(K Nearest Neighbor) algorithm is used. By using KNN the accuracy will increased at 100% [4] [5].

Online shopping of any products from any grocery shop is also available for users. In this we will provide online payment gateway, so by using these users can pay the bills online using credit or debit cards, online banking, Paytm, PhonePay, etc or cash on delivery. The application will also provide feature of providing instant or quick delivery of products to the customer from its nearest grocery shop. So it becomes very easy for customers to search the products and buy it online and it is also easy for retailers to interact with multiple customers.

Sometimes customer doesn't have enough time to visit each and every shop and checking the product which is required immediately or in emergency. In such cases this application is very useful. It will find the product which is nearest to user's location and will provide route to shop by map otherwise another option which is order online and get home delivery. By using these features customer will get products immediately as compare to other online shopping applications.

But according to survey many people prefers physical shopping for experiencing the better quality product by touching and seeing it. So these application will help the all the customers to search the nearest shop and after searching customer will guided through the map, these is very helpful to buy any product physically in very less time. Using this feature customer will get the exact and better quality product very easily. To provide this feature, K Nearest Neighbor is used for getting the nearest shop in the customers location by calculating the distance between customers's and shop's location. After getting or reaching at shop customer can buy the product physically [2].

II. RELATED WORK

2.1 Product Identification using CNN

In 2016, Jingsong Lin and Xiaochao Wang [1], discussed their system of supermarket commodity identification in which CNN(convolution neural network) is used for identification. By using small dataset of supermarket's goods, system is trained and used for identification of goods,with image recognition. CNN has neurons to calculate some value from given input which are image pixels and outputs are used for different categories. CNN consist of various layers, where convolution layer used for filtering method and pooling layer reduces parameters and control over fitting. In this way, the functions of these layers are used for categorizing data from layer to layer.

Performance Optimization in Multi-cloud Computing: A Review

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Abstract: Many users can use cloud computing technology to access the virtualized hardware and software infrastructure that is scattered and scalable over the Internet. Multi - cloud is a notion of assigning workload across several computers or other resources over network connections in order to achieve optimal use of resources, maximum throughput in minimum response time by ignoring overload. This needs load balancing and task scheduling algorithms and techniques on cloud computing. We have discussed papers that describe systems for load balancing to solve the problem of overall performance of the cloud computing environment which needs efficient task scheduling mechanism to improve resource utilization.

Index Terms - Performance Optimization, load balancing techniques

I. Introduction

The latest vision of large distributed computing is "Cloud". Cloud based multi-media system (CMS) gained momentums as there are large number of users. Cloud computing is internet computing and provides demand computers and other devices with shared resources, software and information, such as a public utility. Large distributed computing latest vision is "Cloud."Multi - media cloud - based system (CMS) has gained momentum as there are many users. Cloud computing is internet - based technology, providing computers and other devices with common resources, software and information on demand, such as a public entity. Cloud storage for the IT user is the most burning topic recently. So when a user utilizes a personal or financial computer for a higher purpose, then they also must have some valuable documents that the user is willing to invest more to defend the file. Cloud computing service providers need to handle gigantic requests as the cloud scale increases. So, despite Cloud Computing glorious future, many real issues still need to be explored for their perfect awareness. Load balancing is one of these concerns. Organization uses high - level cloud. As the request for the user increases rapidly, the request must be answered in less time. The one of the biggest problems is load balancing in cloud. The cloud is distributed so that dividing the work load efficiently becomes a vital task. Many solutions have been proposed in the conventional cloud load balancing system

Conventional algorithms have the other big advantage, making them ineffective in cloud computing to keep up with demand. The primary task of load balancing is to improve system performance and efficiency. The better use should be made of the resources. The number of user's increases, the QoS metric should remain the same. Despite an increase in user, the cloud service should not be affected. The response time when providing the service should be lower. The system should also be fault tolerant so that the system can change to another node or alternative path for distributing load whenever one node fails. Whenever a conflict occurs, due to one - point failure, the system should not be disturbed

By examining the difficulties of conventional algorithms, the genetic algorithm is used to deal with the problems actually faced by distributing the load in the cloud. It seeks the strongest and fastest efficient path and reduces the make span to distribute the work load as well. This algorithm seems to use positive response or acts like the real ant colony to discover the food and search one another with assistance of the pheromone they leave on their journey. The algorithm solves the cloud computing virtualization placement problem. Genetic algorithm is renowned for finding huge spaces and discovering the appropriate integration of things as well. This algorithm is not looking for the best possible solution, but is looking for the best and rigorous result especially compared to fitness criteria. And so, while measuring the fitness value, rather than dividing the appropriate local search, it looks for global. The genetic algorithm is based purely on Darwin's natural selection principle. In short, to work accordingly, the genetic algorithm uses search and scalable technique. In three stages, the genetic algorithm is processed. The first step includes population selection to enhance fit survival.

1.1 Cloud Computing

Apart from storing files on a primary hard drive or local storage device, cloud storage enables remote databases to save files. It is not necessary for the user to have access to information in a specific location as information to be accessed can be found in the "cloud". This particular system enables staff to work from anywhere. Companies allow users to store their database on remote servers, and then provide the data accessibility via the internet [1].

E-commerce: Digital Marketing Using Google Bot And Augmented Reality

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Abstract: E-commerce systems adopted augmented reality and cognitive computing as a brand new kind of good e-commerce. Mobile e-commerce applications mistreatment increased reality and psychological feature computing functions change higher user interaction, consumer satisfaction, looking value, quality, and shopping for choices. augmented reality (AR) combines machine generated things with real surroundings in an interaction between humans, and virtual reality. Within the same time, cognitive computing technologies like visual recognition, sentiment analysis, surroundings analysis, and speech recognition provide nice support for rising human decision-making and natural interaction. we tend to present a framework for sensible e-commerce applications development using augmented reality, mobile technology, and cognitive computing functions supported this framework, we tend to developed a example of a wise e-commerce web site. Digital promoting can be a term for the targeted, measurable, and interactive promoting of product or services exploitation digital technologies to attain and convert leads into customers and retain them. The key objective is to plug brands, build preference and increase sales through varied digital promoting .The sector of digital promoting includes a whole host of parts like Email promoting, SMS promoting, Social Media promoting, Paid Banners Ads, etc. This paper introduces a chatbot for marketing physical and digital goods and also services. This chatbot is applicable to direct and indirect selling. The main goal of this purposed style is to form conversion quicker. The customer's purchases and knowledge may be used to generate specific target audiences to send deals and promotions. It may be integrated into any woo commerce platform with minimum configuration.

Keywords: Augmented Reality, Mobile Applications, Smart E-commerce, Digital Marketing, Chat bot.

1. Introduction

Internet business framework is explicit because of the on-line trade of articles, services,and money among organizations or crosswise over firms and their clients to remain with this definition, there are two principle sorts of web based business: businessto-business (B2B), and business-to-shopper (B2C). As of now, E-trade and on-line looking are rapidly advancing, as a consequences of the comfort that was made offered

with the occasion of Workstation web innovation.

E-commerce and on-line needing produce people's life easier, significantly for people with disabilities and for others UN agency have issue teaming up in onsite

needing.Amazon.com, Dell.com, and Ebay.com turned into a region of our lives.

Web based business framework is said because of the on-line trade of articles, administrations, and money among partnerships or crosswise over firms and their clients .to remain with this definition, there unit a couple of primary sorts of web based business: business-to-business (B2B), and business-to-customer (B2C).

Presently, E-trade and on-line looking unit rapidly advancing, as an after effects of the comfort that was made.Be that as it may, to remain with our encounters, online business and on-line needing are as yet helpless to totally supplant nearby looking, outstandingly for item like article of vesture, shoes, adornments, and decorations. for a few item, on location needing has a few particular edges contrasted with on-line looking. one in all the first edges is that on-line needing doesn't regularly supply enough information various item for the supporter to make Associate in Nursing knowing call before checkout. On location customers commonly act in some very communication with their potential buy to go watching out the aroma, surface, appearance, as well as sound before looking for it. This ability is normally unsatisfactory with on-line buys out there

with the occasion of PC and web innovation.

The mobile optimisations of e-Commerce additionally impacts however firms hook up with shoppers and market their merchandise. most people, notably those within the younger demographic, keep their mobile devices shut and handy, so that they area unit rather more accessible to marketers and advertisers. on-line and digital selling campaigns have nearly replaced previous ways of advertising, golf stroke merchandise before of shoppers. They additionally strategically reach shoppers in places wherever they pay their time on-line, such as: As e-Commerce has evolved, on-line selling has become ostensibly limitless in its potential to achieve and persuade shoppers throughout their on-line behavior. commerce through social media is turning into the quality across many of the larger social networks.

2. Literature Survey:

In paper [1], Simulated user habits and predict users behaviour.Custom recommendation formula has been extensively studied, and plenty of algorithms square measure projected. Those algorithms will meet user's must a particular extent. Custom recommendation has been paid far more attention presently by an exquisite vary of researchers.

Crop disease detection using Image Processing

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Abstract: - India is one of the developing countries which is based on agriculture productivity. As agriculture is the main production in India protection of plant is the main concern. For the protection of plant detecting the crop disease is the most crucial task to prevent serious damages. Various crops are caused by fungal, bacterial and many other viruses. Fungal diseases are the most common parasites causing the crop. Bacterial diseases can be occurred on the crop to crop. Fungal is less harmful than bacterial diseases. Viruses cause on plants which are responsible for a huge amount of loss in crop production or agriculture production. Thus, the proposed system mainly focused on reducing crop diseases occurred due to various viruses, fungal or bacterial diseases using an image processing technique. The current system works on the detection of crop diseases and recommends fungicides/bacteriocytes (fertilizers/pesticides) based on that disease. The proposed system takes crop image as an input and applying processing technique is used to detect whether a disease occurs on that crop or not. After applying processing technique output is generated in the form of the name of disease and also gives a suggestion of fungicides/bacteriocytes (fertilizers/pesticides) in required content. The classification of images as a diseased image and healthy image by using Convolutional Neural Network. Processing technique follows following method: Acquisition of particular image, pre-processing of that image, image segmentation and feature extraction according to various features, classification of an imageof an image which is a part of the convolutional neural network and recommend fertilizers as an output.

Keywords:- Image processing, convolutional neural network (CNN), segmentation, classification.

I. Introduction

As we know India is based on agriculture production. Natural factors are responsible for the reduction in agriculture production. Weather cannot be control by the farmers and since in day to day life farmers lost their agriculture production. To provide the better-quality products it is very important that farmer must maintain the quality and quantity of specific agriculture product. To improve agriculture productivity detection and identification of crop at early stages is very important though it is a crucial task. Detecting diseases which occurred on the crop are somewhat difficult for farmers. For this purpose, image processing is the best procedure which translates the image into its digital form. Many types of research are already done on the current issues but they all are only for a single or particular crop. Hence, the proposed system is helpful for a farmer to overcome these issues. The proposed system is developed for reducing issues related to crop diseases and also to enhance agriculture productivity. Convolutional neural network (CNN) and uses some processing technique for classification purpose. This system takes a crop image as an input through mobile camera or database and scans the image. Afterwards input image is given to the next stages for further processing. This stage is known as image procurement. In the next stage of processing the resizing of an image is done. In the segmentation stage of a system background subtraction is done by applying some filtering mechanism. Classification of an image is done with the help of Convolutional neural networks technique. For the purpose of classification deep learning method is mainly used. We can take the help of feature extraction in order to compare the attribute features between healthy and diseased image. Attributes like color extraction, shape, etc. These are the stages in which image is scan and find out the disease occurred on the crop. Based on that disease occurred on species of crop fungicides/bactericides (fertilizers/pesticides) are recommend on required content and final output is displayed. Current implementation mainly focused on various image classification algorithms.

II. Dataset

This framework contains csv information of pictures. It required a lot of dataset. In this proposed framework dataset contains solid leaf picture of the harvest as a source of perspective which is contrasted and the sick leaf picture of yield and gives the result. Here, effectively prepared dataset is utilized. This effectively prepared dataset contains numerous plants yet the testing dataset predominantly chips away at the three harvests for example Rice, Maize, and Bajara. It will anticipate yield dependent on testing picture given to the framework. Dataset keeps up around at least 1000 than csv pictures.

III. Convolutional Neural Network (CNN):

Convolutional neural system (CNNs or ConvNet) is a class of deep neural systems, most normally connected to dissecting visual imagery. The effective uses of a variety of multilayer perceptrons intended to require negligible preprocessing by CNN. Convolutional systems were motivated by natural processes in that the network design between neurons takes after the association of the creature visual cortex. A CNN design is shaped by a pile of unmistakable layers that change the info volume into a yield volume (for example holding the class scores) through a differentiable capacity. A couple of unmistakable kinds of layers are normally utilized. These are additionally talked about underneath. Figure [1] shows different layer of convolutional neural network (CNN).

A) Convolutional Layer
B) Pooling Layer
C) ReLu Layer
D) Fully Connected Layer

Improved Algorithm for Visual Summarizarion of Image Collections using Crowdsourcing and Infinite Push Ranking

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Abstract

New approach has been given for selection of images which are appropriate for part of the visual summaries. The novel method present crowdsourcing and Infinite Push method for performing Visual Summarization of image collections. Most of visual summarization algorithms are guided by notions of relevance, representativeness and diversity of visual content. Explicit information on human's perception regarding summarization process is not referred. This method is outlined on the base of how people generally thinking about generating summaries of image collections .Crowdsourcing experiment is performed for getting manually selected visual image summaries and method which help users for appropriate image selection. Based on insights of crowdsourcing experiment has purposed technique to select images automatically for generating visual summary. This technique utilizes the study various aspects of images like popularity of images, sentiment related to images, content and context of images. This technique defines images on the basis of their properties and semantic relation between images. It enables aesthetic features, sentiment analysis, and emotions associated with a specific group of images. Extraction of different features of images like luminance, colorfulness, sharpness, aspect ratio is done. These features are used to model image aesthetic appeal. The Infinite Push Ranking Method is used for training of crowsourced dataset. This system is excellent in terms of performance as compared with existing RankSVM method.

Keywords: Crowdsourcing, Infinite Push Ranking, image aesthetic appeal

1. INTRODUCTION

Tremendous amount of digital data from digital media is accessible from content sharing and social networking websites and personal collection. Therefore there is need of powerful algorithms for representation, summarization and analysis of data for efficient retrieval and searching.

Summarization methods, provides a brief but comprehensive representation of multimedia data or text .Summaries may contain text, videos, segments, images. Existing visual summarization systems uses relevance, representativeness, diversity of visual content while developing summarization algorithm. The framework and details of the overview is depend on the goal it should fulfil, the exact evaluation of its quality can be evaluated with respect to its compatibility with the expectations of the individual users. Therefore the specific criteria containing the users perception of the summarization quality must be recognized and applied to guide the summarization algorithm. This approach present Crowd sourcing and Infinite Push method for performing Visual Summarization of image collections. User informed visual summarization is guided by notions of crowdsourcing study and Infinite Push pair wise ranking method. This improved algorithm is outlined on the basis of how people generally think while generating summarization of a set of images. For obtaining humans insights regarding summarization process crowdsourcing experiment is performed. This approach utilize the study various aspects of images like popularity of images, sentiment relates to images, content and context of images, image popularities. Here the extraction of different features of images like luminance, colourfulness, sharpness, aspect ratio is done. In crowdsourcing experiment first run a large scale crowdsourcing, try to acquire information in to how people perform visual summarization. Then utilize this information to determine on the correct functions, based on which images in the collection could be ranked. The position reflects the suitability of a image as a choice for addition in the summary, that's how probably a image could be picked for the overview by the users. The topic makes the following benefits:-

Ransomware Threat to Organizations

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Abstract : Today's world is a fast moving world. Distance is no more a barrier to communication or knowledge sharing. Everything is available online. Physical presence is not compulsory, online working is a new key factor. In different organizations as well as banks, all can be handled online. But while using online services threat of different types of attack is increased. As we know the internet is one type of huge network which serves all clients. High risk of different types of cyber attacks is emerging. Ransomware is one type of cyber attack which is a growing global cyber security threat and it is one which could affect any organization very easily. Ransomware is an attack in which files or user screen are locked or encrypted and to unlock them "ransom" i.e money in exchange for something is demanded from an authorized user of the system. For limiting the impact of ransomware on organization there are several mechanisms such as good access control, frequent backups of data etc.

Keywords: Ransomware, Ransom, Cyber attack, online services

1. Introduction

In the 21st century, all information is available in just one click. The internet is a global system of interconnected computer networks. All information is made available at any corner of the world in just one click. Many services are made available online. Online banking is a good example of online services. Different cyber attacks are emerging these days. Ransomware [1] is one type of cyber attack. All these cyber attacks try to forge data sent over the network. Unwanted traffic is created at a specific node to fire Denial of Service (DoS) [7] attack. Attacks like spoofing, spooning are used to steal information in between of data transfer. Due to cyber attacks information available online is at high risk.

Following are some cyber attacks:

Phishing – Phishing means sending unwanted emails to thousands of customer and tries to ask for personal details like bank details or passwords or attract the people visit a fake website. In phishing some offers are given to attract users and personal information like phone number, bank account number and passwords are asked to submit.

Water Holing – Water holing means setting up fake and non-legitimate in order to harm users which are legitimate. In water holing attack, attacker sees the websites which is frequently seen by a victim or a group of victims, and these websites are infected by malware so that when a user visits that particular website malware is easily passed to victim's machine. It is mechanism for attracting legitimate users to visit infected website.

Ransomware [1] – In ransomware attack, malware used to make an attack on a victim and important data and files of the user are decrypted with the secret key. Ransom is demanded to decrypt data and files and to get access to the user machine.

Following are stages of cyber attack [13]:

1. Survey: All detailed information about the target is collected and analyzed to identify potential vulnerabilities of users.
2. Delivery: Delivery is about getting to the point in the target system where vulnerabilities can be exploited and attack can be fired.
3. Breach: In breaching vulnerabilities in victim are exploited to gain unauthorized access to system
4. Affect: Carrying out malicious activities

In ransomware [2], user's files or user home screen is locked or encrypted by an attacker. So the legitimate user of the system is unable to use those files or the whole system. Attacker demands ransom i.e money to decrypt or unlock files or user home screen. Ransomware is the biggest threat for online systems as important files or the whole system is encrypted. In online systems such as banking, share market etc. important files should not be at such risk.

Since the beginning of year 2016, ransomware has been growing as a global cyber security threat, which could affect any possible organization that does not have appropriate and strong defense mechanisms to detect and defend attackers. Ransomware is typically used by criminal people to earn money. Money is demanded in form of BitCoins i.e. Cryptocurrency High volumes of users with vulnerable devices get affected due to this attack. In 2017, WannaCry [2] attack was fired. Here, computers having Microsoft Windows operating system were targeted by encrypting important files and data and demanded payments in the Bitcoin

IOT Based Smart Traffic Management System using Image Processing.

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Abstract: Number of vehicles are increasing rapidly day by day, Therefore traffic blocks have become very common problem. We can use the smart traffic control system for controlling these problems. Smart traffic management system works by measuring the number of vehicles using real time images.

Keywords :Edge detection, Haversine, Thresholding

1. Introduction

Because of the expansion in the quantity of vehicles step by step, traffic blockage and roads turned parking lots are normal. One strategy to defeat the traffic issue is to build up a wise traffic control framework which depends on the estimation of traffic thickness out and about utilizing ongoing video and picture preparing methods. The quantity of vehicles out and about builds step by step in this manner for the best use of existing street limit, it is imperative to deal with the traffic stream proficiently. Traffic blockage has transformed into a difficult issue especially in the progressed urban zones. The key reason is the development in the quantity of occupants in the broad urban territories that thusly raise vehicular travel, which makes blockage issue.. Because of traffic blockage there is additionally an expanding cost of transportation on account of wastage of time and additional fuel utilization. Match traffic request to supply with ideal utilization of accessible open assets and accompanying advancement of residents' private assets for movement needs. Casually expressed for street traffic, the issue can be viewed as trying to oversee traffic ideally on a street organize utilizing accessible open assets while enabling natives to finish their day by day travel needs ideally. A case of the issue is: For a given day, limit extra time installments to traffic faculty while limiting normal drive time per km. Administration destinations can likewise be expressed like normal drive time per km be beneath 10 mins/km.

A. Edge Detection Using Sobel Algorithm

It is used in picture planning and PC vision, particularly inside edge ID estimations where it makes an image focusing on edges. At each point in the image, the delayed consequence of the Sobel– Feldman manager is either the relating incline vector or the standard of this vector. The Sobel– Feldman director relies upon convoying the image with somewhat, separable, and entire number regarded divert in the level and vertical heading and is along these lines commonly sensible to the extent computations. On the other hand, the edge gauge that it produces is commonly grungy, explicitly for highrepeat assortments in the image.

B. Distance Calculation utilizing Lat/Long (Haversine recipe)

The haversine recipe decides the incredible hover separate between two points on a circle given their longitudes and scopes. Imperative in route, it is an extraordinary instance of an increasingly broad equation in round trigonometry, the law of haversines, that relates the sides and points of circular triangles.

Literature survey:

Naeem Abbas[1] explained that following points.

1. Thresholding : Segmentation includes isolating a picture into locales relating to objects. We more often than not attempt to fragment areas by recognizing normal properties. so also, we distinguish shapes by recognizing contrasts between areas . The easiest property that pixels in a locale can share is power. Thus, a characteristic method to section such locales is through thresholding, the partition of light and dull areas. Thresholding makes combined pictures from diminish measurement ones by turning all pixels underneath some farthest point to zero and all pixels about that edge to one. If g(x, y) is an edge type of f (x, y) at some overall edge T. g is identical to 1 if f (x, y) ≥ T and zero for the most part.

2. Raspbian: Debian-based working structure redesigned to the Raspberry. the presently proposed structure, & formally releases in July 2012, in spite of the way that it is as yet being created. It is free programming and kept up not dependently of the Raspberry Pi Foundation. . It gives few open deb programming groups, precompiled programming packs. A size of 2 GB memory card is needed to Raspbian, anyway a 4 GB Memory card is mandatary. the Raspbian "wheezy" picture record must be loosened and a while later stayed in contact with a sensible SD card, orchestrating it for use.

Load Balancing In Distributed File Systems Using Clouds

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Abstract: Distributed File System constructs essential blocks in distributed computing dependent on Map Reduce programming overview. The nodes perform computation and storing operations. The input file is divided into specific amount of pieces. Generally, the nodes tends to fail when up gradation, replacement and addition operations take place in distributed file system. Due to this operations the files parallel are automatically modified which lets in load imbalance problem, proper distribution of file chunks are not possible in cloud DFS. In the server the load balancer arises with bottleneck issue. The system proposed framework sheds light on load re-balancing problem caused in DFS frameworks particular for designating the file chunks as consistently as conceivable among the storage nodes with the end goal that none of the storage node deals with an unreasonable number of file chunks. Specifically, the proposed system will include linear algorithm which will have a quick convergence rate. The proposed system will be including HDFS to maintain logs and set of data and will be analyzed by using big cluster.

Keywords: DFS(Distributed file system),HDFS(Hadoop Distributed File System), Linear Programming, Load Balancing

1. Introduction

Many numbers of computers connect with each other in cloud computing network. The cloud operates on internet and is responsible for various operation like delete, create, append and replace of nodes. The IT users exchange the information, share resources with each other under cloud umbrella. The cloud characteristics are, User Centric, Platform Independent, Scalability, On Demand Service, Powerful and Versatility. Cloud incorporates Map-Reduce programming, Virtualization and distributed file systems for the information and data storage reason. An established model, for example, Distributed file system utilizes procedure of creating file chunks on distributed cloud computing operation dependent on the Map-Reduce paradigm technique. Map-Reduce includes slave-master architecture i.e Slave will work as Data node and Master will work as Name Node. The Name node i.e Master node is responsible to divide the large task into multiple number of chunks and assign the task/work to slave to resolve the problem separately. The Map-Reduce programming paradigm in DFS breaks the big file or given task into number of pieces so called as chunks and give each chunk separately to the performing node on basis of MapReduce function running parallel over each storage node. By considering example of word count application which try to find the occurrences of every distinct node or machine in big file task. The system is responsible to break a large file into equal pieces or chunks by assigning those chunks to the network of nodes under cloud umbrella. The master node identify the presence of each distinct word by applying technique of scanning parsing of its own chunks assigned. The Master node accumulates the result from each node attached in cloud to calculate and find the final result. The load of each node is decided with assumption of the file chunks allotted to it in runtime. We can say that number of file chunks are directly proportional to load of each storage node. The cloud system or DFS in cloud is progressively inclined to issue that a frameworks increment away and arrange the load balancing issue immerges. There ought to be some method to adjust the load balance over various hub or frameworks to improve framework execution, asset usage, reaction time and solidness in the system. As number of storage increases in nodes i.e number of files, assesses to that file increase then middle or central node (Master Node which is implementing Map-Reduce) is facing problem of bottleneck. The solve the load imbalance problem there should be technique designed to eliminate load balancing problem by finding appropriate load re-balancing algorithm. The storage nodes are based on the structured over the network based on DHT i.e Distributed Hash Table, each chunk is looked up by rapid key in DHT table, which is tagged by the unique identifier. The proposed system targets to minimize the movement cost which is caused by load imbalance problem due to nodes which uses maximum network bandwidth. In the system the client submitter application will try to submit the task to server. After receiving the task the server or master node will divide the task to volunteer clients or storage nodes. The linear programming algorithm may be used for load distribution which is based on current load which will be given to volunteer client/storage node. The clients/storage nodes also spelled as volunteer will try to complete the task and send the response or result to the server. The master of server will assemble the result and will send the reply back to Submitter client application gradually.

2. Need of Project

The proposed system will focus on upgrade for Resource Utilization, perform Optimized Scheduling with the objective that End customer can get Cloud Cost Justification on big cluster.

3. Related Work

Survey of Different Load Balancing Approach-Based Algorithms in Cloud Computing: A Comprehensive Review[1] The paper focuses on many number of load balancing algorithms with pros and cons. According to survey there is enough scope for researchers to build a good load balancing algorithm for cloud computing environment.

INDEX

3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during year 2018-19				
Sr. No.	**Title of paper**	**Name of the author/s**	**Name of journal**	**Is it listed in UGC Care list/Scopus/Web of Science/other, mention**
1	Design of sliding mode controller with proportional integral sliding surface for robust regulation and tracking of process control systems	Dr. A. A. Khandekar	Journal of Dynamic Systems, Measurement, and Control	Scopus
2	Designing of Smart switch for Home Automation	Prof. S. G. Mane	International Research journal of Engineering and technology	Peer Reviewed
3	Bridge type Solid state fault current limiter using ac-dc Reactor	Prof. S. G. Mane	International Research journal of Engineering and technology	Peer Reviewed
4	Electrical Vehicle Charging By Electromagnetic Induction Via Loosely Coupled Coil	Prof J. A. Gurav (Kshirsagar)	International Research Journal of Engineering and Technology (IRJET)	Peer Reviewed
5	Prototype Model of Hyperloop Transportation System based on BLDC Motor and Permanent Magnet	Prof J. A. Gurav (Kshirsagar)	International Research Journal of Engineering and Technology (IRJET)	Peer Reviewed

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Design of sliding mode controller with PI sliding surface for robust regulation and tracking of process control systems

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ABSTRACT

This paper deals with design of Sliding Mode Controller (SMC) with proportional plus integral sliding surface for regulation and tracking of uncertain process control systems. However, design method requires linear state model of the system. Tuning parameter of SMC has been determined using Linear Quadratic Regulator (LQR) approach. This results in optimum sliding surface for selected performance index. Matched uncertainty is considered to obtain the stability condition in terms of its upper bound. A conventional state observer has been used to estimate the states. The estimated states are then fed to controller for determining control signal. The simulation study and experimentation on real life level system have been carried out to validate performance and applicability of the proposed controller.

1 Introduction

Process control systems, possess properties such as, higher order, non-linearity, slow dynamic behaviour, time delay and external disturbances. These properties makes designing of the controller difficult. Thus, general practice of controller design for process control systems needs mathematical model. Determination of accurate model is almost impossible. Hence, working model of the plant is obtained using various techniques of system identification. These working models always introduce parametric uncertainty. This leads to necessity of ensuring robustness in addition to stability of the controller to achieve tight control performance.

Due to simplicity in design and implementation, Proportional Integral Derivative (PID) controllers are used in process control applications [1]. Among the PID design/tuning methods reported in literature, most of the PIDs are designed using lower order linearised process models [2–5]. This leads in additional parametric uncertainty, resulting due to model order reduction. However, very few PID designs are based on higher order model [6, 7]. But, still issue of robustness remains unsolved, if the robustness measures are not considered in design process.

Sliding Mode Control (SMC) is one of the robust control technique, which possess inherent properties such as, invariance to parametric uncertainty and disturbance rejection [8–12]. The stability of SMC can be ensured by generating stability conditions. Also, desired dynamic performance can be achieved by proper selection and designing of sliding surface [9].

Time delay is another important issue in controller design for process control systems. Since, very few SMC design methods have incorporated time delay in designing process. The common approaches to consider delay in design are, approximating delay by first order Taylor series or Pade's approximations [13, 14], Smith Predictor [15] or delay ahead

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DESIGNING OF SMART SWITCH FOR HOME AUTOMATION

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Abstract:- *The aim of this project is to control our daily home appliances wirelessly to make life simpler using android devices and applications. We are using android device and applications to control the home appliances through manually and automatically. Ahead we will be using sensors and temperature sensors for making it more efficient and convenient. Sensors which are used has different values and algorithms which helps to save the power consumption. And this project is cost and manpower saving.*

Keywords:- Wi-Fi module, Ada-fruit, smart phone, ESP8266.

1. INTRODUCTION:-

The project leads to an enhancement of home automation by using Ada-fruit server and Wi-Fi technology. The home devices can be operated and sensors can be read through PC, tablets, mobiles or Wi-Fi. Automation is taking place in common day to day life as compared to older days of manual ON/OFF procedures. It also reduces the tragedies like electric sparks and short circuit. With the help of Wi-Fi technology automations adds the values and used for controlling the home appliances. Wi-Fi uses the radio frequency for signaling purpose to transfer its data wirelessly with the speed of 1 Mbps to 3 Mbps. It has 2.4 GHz frequency and range is 10-50 meter. Smart switch is master switch which controls the home appliances. End user can install and register the applications in their smart phone using Wi-Fi. Also switch can be operated through PC. Then they can manage their electric appliances in a convenient way. This switch operated by three methods:-

1. By using smart phone application.
2. by voice recognition.
3. by manual operation.

For the failure of operation of the smart phone application and voice recognition there is the option of the manual operation.

2. LITERATURE SURVEY:-

This project uses the android application which is directly associated with Ada-fruit sever and end user can control their home appliances like fans, lights etc. Smart home system for physically disabled people via Wi-Fi module as the medium to control and monitor home appliances [1]. User can give commands through smart phone and which will transmit the information through MQTT application. Then ESP8266 Wi-Fi module recognizes the specified command, and controls the home appliance switches in the wireless frequency manner to achieve remote control of appliances ultimately [2].

3. MOTIVATION:-

The best motivation this project reveals that a handicap user can also control all his/her home appliances without moving in any of the aspect. For handicapped people it is essential to develop home automation system which required less and easy user interaction. This project made a different platform for disable user as they are equally functioned as like a normal person. Home automation provide them a low cost and flexible environment.

4. METHODOLOGY:-

Through Android phone signals are send to Wi-Fi module in the same network. Android application has all the GUI (Graphical User Interface) buttons for each appliances. Wi-Fi module gets the signal from smart phone application each command is processed by Wi-Fi module and control the relay board for switching on/off the appliances. At the last end user can easily access the home appliances through command using Google assistance which is connected to ESP8266.

4. OBJECTIVES:-

The main aim of this project is to develop home automation system which provides the whole control to normal and disabled users to access the home appliances manually and wirelessly. The Smart Switch will have the ability to be controlled from a mobile, computer through the internet with an android mobile based application. And also manually. Those switches are operated via internet access or without internet access. [1]

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BRIDGE TYPE SOLID STATE FAULT CURRENT LIMITER USING AC/DC REACTOR (BSSFCL)

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Abstract - : *The aim of this project is to reduce magnitude of fault current using AC/DC reactor in bridge type solid state fault current limiter topology(BSSFCL). In this project bridge rectifier with reactor is used. Where during normal working condition the topology is in DC mode, whereas when fault occurs a topology change into AC mode. The advantage of BSSFCL over existing DC reactor type fault current limiter(FCL) is that, at normal operating condition the impedance is negligible whereas, at fault the impedance is high. The switching of circuit DC to AC mode is controlled by TRIAC switching component.*

Key Words: ACS712, Arduino Atmega 328P, TRIAC, Reactor.

1. INTRODUCTION

Because of utilization development, new power age plants ought to be introduced. Creating systems and the interconnections may expand the flaw current dimensions, which are more than the most extreme short out limit of circuit breakers. The expanded deficiency current dimension can make serious harms the system. Among various blames in dispersion organize, the short out shortcoming is the most common one and can cause genuine harms, for example, overvoltage, loss of synchronization, overcurrent, overheating, equipment connected to system may lead to malfunction and insulation breakdown .

To anticipate these issues, a few arrangements are utilized, for example,

Updating the switchgear and other related parts. Associating the power electronic converter interface among systems and recently introduced dispersed generator (DG). Control framework reconfiguration. Associating high impedance transformers for expanding impedance of the system and furthermore new arrangement like the use of the Unified Interphase Power Controller (UIPC) for flaw current control in interconnected frameworks.

2. METHODOLOGY

In this system we using Atmega 328P Arduino controller for switching sequence of TRIAC'S . This switching sequence can be controlled, on the condition of system that is 1. Normal operating condition and 2. At fault occurrence. This project reduces some amount of magnitude of fault current, which will make the system to work as a normal condition. For this to happen bridge rectifier circuit is used, where reactor changes its mode from DC to AC. During normal operating condition BSSFCL topology remain in DC mode, such a way it changes into AC mode when fault occurs.

3. PROPOSED METHOD

This device is a progressive energy framework gadget which delivers issues because of expanded issue current dimensions. Whereas name suggests, this device is a gadget that reduces imminent flaw flows to a lowest dimension.

The essential thought of any extension type issue current limiter, is as per the following,[7]. 1) t is smaller than T shortcoming, therefore impedance of the proposed BSSFCL is near 0ω 2) At t is greater than T deficiency, therefore impedance of the proposed BSSFCL increases forcefully couple of milliseconds. A shortcoming current limiter (BSSFCL) is the best answer for the deficiency current confinement Regarding BSSFCLs defensive response, BSSFCL can be classified into two types.

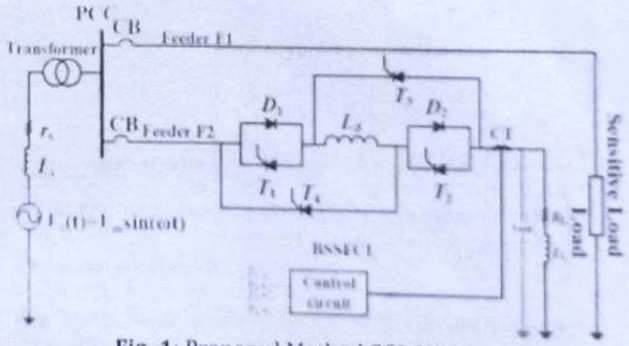

Fig -1: Proposed Method Of BSSFCL

3.1 DC OPERATION MODE

Fig.1.1. Demonstrate the DC actuating method of BSSFCL.[7] For this situation, the BSSFCL works as a rectifier connect that actuates dc voltage on the arrangement reactor and

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Electrical Vehicle Charging By Electromagnetic Induction Via Loosely Coupled Coil

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ABSTRACT - In this project, a method of electric vehicles charging with the use of large bus vehicles moving along national highways and provincial road proposal and described. This method relies on charging vehicles from bus while moving either with plug-in electric connection or by electromagnetic induction via loosely coupled coils. Open research challenges and several avenues or opportunities for future research on electric vehicle charging are outlined. Wireless charging of gadgets is one of the new arriving technologies in the world at the moment. The most widely used method at the moment is wireless power transfer by inductive coupling. Wireless power transfer is one of the simplest and economical ways of charging as it drop the use of conventional copper cables and current carrying cable. The system consists of transmitters and receivers that contain magnetic loop sky wire critically tuned to the same frequency due to operating in the electromagnetic near field, the receiving devices must no more than about a one-fourth wavelength from the transmitter.

Key Words **WPT-Wireless Power Transmission, Inductive Coil, Transmitter Circuit, Receiver Circuit, Electric Vehicle, Electromagnetic Induction.**

1. INTRODUCTION

Electricity is today necessity of modern life. It is challenging to imagine passing a day without electricity. In the future transport area electric vehicles are consider as replacement of internal combustion engine driven vehicles. Principle of wireless electricity works on the principle of using coupled resonant body for the transference of electricity. By deploying wireless power transmission we can reduce the transmission and distribution losses and increase efficiency to some extent. Wireless energy transfer can be useful in such applications as providing power to independent electrical and electronic devices. This energy which is transferred can be derived from renewable sources. With the help of resonant magnetic field that wireless electricity produces, while reducing the wastage of power. The receiver works on the same principle as radio receivers where the device has to in the range of the transmitter. The system consists of wireless electricity transmitters and receivers that contain magnetic loop sky wire critically tuned to the same frequency.

I. SYSTEM DESCRIPTION

Energy Coupling:

Energy coupling occurs when an energy source has a means of transferring energy to another body. One simple example is a locomotive hauling a train car the mechanical coupling between the two enables the locomotive to haul the train, and overcome the forces of friction and inertia that keep the train can still the moves. Magnetic coupling occurs when the magnetic fields of one gadget. An electric transformer is a device that transfers the energy from its primary winding to its secondary winding, without the windings being connected to each other. It is used to "transform" AC current at one voltage to AC current at another voltage. Interacts with a second gadget and induces an electric current in or on that gadget. In this way, electric energy can be transferred from a energy source to a powered device. In divergence to the example of mechanical coupling given for the train, magnetic coupling does not require any physical contact between the gadget generating the energy and the gadget receiving or capturing that energy.

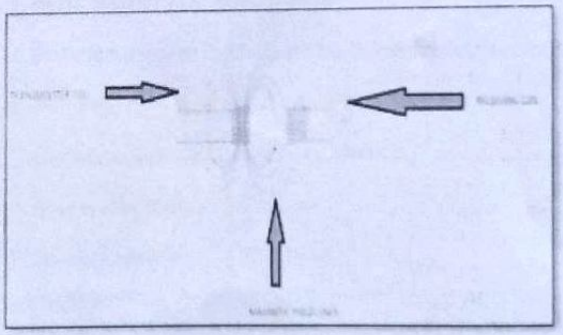

Fig.1: Inductive loosely coupled coil

Transmitter Circuit:

The input from mains is given to the power frequency controller. The output of this system is given to MOSFET/IGBT. The main purpose of using MOSFET/ IGBT is to convert DC to AC and also for amplifying square wave at the gate input. The voltage given to the transmitting coil generates the magnetic field around it. The capacitor is connected to the coil parallel and hence the resonating circuit is formed. Until the resonant frequency of receiving

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Prototype Model of Hyperloop Transportation System based on BLDC Motor and Permanent Magnet

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ABSTRACT - **There are four modes of transportation like rail, road, water & air. But, they are either relatively slow or expensive. To overcome this difficulties hyperloop concept is develop. In this project, explain the concept of hyperloop transportation system. It is high speed ground transportation system used for passenger & fright transportation. It uses the pod like vehicle which travel at high speed more than airline speed in low pressure vacuum tube. It works on the principle of magnetic levitation. Two permanent magnets are used one for the track and other for pod. So, pod is suspended on track due to the force of repulsion & propelled by the Brushless DC motor.**

Key Words: **Hyperloop, Magnetic Levitation, Capsule, BLDC Motor, Embedded System, Bearing, Vacuum Tub**

I. INTRODUCTION

The Hyperloop is a concept for high speed ground transportation, consisting of passenger pods traveling at high speeds in a low pressure vacuum tube. The hyperloop concept was originally proposed in a white paper published by SpaceX in 2013. And it currently developed between Los Angeles and San Francisco, which was more expensive and slow. The hyper loop concept required for alternative transportation mode for short-haul travel. For short routes, such as Los Angeles – San Francisco the time required for traveling is more at the speed is relatively low as compared to overall end-to-end travel time. Now days KPMG Company published hype loop concept on the Helsinki–Stockholm. Which carried out the analysis on this route. The time required to cross this distance 28 minutes. Also the market share for high speed transportation system is increasing rapidly in the day by day. The effect of Hyper loop concept on the airline & road transportation system.

The hyper loop is now emerging concept more companies are research on this concept. The spaceX is Organise competition for student and also give the sponsorship for student. This is start from June 2015. More than 1,000 teams submitted their hyperloop concept in competition and more than 100 teams design the hyperloop prototype model last Week of January 2016. The student team from the Massachusetts Institute of Technology the MIT Hyperloop Team won 1st prize in the spaceX competition last week of January 2016. In hyperloop concept the main focused in academic research mostly on the system integration. A conceptual sizing too using the Open MDAO framework focuses primarily on the aerodynamic and thermodynamic interactions between the pod and tube, with recent work focusing on the energy consumption of the system. The pods for the SpaceX Hyperloop Competition were the rest physical prototypes of the Hyperloop concept.

Hyperloop Transportation System (HTS) was founded for the to reduce the crowd collaboration as an integral component of its business model, from the first day of inception to becoming a multi-billion dollar company. More companies started investment in the hyperloop transportation system so fund rises rapidly .The crowd has power, offering opinions and expertise that are difficult to come by easily unless harnessed through collaboration,. The crowd sourcing model has proven itself in a variety of contexts, and has shown that it can beat even the brightest scientists and supercomputers that energy.

II. SPECIFICATION OF COMPONENTS

1. **Battery-** Lead acid Battery (2200mAh 11.1V)
2. **BLDC Motor-** 12V, 1400 rpm
3. **POD Dimension-** 2.5 inch width, 2.5 inch length
4. **PVC Pipe-** 3 foot, 4 inch diameter
5. **Electronic Speed Controller-**(simonk 30A)
6. **BluetoothModule-** HC-05
7. **Microcontroller-** ATMAGA16A

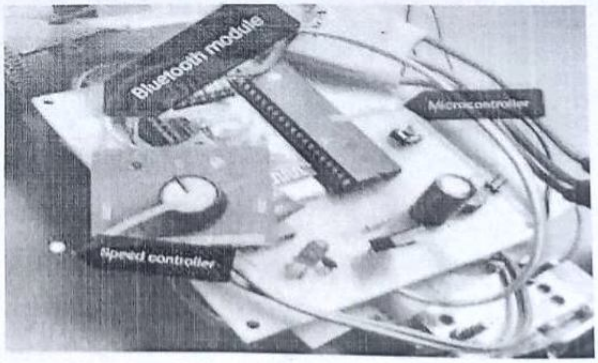

Fig.1: Prototype model of Hyperloop Car

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3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during year 2018-19

Sr. No.	Title of paper	Name of the author/s	Name of journal	Is it listed in UGC Care list/Scopus/Web of Science/other, mention
1	Effect of novel flow divider type turbulators on fluid flow and heat transfer	Chandrakant L Prabhune	Thermal Science and Engineering Progress, 9 (2019),322-331	Scopus
2	SiC contents and pin temperature effect on tribological properties of Al25Zn/SiC composites	Parmeshwar P Ritapure	International Journal of Refractory Metals & Hard Materials 82 (2019) 234–244	Scopus/SCI
3	Study of mechanical and sliding wear behavior of Al-25Zn alloy/SiC/Graphite novel hybrid composites for plain bearing application	Parmeshwar P Ritapure	Tribology in industry 41(3) (2019)375-38	Scopus
4	Stress Analysis of Carbon Fiber Reinforced Composite Laminate with Different Centrally Located Cutouts	Abhijit M Kasar	Materials Today Proceedings Elseveir, 16(2019), 592-597	Scopus
5	Experimental Investigation Of An Aluminium Thermosyphon At Normal Operating Conditions	Mutalikdesai Sachin V., A. M. Kate	Journal of Thermal Engineering	Scopus
6	CFD Simulation of In Cylinder Gases of Multicylinder Diesel Engine for Estimation of Liner Temperature from Gas Side	C. L. Prabhune	International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-8S3, June 2019	Scopus
7	Thermal Power Plant Condenser Fault Diagnosis Using Coordinated Condition Monitoring Approach	Hanumant P. Jagtap	Instrumentation Mesure Métrologie Journal, Vol. 18, No. 3, June, 2019, pp. 223-235	Scopus

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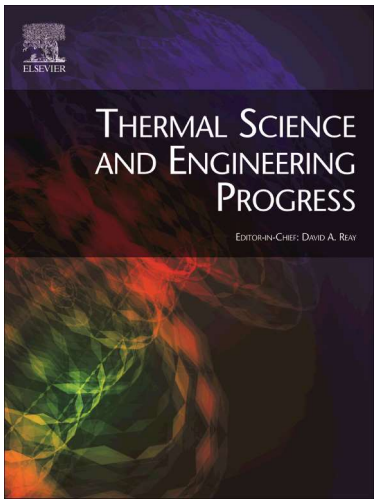

Effect of novel flow divider type turbulators on fluid flow and heat transfer

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EFFECT OF NOVEL FLOW DIVIDER TYPE TURBULATORS ON FLUID FLOW AND HEAT TRANSFER

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Abstract

This research article reports the results of experimental and numerical findings on friction coefficient and forced convection heat transfer characteristics for air flow inside a heated tube incorporated by novel flow divider type turbulators. The simulation tests were conducted for turbulent flow regime within the Reynolds number range of 7000 to 21000. The parameters investigated were the pitch to tube diameter ratio (p/d = 0.54, 0.72 and 1.09), with angle of twist (θ) 90°. The introduction of this novel turbulators induce an extra turbulence near tube wall and thus efficiently disrupt a thermal boundary layer. The experimental as well as numerical simulation test reveals that the heat transfer rate, friction factor and thermal enhancement factor increased with decreasing pitch to diameter ratio (p/d) of novel flow divider type turbulators. The mechanism behind the heat transfer enhancement is observed to be displacement of the fluid from central core region towards the walls of tube by novel flow divider type turbulator. As well as CFD simulations were conducted to find the effect of change in angle of twist of the turbulator, which shows that Nusselt number enhances by 1.33 to 1.46 times, and 1.43 to 1.60 times respectively for 45° and 30°.

Keywords: Convection heat transfer, novel flow divider type turbulator, Nusselt number, Thermal performance factor

Nomenclature

A	Surface area of the test section, m^2
C_p	Specific heat of air at constant pressure, $J/kg\ K$
h	Heat transfer coefittient, W/m^2k
Nu	Nusselt number, (dimensionless number)
f	Friction factor, (dimensionless number)
d	Smooth tube inner diameter, m
l	Length of test section, m
p	Turbulator pitch, m
$\dot{m}$	Mass flow rate, kg/s
u	Fluid velocity in x-direction, m/s
Q	Heat transfer rate, w
Re	Reynolds number, (dimensionless number)
TPF	Thermal performance factor
PEC	Performance evaluation criteria
T_i	Inlet temperature, $°C$
T_o	Outlet temperature, $°C$
T_s	Surface wall Temperature, $°C$
T_b	Mean bulk temperature, $°C$
P	Pressure, Pa
k	Turbulent kinetic energy, m^2/s^2

Greek symbols

ε	Turbulance kinetic energy dissipation rate, (dimensionless)
ρ	Density, kg/m^3

ScienceDirect

International Journal of Refractory Metals and Hard Materials
Volume 82, August 2019, Pages 234-244

SiC contents and pin temperature effect on tribological properties of Al25Zn/SiC composites

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Highlights

- The novel Al25Zn/SiC composites have been successfully fabricated using stir-casting technique.
- In spite of decrease in ductility, highest wear resistance, hardness, tensile strength and lowest COF is observed for the composite with 15wt% of SiC.
- The dominance of pin temperature (65.03%) on wear rate and COF is confirmed by S/N ratio, ANOVA and SEM of worn surfaces.
- Regression and ANN model are found capable of predicting wear behavior of the composite with reasonable accuracy.

Abstract

In this investigations, an effect of silicon carbide addition on dry sliding wear behavior of Al25Zn/SiC composites was studied at different temperature, load and sliding speed for a sliding distance of 1400 m using a pin on disc tribometer with EN24 shaft steel disc as per Taguchi L_{16} orthogonal array. Under equal test situation, highest wear resistance, hardness, tensile strength and lowest coefficient of friction were observed for the composite with 15 wt% of SiC. The pin temperature is identified as the most influencing factor for the wear and friction characteristics of the composites. Regression model and Artificial Neural network model developed were found capable of predicting wear behavior of the composite. The mechanism of wear observed is adhesion, abrasion and delamination.

Previous Next

Keywords

Vol. 41, No. 3 (2019) 375-386, DOI: 10.24874/ti.2019.41.03.07

Tribology in Industry

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RESEARCH

Study of Mechanical and Sliding Wear Behavior of Al-25Zn alloy/SiC/Graphite Novel Hybrid Composites for Plain Bearing Application

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Keywords:

Sliding wear
Hybrid composites
Surface morphology
Aluminium-zinc alloy
Temperature
Artificial neural network

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A B S T R A C T

In this investigations, sliding wear performance of Al-25Zn based novel hybrid composites added with fixed weight percentage of graphite (3 wt.%) and varying weight percentage of silicon carbide (10, 20 and 30 wt.%) was investigated for various process factors such as specimen temperature, applied load, sliding speed and sliding distance using a pin on disc with EN24 disc as per Taguchi L_{16} array. For similar test conditions, the composite with 10 wt.% of silicon carbide shows the highest wear resistance and tensile strength; whereas the composite with 20 wt.% of SiC shows highest hardness. The specimen temperature is recognized as the dominating parameter for the sliding wear performance of the materials. Artificial Neural network and Regression model developed was found competent for the forecasting of wear performance. Confirmation experiment conducted with the optimum parameter combination also confirmed the accuracy of developed model. The observed wear mechanism is abrasion and adhesion. The major mechanisms of abrasive wear are recognized as ploughing, micro cutting and delamination.

1. INTRODUCTION

Metal matrix composites based on aluminum Zinc alloy are presently finding better utility in various engineering applications due to excellent sliding wear and mechanical characteristics. Among zinc aluminum (ZA) alloy family ZA-27 is the strongest and commonly used material for bushing, plain bearing and many sliding wear application. In automobile industry, mechanical press, compressors, hydraulic, steam and gas turbines, gear pumps etc. plain bearing is commonly used [1-4]. ZA alloys are observed as the excellent bearing

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Yildiz Technical University Press, Istanbul, Turkey

EXPERIMENTAL INVESTIGATION OF AN ALUMINIUM THERMOSYPHON AT NORMAL OPERATING CONDITIONS

Sachin V. Mutalikdesai[1*], Ajit M. Kate[2]

ABSTRACT

The paper presents experimental investigation of an aluminium thermosyphon charged with acetone as working fluid. The effect of filling ratio on steady state performance of thermosyphon is experimentally investigated. Experimentation is performed at three different ratios namely 30 %, 60 % and 100 %. The effect of heat input and mass flow rate of water is also investigated. The heat input is varied between 50 to 300 W and mass flow rate is maintained in the range 30 lph to 60 lph. A condenser section of thermosyphon is surrounded by two pass aluminium cooling block for effective condensation. The cooling block is design in such a way that water will absorbs maximum heat from working fluid in condenser section. The temperature at outer surface of thermosyphon is recorded with the help of temperature sensors. The temperature distribution at outer surface of evaporator and condenser observed to be almost uniform for all mass flow rates and filling ratios. The heat transfer limitations are not encountered for any of thermosyphon. The filling ratio has significant effect on outer surface temperature of evaporator. The surface temperature of evaporator increases by 20 % with increasing the filling ratio at 150 W heat input and 30 lph mass flow rate. The results also indicate that mass flow of cooling water has significant effect on total thermal resistance of thermosyphon at lower input. For 50 W heat input, minimum thermal resistance is recorded as 0.269 °C/W at 60 % filling ratio and 50 lph mass flow rate. While for a same heat input, maximum thermal resistance is recorded as 1.077 °C/W at 100 % filling ratio and 60 lph mass flow rate.

Keywords: *Thermosyphon, Filling Ratio, Mass Flow Rate, Surface Temperature, Total Thermal Resistance*

INTRODUCTION

The budding energy demand of modern world leads to develop efficient energy utilization device. Different techniques in combination with natural and forced convection are used for proper utilization of available heat energy. During working on refrigeration problem Gaugler in 1944 first introduced heat pipe [1]. The heat pipe or thermosyphon is evacuated sealed tube filled with appropriate quantity of working fluid. It transfers the heat even at lower temperature difference between source and sink. The condensate return mechanism differentiates heat pipe from thermosyphon. In thermosyphon condensate returns to evaporator solely due to gravity, while in heat pipe it returns through wick structure. The evaporation and condensation of working fluid transport the heat from source to sink. In last few decades, extensive research has been preformed to investigate effect of various parameters on thermal operation of thermosyphon.

Yong et al. [2] examined performance of grooved surface thermosyphon with various fill charge ratio. The copper thermosyphon containing FC-12 (C_6F_{14}) as working fluid was used during study. The improvement in heat transfer coefficient was observed at condenser of grooved thermosyphon by increasing fill charge ratio. For evaporator, negligible change in heat transfer coefficient was found. Ong and Alahi [3] investigated performance copper thermosyphon charged with R-134a refrigerant. The increase in heat transfer flux was observed by increasing fill ratio, bath and condenser temperature difference and coolant flow rate. Noie [4] examined performance of copper thermosyphon charged with distilled water. For each aspect ratio maximum heat transfer rate was observed at different filling ratio. Hussein et al. [5] experimentally investigated flat plate solar collector with different cross section geometries of wickless heat pipe. Circular, semi- circular and elliptical sections were used during investigation. The elliptical solar flat plate collector shows better performance as compared to circular at lower fill

This paper was recommended for publication in revised form by Regional Editor Tolga Taner
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CFD Simulation of In Cylinder Gases of Multi-cylinder Diesel Engine for Estimation of Liner Temperature from Gas Side

N. B. Totla, C. L. Prabhune, N. K. Sane

Abstract: ***The simulation /estimation of cylinder temperature for power stroke of internal combustion engine along with liner temperature from gas side is pertinent/significant/essential to investigate the thermal distortion of a liner at different points along its longitudinal direction from coolant side. The present research/study includes estimation/finding of approximate temperature of in cylinder gases during power stroke and thereby liner temperature from gas side using water, and ethylene glycol as a coolant for present diesel engine. The present study includes numerical simulations based on Inbuilt ICE Combustion model in ANSYS 15.0 version where dynamic/time transient meshing of combustion space above piston during power stroke is used. Appropriate averaged boundary conditions were set on different surfaces for the combustion model. The variation of temperature of cylinder combustion gases and temperature of liner along gas side at different crank angle is reported. Observations are done that the highest combustion gas temperature occurred during power stroke was about 2150 K and minimum temperature is found to be 800 K. Also the maximum temperature on liner from gas side along stroke was found to be 470K during power stroke. It has been also found that the maximum temperature of in cylinder gases and liner from gas side persists only during early power stroke***

Index Terms: Combustion, liner, grid, dynamic mesh, simulation

I.INTRODUCTION

Internal combustion engines are the preeminent prime mover/consistently good source of energy for all kinds of locomotive and industrial applications. Combustion research is wide ranging because of potentcarving/sculpting method like CFD. In compression ignition (CI) the combustion chamberpolyphase liquid dynamics parameters like diesel injection, kinetics of chemical reaction, creates an impact on the combustion process. Previously, the burning of fuel and burning growth/development had been carved/sculpted with many distinct models viz. the eddy dissipation model and its descendants, supplement of the coherent flame model like PDF time scale models, and the RIF model. Recent researches related to the evolution /progress of new and reliable models for burning of fuel process has been filed in the literature

. **Revised Manuscript Received on May 22, 2019.**

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C.L.Prabhune, Professor,Department of Mechanical Engg,Zeal College of Engineering and Research,Narhe,Pune.

Dr.N.K.Sane, Adjunct Professor,Walchand College of Engineering,Sangli.

II.LITERATURE REVIEW:

For this entire research work following literature is reviewed

Carmen C. Barrios et al. [1] explored the use of Computational Fluid dynamics (CFD) code FLUENT for shaping convoluted combustion process in diesel engine. On one-cylinder diesel engine,tests were performed at a steady speed of 1500 rpm on full load. Here Combustion process conditions such as pressure rise, combustion pressure and rate of heat liberation were estimated through experimentation. The FLUENT is also utilized to replicate fuel burning process. They reported that the experimental values were in good agreement with the predicted values of CFD simulations.

F.Christodoulou and A.Megaritis*et al.*[2] reported consequences of concurrent/coincident H_2 + N_2admission charge enhancement over the diesel engine emission and burningprocess. Here study of admission of conserved H_2 + N_2 concurrently in the inlet pipe of the engine in 4% increments commencing from 4% till 16% (v/v) is done. Authors concluded that beneath performing/running particular conditions NO_x, BSN and CO emissions reduction are achieved byH_2 + N_2enrichment.Here other than controlled emissions, nitrogen emission ingradientsare also calculated and shown to be negligible.

W. B. Santoso*et al.* [3] studied the combustion properties of a hydrogen fueled one CI engine.Prior the admission of the fuel in the combustion chamber, the hydrogen entered in the intake manifold with the help of mixer.

C. Pana and C. Nutu*et al.* [4] recorded the improvement of engine efficiency and pollutant performance for truck diesel engine by using hydrogen as fuel. Results showed the refinement of the

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Thermal Power Plant Condenser Fault Diagnosis Using Coordinated Condition Monitoring Approach

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Keywords:
reliability analysis, preventive maintenance, vibration analysis, noise measurement, ultrasound

ABSTRACT

The purpose of this study is the fault diagnosis of the cooling water pump of the condenser system used in thermal power plant using coordinated condition monitoring approach. The approach is based on integrating condition monitoring techniques, viz., vibration analysis, noise analysis, and ultrasound analysis. The failure data and repair data of condenser system are collected and analyzed for reliability analysis. The reliability-based preventive maintenance time intervals are determined at different levels, such as at 90 %, 75 %, and 50 %. In addition, K-S goodness of fit test is carried out, and the best-fit distribution reliability parameters have been obtained. Such determined reliability-based time interval is counted to plan, not only maintaining/repairing work but also for replacement of the component/equipment. A case study showing reliability improvement of the condenser is reported in the present study. Through this study, the fault of the cooling water pump of the condenser system is diagnosed using coordinated condition monitoring approach. It was found that the bearing of the cooling water pump was damaged. The pump bearing was replaced during the maintenance work. The performance of the cooling water pump was analyzed and found in a normal state. It is concluded that coordinated condition monitoring approach improves the accuracy of fault detection and diagnosis.

1. INTRODUCTION

The increasing need for electricity has brought about the importance of maintaining power generating resources on a higher priority in India. Among the various resources, the thermal power plant is the primary resource of electricity generation. It is essential to maintain the thermal power plant continuously in an operating state. Unfortunately, this is not the case because the failure of equipment is inevitable even though it can be minimized by implementing suitable maintenance strategy. Garg [1] presented a methodology for analyzing the performance of industrial systems using uncertain data. The reliability, availability, and maintenance of thermal power plant have become more significant in recent years due to the growing demand for electricity from society. The optimum reliability and availability level are desirable not only to reduce the overall cost of production but also to reduce the risk of hazards [2]. The basic reliability and operational reliability are forecasted on the basis of the forecasted value of per unit contained in the model [3]. However, with thoughtful consideration for reliability, availability, and maintainability, the frequency of failures and similar consequences can be reduced considerably. Eti et al. [4] claimed that, if the attention is given during maintenance planning regarding the maintenance needs of the system, considerable savings are achieved in operational processes.

As, the thermal power plant is a complex system consisting of various subsystems connected either in series, parallel, or mixed configuration. Failure of any subsystem may cause its unavailability, which will affect the performance of the system/unit/plant. Kumar et al. [5] developed the availability simulation model for power generation system of the thermal power plant and investigated the performance of the system under realistic working conditions. Dev et al. [6] stated that criticality level decides the importance of the system as well as a choice of appropriate maintenance and repair strategy so that the reliability and availability may be maintained up to the mark. According to Carazas et al. [7], reliability can be at least estimated during the plant design stages because its availability is strongly influenced by major factors such as the ability to diagnose the cause of the failure or the availability of equipment and skilled personnel to carry out the repair procedure.

The several approaches/tools have been used by earlier researchers to evaluate the reliability and availability parameters. Garg et al. [8] solved reliability redundancy allocation problem for non-linear source constraints. In their study, the artificial bee colony is developed, and further, the solutions are obtained with improvements. In addition, Garg [9] extended their study for obtaining the optimal solution of reliability redundancy allocation problem by using penalty based cuckoo search with non-linear constraints. Kumar et al. [10] classified the major systems of the thermal power plant into five different categories viz. boiler (boiler furnace and steam drum), boiler air circulation system, water circulation system, coal supply system and power generating system (steam turbine and a generator unit). In case of such condenser subsystem, condensate leaving the condenser is supply to the

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3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during a five year 2018-19

Sr. No	Title of paper	Name of the author/s	Name of journal	Is it listed in UGC Care list/Scopus/ Web of Science/other, mention
1	Bug Triage with Data Reduction Techniques Using Instance Selection Algorithm	A. S. Chadchankar	International Journal of Research in Engineering, Science and Management	UGC Approved
2	Towards Effective Bug Triage with Software Data Reduction Techniques Using Instance Selection	A. S. Chadchankar	International Journal of Research in Engineering, Science and Management	UGC Approved
3	Wireless detection and alerting of rash driving and accidents using smart device	Amruta Patil	International Journal of Advance Research, Ideas and Innovations in Technology	UGC Approved
4	A Survey Paper on Smart Library System	Shital Bachpalle	International Journal of Innovative Research in Computer and communication Engineering	UGC Approved
5	Smart Medicine Box Using IOT	P. A. Chadchankar	International Journal of Research in Engineering, Science and Management	UGC Approved
6	Energy Efficient Virtual Machine Placement in Data Center	N. R. Shikalgar	International Journal of Computer Applications	UGC Approved
7	Intelligent Spam Detection Micro service With Server less Computing	Abhijit Karve	International Journal of Scientific Research & Engineering Trends	UGC Approved
8	Community Question-Answer System	Kirti P. Balsarf	IJIRMPS	UGC Approved
9	Secured Group Data Sharing & Access Control on Cloud	Dr. S. A. Ubale	The International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences	UGC Approved

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Bug Triage with Data Reduction Techniques Using Instance Selection Algorithm

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***Abstract*—Bugs are one of the critical issues for any software firm. Most of the software firms pay near about 45 percent value to manage these bugs. An inevitable step of managing bugs is bug triage, which involves assigning new incoming bug to an expert person who can solve this bug. To handle these bugs manually is very time consuming process. To decrease the time in manual work, text classification techniques are applied to conduct automatic bug triage. This paper address the matter of reduction for bug triage, i.e., the way to reduced scale and improve the standard of bug information. We combine instance selection method with feature selection method to reduced information scale on the bug dimension and the word dimension. Then we propose a binary classification method to predict the order of instance selection and feature selection method based on the attributes of historical bug datasets. This method of information reduction will effectively reduce the scale of dataset and improve the accuracy of bug triage technique. Then the bugs are distributed to bug solving experts.**

***Index Terms*—Bug data reduction, feature selection, instance selection, bug triage, prediction for reduction orders**

I. Introduction

Many of the software companies need to deal with large amount of software bugs daily. Software bugs are unavoidable and fixing these software bugs is a very expensive task. In fact, many of the Software organization spend lots of their resources in managing these bugs. For handling this bugs, bug repositories are used. Bugs which are reported by users are stored in the bug repository. In a bug repository, a bug is maintained as a bug report, which records the textual description of reproducing the bug and updates according to the status of bug fixing. Many open source software projects have an open bug repository that permits both users and developers to submit faults or issues in the software and suggest possible improvements. For open source large scale software projects, the number of daily bugs is so large which makes the triaging process very difficult and challenging. There are two challenges related to bug data that may affect the effective use of bug repositories in software development tasks, namely the large scale and the low quality.

When a bug report is formed, a human triage is used to provide this bug to a developer, who will try to fix these bugs. Bug assignment to the developer is also recorded in a bug report. The method of assigning a correct developer for fixing the bug is known as bug triage. Bug triage basically is one of the most time consuming step in managing of bugs in software projects. Manual bug triage is very time consuming process. In traditional bug repositories system, all the large amount of bugs were manually triaged by some specialized developers i.e human triager. Manual bug triage is expensive in time cost and low in accuracy because of large number of daily bugs. To avoid this problem existing system has proposed automatic bug triage approach [1]. This approach applies text classification techniques to predict the developer for bug report. Based on the result of text classification bug is assigned to specialized developer. To improve the result of text.

Classification techniques for bug triage, some further techniques are investigated, e.g., a tossing graph approach [10] and a collaborative filtering approach [13]. Large-scale and low-quality bug data in bug repositories block the techniques of automatic bug triage. This paper proposes data reduction technique for bug triage to reduce the size of bug dataset and improve the quality of bug dataset. Data reduction techniques is used to remove some bug reports and words which are redundant and non-informative. For that we used two methods i.e. instance selection (IS) and feature selection (FS).The order of applying instance selection and feature selection algorithms may also affect the bug triage process. So to decide order, we build a binary classifier based on the historical data set. This process gives us reduced data set that can be used for assigning developer to an incoming bug.

II. Literature Survey

Bug triage aims to assign an appropriate developer to fix anew bug, i.e., to determine who should fix a bug. Cubrani cand Murphy [5] first proposed the problem of automatic bug triage to reduce the cost of manual bug triage. They applied text classification techniques to predict related developers for new incoming bug. In their work a bug report is mapped to a document and an assigned developer is mapped to the label of the document. Then, bug triage is converted into a problem of text classification and then it is automatically solved with the help of any mature text classification techniques, for e.g., Naive Bayes [5]. Based on the results a human triager assigns new bugs by incorporating his/her expertise. Anvik and Murphy [2] extended above work to reduce the effort of bug triage by

creating development-oriented recommenders. Jeong et al. [10] found that over 37 percent of bug reports had been reassigned in manual bug triage. They introduced a graph model, which captures bug tossing history. This graph model reveals developer networks which can be used to discover team structures and to find suitable experts for a new task. Then it helps to assign developers to bug reports, correctly. To avoid low-quality bug reports in bug triage, Xuan et al. [19] trained a semi-supervised classifier by combining unlabeled bug reports with labeled ones. This new approach combines naive Bayes classifier and expectation maximization to take advantage of both labeled and unlabeled bug reports. This approach trains a classifier with a fraction of labeled bug reports. Then the approach iteratively labels numerous unlabeled bug reports and trains a new classifier with labels of all the bug reports. They also employed a weighted recommendation list to boost the performance by imposing the weights of multiple developers in training the classifier. Park et al. [13] converted bug triage into an optimization approach [13]. Large-scale and low-quality bug data in bug repositories block the techniques of automatic bug triage. Problem and propose collaborative filtering approach to reduce the bug fixing time. In a general recommendation problem, content based recommendation (CBR) is well known to suffer from over specialization recommending only the types of bugs that each developer has solved before. This problem is critical in practice, as some experienced developers could be overloaded, and this would slow the bug fixing process. Then they took two directions to address this problem: First, they reformulated the problem as an optimization problem of both accuracy and cost. Second, they adopted a content-boosted collaborative filtering (CBCF), combining an existing CBR with a collaborative filtering recommender (CF), which enhances the recommendation quality of either approach alone.

III. System Architecture

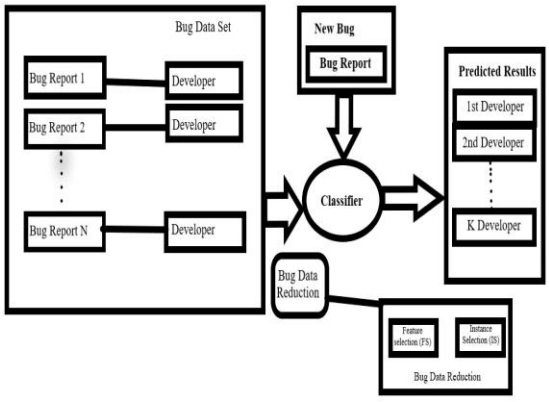

Fig. 1. System Architecture

In the data reduction, removal of bug reports and words are done which are unnecessary and noisy. Here, bug dimension and word dimension are removed simultaneously. For that in proposed system, existing techniques for instance selection (IS) and feature selection (FS) are used. Applying only instance selection gives the reduced bug reports but correctness of bug triage gets decrease. And applying only feature selection gives reduced words of bug data and correctness gets increase. Hence, proposed system combines both techniques which can increase accuracy; also reduce bug reports and words of bug reports. In proposed system, firstly, attributes from historical data set gets extracted. Then, existing algorithm of instance selection gets applied on the data set. It gives the bug reports which have more instances. On the other hand, Feature selection gets applied on the data set. In Feature selection, initially objective value of words of bug reports gets calculated. Then Feature selection selects the features with more objective value. So feature selection creates subset of important Feature. In Proposed system, we are merging the results of these two algorithms. In this merging process, important feature subset from feature selection algorithms gets applied on bug reports of instance selection algorithm. So, we get bug reports which contains important feature. Therefore finally we get reduced bug data set. Then for new bug, we create new bug report. Then Naive Bayes classifier is used and new bug reports gets compared with existing dataset, from this we get bug reports with respect to newly arrived bug. Then, we are considering this data to find top k solution to fix the bug. Therefore Ranking technique is used for that final dataset, to predict top k results. Here, Top k pruning algorithm is used. Bug Solutions will get rank, based on how many times that solution gets updated. As per ranking, we get descending order of top results, to fix bug. Finally, proposed system will predict the top k results for fixing new bug.

Algorithm-1: Data reduction based on FS→IS

The algorithm gives how to decrease the bug data based on FS→IS. Output of data reduction algorithm is a new and decreased data set. Here, two techniques i.e. Feature selection and Instance selection are applied sequentially.

1. Input: training set T with p words and q bug reports,
2. Reduction order FS→IS
3. Final number pF of words,
4. Final number qi of bug reports,

Output: reduced data set TFI for bug triage

Steps:

1. Apply FS to p words of T and calculate objective values for all the words;
2. Select the top pF words of T and generate a training set TF
3. Apply IS to qI bug reports of TF;
4. Terminate IS when the number of bug reports is equal to or less than qI and generate the final training set TFI.

IV. Proposed Work

The proposed framework is categorized into five phases.
It is listed as follows:

A. Data Set Collection

The data is collected from bug repository that contains activities, results, context and other factors. The data collection Plays a very important role to evaluate the classification. The data is stored in the form of statistical matrix where each column represents a specific variable.

1) Preprocessing methods

Data preprocessing is known as data cleaning process. It is processed by resolving missing values, smoothing the noisy data and resolving the inconsistencies. The irrelevant data is also eliminated from the dataset.

2) Feature selection and instance selection

The integration of instance selection and feature selection is employed to reduce the scale of the data. The task of instance selection is to reduce the number of instances by eliminating the noise and redundant sets. By disposing the high dimensional data, an effective bug triage is obtained and Feature selection is used for increase the accuracy.

3) Bug data reduction

The task is to reduce the level of bug data. It also used for improving the accuracy of the bug triage. Concurrently it also reduces the scale and quality of the data.

4) Performance evaluation

The algorithm is used for reduced the high dimensional spaces using some non-representative instances. The quality of bug triage can be measured with the exactness of bug triage to reduce noise and redundancy in bug data sets.

5) Keyword selection

Key words in this areas in order to optimize your site for your keyword list. It has potential to break sites revenue thus key word selection plays extremely important part in SEO process. It is a first step in implementing a SEO strategy.

1. Make the list of keywords for that purpose use keyword resources tool
2. Refine your keyword list
3. Determine how competitive your keyword phrases are.

V. Proposed Work of Project Topic

We address the problem of data reduction for bug triage, i.e., how to decrease the bug data to save the labor cost of developers and improve the quality to facilitate the process of bug triage. Data reduction for bug triage aims to build a small-scale and high-quality set of bug data by removing bug reports and words, which are redundant or non-informative. In our work, we combine techniques of instance selection and feature selection to simultaneously reduce the bug dimension and the word dimension. The reduced bug data contain little bug reports and little words than the original bug data and provide similar information over the original bug data. We evaluate the reduced bug data according to two criteria: the scale of a data set and the accuracy of bug triage. Given an instance selection algorithm and a feature selection algorithm, the order of applying these two algorithms may affect the results of bug triage. we propose a predictive model to determine the order of applying instance selection and feature selection. We refer to such resolution as prediction for reduction orders. Then, we train a binary classifier on bug data report with extracted attributes and predict the order of applying instance selection and feature selection for a new bug data set. The instance selection technique to the data set can decrease bug reports but the accuracy of bug triage may be decreased; applying the feature selection technique can reduce words in the bug data and the accuracy can be increased. Meanwhile, combining both techniques can improve the accuracy, as well as reduce bug reports and words

The primary contributions of our project are as follows:

1. We present the problem of data reduction for bug triage. This issue aims to augment the data set of bug triage in two aspects, namely
   a) To simultaneously decrease the scales of the bug dimension and the word dimension and
   b) To improve the accuracy of bug triage.
2. We propose a combination approach to addressing the issue of data reduction. This can be viewed as an application of instance selection and feature selection in bug repositories.
3. We build a binary classifier to predict the order of applying instance selection and feature selection. To our skill, the order of applying instance selection and feature selection has not been investigated in related domains.

VI. Conclusion

Bug fixing is a cultivated part of software organization. One of the major challenges in process of bug triage is to allocate a skilled developer to fix a new bug. This paper proposes the complete abstraction of an automatic bug triage approach and a framework that removes the issue of bug data to a huge extent. Feature selection and Instance selection techniques are combined to obtain better quality of bug data. Use of NB Classifier is proposed for suggesting a list of expert developers for fixing the bug.

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Towards Effective Bug Triage with Software Data Reduction Techniques Using Instance Selection

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***Abstract*—A software bug is a problem which causes a computer program or system to crash or produce invalid output or to behave unintended way. Software bugs are unavoidable. Many software companies have to face large number of software bugs. Bug Triage consumes more time for handling software bugs. It is the process of assigning a new bug to the correct potential developer. In this paper, we deal with the software bugs where large Software Company spent lot many of their cost in the same. The step of fixing the bug is called as bug triage where we correctly assign a developer to a new bug. Here, we address the problem of data reduction for bug triage. The problem of data reduction deal with how to reduce the scale and improve the quality. Hence, we combine instance selection with feature selection both simultaneously to reduce bug dimension and word dimension. We also extract the historical bug data set and predictive model to build new data set. This work provides leveraging techniques on data processing for high quality bug data in the software development.**

***Index Terms*— Bug triage, bug repositories, bug data reduction, feature selection, instance selection, machine learning techniques.**

I. Introduction

Software companies spend over 45 percent of cost infixing bugs. Due to the daily-reported bugs, a large number of new bugs are stored in bug repositories. There are two challenges related to bug data that may affect the effective use of bug repositories in software development tasks, namely the large scale and the low quality. On one hand, due to the daily-reported bugs, a large number of new bugs are stored in bug repositories. On the other hand, software techniques suffer from the low quality of bug data. Two typical characteristics of low-quality bugs are noise and redundancy. Noisy bugs may mislead related developers while redundant bugs waste the limited time of bug handling.

II. Literature Survey

To avoid the expensive cost of manual bug triage, an automatic bug triage approach was proposed, which applies text classification techniques to predict developers for bug reports. In this approach, a bug report is mapped to a document and a related developer is mapped to the label of the document. Then, bug triage is converted into a problem of text classification and is automatically solved with mature text classification techniques, e.g., Naive Bayes. Based on the results of text classification, a human triage assigns new bugs by incorporating his/her expertise. Literature survey is the most important step in software development process. Before developing the tool it is necessary to determine the time factor, economy and company strength. Once these things are satisfied, then next steps are to determine which operating system and language can be used for developing the tool. Once the programmers start building the tool the programmers need lot of external support.

III. Survey on Research Paper

In this paper [1], Semi-automated approach uses a supervised machine learning algorithm to suggest developers who may be qualified to resolve the bug. It has provided help triage to assigning bugs more efficient. If company has little knowledge then new triage can work on it. Bug triage aims to allocate an appropriate developer to fix a new bug that is to determine who should fix a bug. Author first proposes the problem of automatic bug triage to reduce the cost of manual bug triage. When a new report arrives, the classifier produced by the supervised machine learning technique offered a small number of developers suitable to resolve the report. The process only can work on two projects i.e., Mozilla and Firefox. In this Paper [2], for the text representation and processing a concept of distance graphs is proposed. This paper able to introduce the idea of distance graph representations of text statistics. Such representations preserve facts approximately the relative ordering and distance between the words inside the graphs and offer a far richer illustration in phrases of sentence shape of the underlying facts. This technique permits knowledge discovery from textual content which isn't always viable with using a natural vector area representation, because it loses an awful lot much less records approximately the ordering of the underlying phrases. The detail study of the problems of similarity search, plagiarism detection, and its applications wasn't specified. In This paper [3], it presents a dynamic test generation technique

for the domain of dynamic Web applications. The technique utilizes both combined concrete and symbolic execution and explicit-state model checking. The technique generates tests automatically, runs the tests capturing logical constraints on inputs, and minimizes the conditions on the inputs to failing tests so that the resulting bug reports are small and useful in finding and fixing the underlying faults.

It detects run time error and use HTML validate as on oracle. They perform automated analysis to minimize the size of failure inducing input. In This Paper [4], here proposed an approach where profile is created for each developer based on his previous work and is mapped to a domain mapping matrix which indicates the expertise of each developer in their corresponding area. A key collaborative hub for many software improvement projects is the bug file repository. Although its use can enhance the software program improvement process in some of methods, reports introduced to the repository want to be triaged. A triage determines if a record is meaningful. Significant reviews are then organized for integration into the assignment's improvement system. To assist triages with their work, this article offers a device getting to know method to create recommenders that assist with a ramification of selections aimed at streamlining the improvement method. This paper created using this method have a precision among 70% and ninety eight% over five open source projects. The software developer improves the process of finding the solution in number of way on particular error. It utilizes the expertise profile of developers maintained in Domain Mapping Matrix (DMM).

In This Paper [5], They Mentioned that the bug can be automatically assign to the potential developer for evaluating all the bug report carefully which saves resources used in bug triage or bug assigning task. Bug triage, deciding what to do with an incoming bug report, is taking up increasing amount of developer resources in large open-source projects. In this paper, propose to apply machine learning techniques to assist in bug triage by using text categorization to predict the developer that should work on the bug based on the bug's description. We demonstrate our approach on a collection of 15,859 bug reports from a large open-source project. Our evaluation shows that our prototype, using supervised Bayesian learning, can correctly predict 30 % of the report assignments to developers. The two problems with this approach is sometime the developer who fix the bug is not the one to whom it was officially assigned, second the algorithm does not proved to be as efficient as it was thought to be.

A. Existing System

In traditional software development, new bugs are manually triaged by an expert developer, i.e., a human triage. Due to the large number of daily bugs and the lack of expertise of all the bugs, manual bug triage is expensive in time cost and low in accuracy. Conventional software analysis is not fully suitable for the large-scale and complex data in bug repositories. The existing system working is:

In traditional software development, bugs were triaged by human, the new bugs were triages by him manually. Triaging the huge number of bugs manually takes much more time and cost for them. To overcome the problem, automatic bug triage system is introduced in the existing system. The automatic bug triage system uses the text classification technique, in which each the each reported bug is assigned to the developer. Developer is mapped to the label of the document containing bugs that are to be resolved. Bug triage is then converted into the problem of text classification and bugs are automatically solved with text classification techniques. For.eg. Naive Bayes. From the results of text classification, a bug triage assigns new bug by incorporating his/her expertise.

B. Proposed System

In this paper, we propose a predictive model to determine the order of applying instance selection and feature selection. We address the problem of data reduction for bug triage, i.e., how to reduce the bug data to save the labor cost of developers and improve the quality to facilitate the process of bug triage. We evaluate the reduced bug data according to two criteria: the scale of a data set and the accuracy of bug triage. To avoid the bias of a single algorithm, we empirically examine the results of four instance selection algorithms and four feature selection algorithms. In our work, we combine existing techniques of instance selection and feature selection to simultaneously reduce the bug dimension and the word dimension. The reduced bug data contain fewer bug reports and fewer words than the original bug data and provide similar information over the original bug data.

1. Data reduction for bug triage aims to build a small-scale and high-quality set of bug data by removing bug reports and words, which are redundant or non-informative.
2. Given an instance selection algorithm and a feature selection algorithm, the order of applying these two algorithms may affect the results of bug triage.
3. Drawn on the experiences in software metrics, we extract the attributes from historical bug data sets. Then, we train a binary classifier on bug data sets with extracted attributes and predict the order of applying instance selection and feature selection for a new bug data set.
4. In the experiments, we evaluate the data reduction for bug triage on bug reports of two large open source projects, namely Eclipse and Mozilla. Experimental results show that applying the instance selection technique to the data set can reduce bug reports but the accuracy of bug triage may be decreased; applying the feature selection technique can reduce words in the bug data and the accuracy can be increased.
5. Meanwhile, combining both techniques can increase the accuracy, as well as reduce bug reports and words. For example, when 50% bug reports and 70% words

are removed, the accuracy of Naive Bayes on Eclipse improves by 2% to 12% and the accuracy on Mozilla improves by 1% to 6%. Based on the attributes from historical bug data sets, our predictive model can provide the accuracy of 71.8% for predicting the reduction order.

C. Motivation

Real-world data always include noise and redundancy. Noisy data may mislead the data analysis techniques while redundant data may increase the cost of data processing. In bug repositories, all the bug reports are filled by developers in natural languages. The low-quality bugs accumulate in bug repositories with the growth in scale. Such large-scale and low-quality bug data may deteriorate the effectiveness of fixing bug.

D. Architecture View

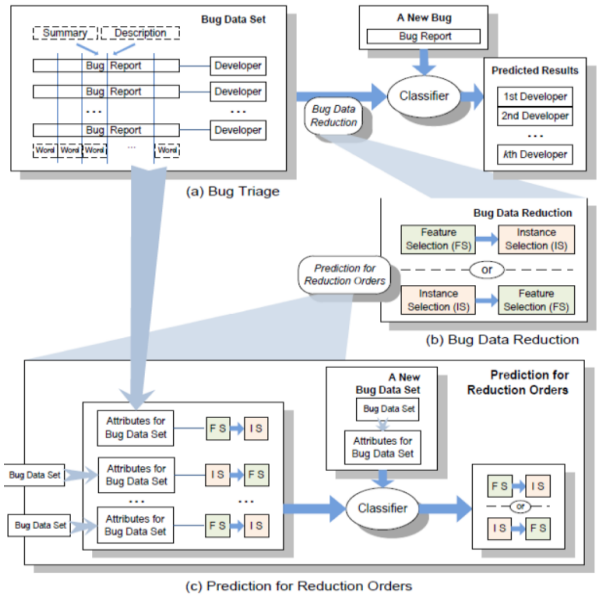

Fig. 1. Architecture view

E. System Architecture

Illustration of reducing bug data for bug triage. Sub-figure (a) presents the framework of existing work on bug triage. Before training a classifier with a bug data set, we add a phase of data reduction, in (b), which combines the techniques of instance selection and feature selection to reduce the scale of bug data. In bug data reduction, a problem is how to determine the order of two reduction techniques. In (c), based on the attributes of historical bug data sets, we propose a binary classification method to predict reduction orders.

F. Problem Definition

For reducing the affluent cost of manual bug triage we used automatic bug triage method. To build a predictive model for a new bug data sets that present the problem of data reduction for bug triage.

IV. Conclusion

This paper presented an all-inclusive survey on the data reduction technique for bug triage. The main features, the advantages and disadvantages of each technique are described. As Bug triage is a vital step of software maintenance in both labor cost and time cost. The goal is to correctly assign a developer to a new bug for further handling. Many software companies spend their most of cost in dealing with these bugs. The motivation of this work is to reduce the large scale of the training set and to remove the noisy and redundant bug reports for bug triage. As per survey, there is strong need to focus on reducing bug data set in order to have less scale of data and quality data. Propose the improved feature selection method by using kruskal model for addressing the problem of data reduction.

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Wireless detection and alerting of rash driving and accidents using smart device

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ABSTRACT

Rash driving is most dangerous for people. Risky driving primarily includes heavy driving under the power of alcohol, is the major grounds of traffic accidents throughout the world. They provide an early detection to alert the dangerous vehicle maneuvers related to rash driving. There are lots of sensors used in various techniques to detect the rash driving. For this entire detection of rash driving, we require only a smartphone. We are going to use accelerometer sensor on the smartphone. After installing a program on the mobile phone, it will compute acceleration based on sensor readings and compare them with typical unsafe driving patterns extracted from real driving tests. The application allows the owner to track their cars. This application sends a notification to owner mobile regarding the car rash driving if any. It also sends the location of the car to the owner after every ten minutes. We can change this time interval.

Keywords: *Accelerometer sensor, Rash driving Detection, Android-based smart phone with GPS.*

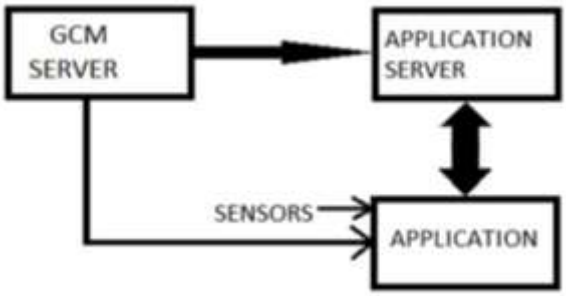
1. INTRODUCTION

In India an increasing number of vehicles on the roads, in recent past, have led to an increase in the number of road accidents. They have been alarming statistics regarding the number of road accidents. There have been alarming statistics regarding the number if accidents per day in India .A large number of people have died in India due to the increase in the number of accidents. Bad driving .lac of traffic control, and poor road conditions are the main reason for this. In this system we present a mobile phone application that uses combination if in-built sensors GPS, micro-phone and accelerometer, to detect driving behavior. This project is based in android mobile application which makes use of android sensors in order to detect rash driving patterns also accident cases. In this project we make use of latest android technologies which will directly communicate with our server and send alerts to admin user Admin can easily track the car which was added in his/her account. This system uses GCM push notification to implement alert system. Also to keep track of car it makes use of GPs system. And here are developing our own server to communicate between client and admin app.

2. LITERATURE SURVEY

Various researchers have tried to monitor driver behavior using both dedicated sensors deployed inside car, roadside and Smartphone inbuilt sensors. [1] An android based application has been developed .This application collects data from accelerometer, GPS and also record sounds with help of microphone, and then data is combined and analyzed to detect rash driving patterns. [2] In this they have proposed a innovative application using a mobile smart phone that are integrated inside an automobile to evaluate driver style. they have utilizes three-axis accelerometer of an android –based Smartphone to record and analyze various driver behavior .[3] They have developed an android application which uses data from accelerometer sensor, GPS sensor and video recording is done with help of camera to give rating to the diver. Feedback can be used to aware the driver and improve performance.

3. SYSTEM DESIGN



The application will communicate with application server using web services. The Alerts are generated on client device and they are delivered to admin device using GCM. Also application can fetch and send data to application server. The application server act as intermediate between GCM server and our application.

A. GCM server

The GCM server is mainly used to implement alerts system which is capable of sending small push messages to registered devices.It can also be used as an instant messaging mechanism.

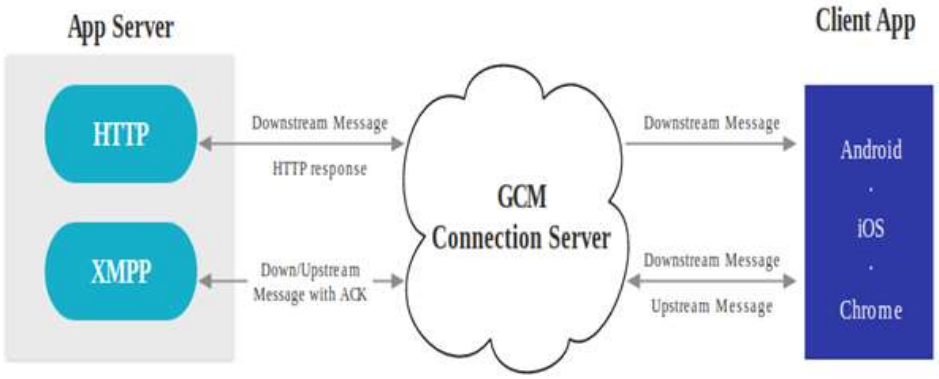
B. Application server

The application server is a standard server used to establish communication between two devices. It also used to call web services in order to fetch the current location of the mobile device.

C. Application

This module is installed on android mobile which monitors the driving patterns also send the current location of mobile to the application server.

4. GCM ARCHITECTURE



Google GCM connection servers accept downstream messages from your app server and send them to the client app. The XMPP connection server can also accept messages sent upstream from the client app and forward them to your app server.

5. CONCLUSION

Driver Behavior monitoring has evolved tremendously in recent years. Driver safety can be enhanced by monitoring driver behavior .recording their aggressive driving events and giving feedback on recorded events. Monitoring driver behavior using inbuilt sensors of Smartphone has been evolving as a new trend because of less cost and considering the fact that many people already own it. This paper surveys various methods of detecting driver behavior. It also presents the challenges faced by researchers in detecting and predicting driver behavior.

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A Survey Paper on Smart Library System

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ABSTRACT -The Smart Tracker System focuses on more simpler and advanced way to detect the particular object. This is a versatile tracker which will track the location of object of any system like library management system, shopping Malls, Medicals, Hospitals etc. In these existing systems activities like updating information of products, searching for products, updating records of new products in stock is done by manually or it's partially automated process. But due to implementation of SMART TRACKER system, existing system has become fully automated, more efficient. It has taken existing system one step forward.

For demonstration of this idea we have taken a system which is important in our day to day life that is Library management system as a case study. Drawbacks of existing library management system are as manual process of maintaining records, addition of new books, searching of books is completely changed into smart system. In smart tracker system the users are registered by the admin and when next time user comes he will only need to signing his account and search for the book. The location of the particular book will be highlighted, and book will get issued. When new books will be added to library each book will be provided with Smart Card which will have unique code, and the details of the book will be added to that particular card and while issuing book user will only need to swap the card and the book will be issued on particular user's name. If the position of the book will be misplaced the buzzer will beep. If the quantity of the book will get low that time admin will be notified.

So Smart Tracker is more efficient than existing library management system and Malls and Medicals.

KEYWORDS:-Smart card, Location Indicator, LED lights, Buzzer.

I. INTRODUCTION

In Today's world most of things we used in our day to day life are automated system. These things are not only automated but all need these things are to be operated on single click of button. Some of scenarios of these systems are shopping mall, Medical shoppy, super shoppy, Library system, hotels, Hospitals etc. In this system to search a particular object or product is very time consuming job and all other management activities of these system are either done by manually or may be its semi-automated process. What if we get location of searched product on single click?? And managing all other related things in smart way rather than manual work. So to provide a solution we have developed a versatilesmart tracker. A smart trackerwill detect the location of object and highlight that object. All management activities like keeping records of users to whom products are sold as well as quantity of products available, maintenance of products, arrangement of products, and applying dues or fine, searching product, misplaced product etc. which are carried out currently manually or partially automated are turned into a smart system using Smart Tracker. To illustrate the idea of Smart Tracker we have taken a very important thing of student's day to day life Library System. Using Smart tracker we have developed a Smart Library System**.**

Our tradition attendance monitoring system or we can say in and out entry in the library of the student and teacher staff is manual by entering details in register. To overcome this, our propose system of in and out entry of students and teacher staff will be automatic. For this we are going to use RFID card and UHF reader to detect the RFID tag on the identity card. RFID tag will be read by the UHF reader at the entrance of the library and same for the exit.

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II. LITERATURE SURVEY

1. DESIGN & IMPLEMENTATION OF RFID BASED BOOK TRACKING SYSTEM IN LIBRARY
Abstract: The prime hurdle of user is to find exact title of book in library. The basic reason is wide spread of books or sometimes disordered arrangement in library. To avoid such issue, RFID based book tracking system is designed using PIC microcontroller. In this paper, near field RFID tags are used to locate exact position of books. The implemented system displayed the result on GLCD screen by tracing the shortest path. The main contribution of this work is that, the system is handy, easy to carry, highly accurate and reasonably low priced.

2.SMART LIBRARY MANAGEMENT SYSTEM USING RFID
Abstract: Applicability of Radio Frequency Identification (RFID) system which is a new generation of Auto Identification and Data collection technology in a future Smart Library Management System is presented in this paper. It helps to automate business processes and allows identification of large number of tagged objects like books, using radio waves. In existing system barcode and token card system were used. Barcodes have no read/write capabilities; they do not contain any added information such as expiry date etc. and it needs line of sight, less security and it also can easily damage. By using token card system, they are very labour intensive and work process for the librarians was more. By considering the above demerits in the existing systems, the proposed Smart RFID system, which is a wireless non-contact system that uses radio frequency to transfer data from a tag attached to an object, for the purpose of automatic identification and tracking. RFID doesn't need the line of sight, it remove manual book keeping of records, improved utilization of resources like manpower, infrastructure etc. Also less time consumption as line of sight and manual interactions are not needed for RFID Tag reading. RFID based Library Management system would help to allow fast transaction flow for the library and will prove immediate and long term benefits to library in traceability and security.

3.IDENTIFICATION OF EMPLOYEES USING RFID IN IE-NTUA7666
Abstract :During the last decade with the rapid increase in indoor wireless communications, location-aware services have received a great deal of attention for commercial, public-safety, and a military application, the greatest challenge associated with indoor positioning methods is moving object data and identification. Mobility tracking and localization are multifaceted problems, which have been studied for a long time in different contexts. Many potential applications in the domain of WSNs require such capabilities. The mobility tracking needs inherent in many surveillance, security and logistic applications. This paper presents the identification of employees in National Technical University in Athens (IE-NTUA), when the employees access to a certain area of the building (enters and leaves to/from the college), Radio Frequency Identification (RFID) applied for identification by offering special badges containing RFIDtags.

4. ONLINE PEOPLE TRACKING AND IDENTIFICATION WITH RFID AND KINECT7666
Abstract : We introduce a novel, accurate and practical system for real-time people tracking and identification. We used a Kinect V2 sensor for tracking that generates a body skeleton for up to six people in the view. We perform identification using both Kinect and passive RFID, by first measuring the velocity vector of person's skeleton and of their RFID tag using the position of the RFID reader antennas as reference points and then finding the best match between skeletons and tags. We introduce a method for synchronizing Kinect data, which is captured regularly, with irregular or missing RFID data readouts. Our experiments show centimetre-level people tracking resolution with 80% average identification accuracy for up to six people in indoor environments, which meets the needs of many applications. Our system can preserve user privacy and work with different lighting.

III.EXISTING SYSTEM APPROACH

In existing system updating records of products as well as users, and other activities such as searching for product, arrangement of products is to be done manually. In existing system, In case of library management system user does his entry in register of records, he searches for particular book he wishes to issue, he goes to librarian and issues the book, and entry of the book is done in register. In case of mall the customers. In short in existing system all the

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process for issuing products requires human efforts. It consumes too much of time as well as it is not safe as anyone can steal the product in case of mall and books in case of library. That means from security point of view existing system is not that useful as well as safe

IV.PROPOSED SYSTEM APPROACH

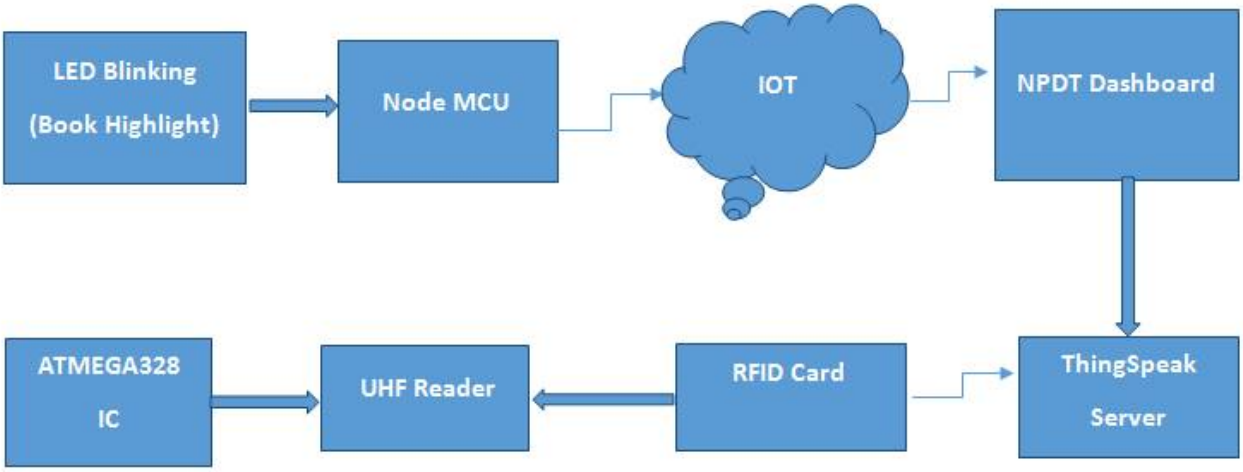

Fig.1 Block Diagram of Proposed System

To make Smart library management system by providing Smart card for each user which will store the details about book and register student/staff and highlight the location of book on particular shelf on which that book is located. It will also notify the admin about the quantity of the book and if the position of the book will be misplaced. Automated I-card should be provided to students and faculty and it has unique ID, entry will be stored on think speak sever.

V. CONCLUSION

Smart Tracker: Track The World makes user as a smart user by providing smart card which stores book related details .
This System provide exact location of search book.
Details of issued book is stored within a card. Librarian will get that details on a single click.

ACKNOWLEDGMENT

This work is supported in a Smart Library Management system of any state and in any college India. Authors are thankful to Faculty of Engineering and Technology, Savitribai Phule Pune University, Pune for providing the facility to carry out the research work.

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Smart Medicine Box Using IOT

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***Abstract*—Wrong medication may leads to serious diseases which stays for lifetime due to which people have to take the medicines for a lifetime. To avoid such problems' medication or reminder system is needed which will help people to take medicines on time by reminding them. Our smart medicine box will remind people to take medicines on time using alarm, light, and message for old age people or who are suffering with disease like amnesia. Our smart medicine box is based on the concept IOT (Internet of things).This paper describe the overview of smart medicine box which act as assistive device to avoid non-compliance of medicine. It consists of a hardware box of compartments for a week (per day 3 time*7 days of week=21) as well as android application for informing the family member and respective doctor whether patient take medicines or not.**

***Index Terms*— smart medicine box, old age patient, real time clock, IR sensor**

I. Introduction

This project is based on the IOT (Internet of things). Our medicine box is targeted on user who regularly take drugs or vitamin supplements. The smart medicine box is built for the seven days and four different time in a day, so the user can manage to take medicine easily. The provided medicine box is programmable so user can set the time when to take the medicines, name of medicine, and quantity of medicine. After installing medicines into smart medicine box, the box will remind the user through the sound, light and message. Our smart medicine box confirm that user take the medicine or not. If user miss to take medicine the medicine box send acknowledgement message to the respective doctor or family member. Smart medicine box provide flexibility to the user to take the medicines. If your paper is intended for a conference, please contact your conference editor concerning acceptable word processor formats for your particular conference.

II. Literature Survey

In conclusion, this device can help and give advantage to the all human beings which are faced regular health problems. The main motive for this innovation is to monitor the medicine intake for intrinsic patients. It is practical in the morning and evening as well as used at night. This device is controlled by using sensor and timer system, so the patients does not need to remember the schedule of medicines. This system is a very good to apply in the hospital (where nurses are not provided) as well as homes because it can do the job of nurse which making the patients more comfortable to stay at the homes. Present time will be saved in RTC module. So at the time of taking medicine system generate Notification sound and display the Bright light in certain pill boxes. So, patient can know the specific box from which he has to take out medicines.

Many peoples are forget to take medicines on time. The model of smart medical box is a single board computer based device for peoples who suffer with short term memory loss. It is an alarm based device that helps in reminding patient about their medicine. The use of Internet of Things (IOT) concept and health sensing technology make diagnosis easier and convenient for the doctors as well as the patients [1]. This paper presents overview of a device for monitoring non-compliance of medicine by providing a single platform and a closed loop connection between patients, doctors, and pharmacies. This work gives insight into mechanical design, system architecture and design of android application, and integrating the physical system to cloud. The architecture used is secure one as it uses end-to-end encryption for sending sensor data [2]. This device helps in maintaining one-time medication to the patients, and help increasing the life expectancy.

III. System Architecture

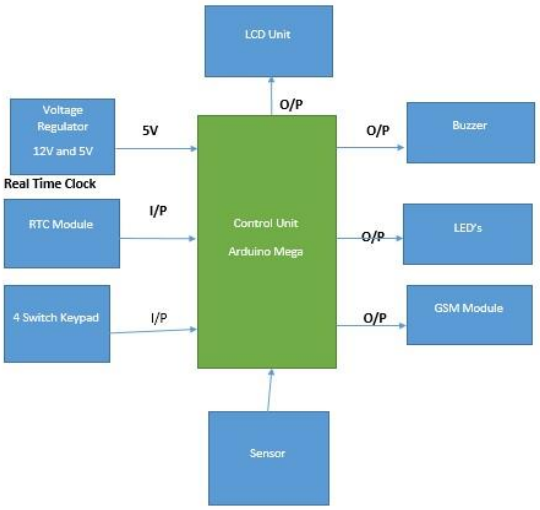

Fig. 1. Smart Medicine Box Architecture

Generally, there are some regular patients who take medicines thrice a day for them it will be helpful to use this smart medication system. Now a day's most of people are not having time from their busy schedule for that purpose, we have developed this system for reminding people about their medicine. In this we have installed the battery for providing Power Supply, and the working flow of the system is like at first the user has to set the timer for taking medicines as per the guidelines by a doctor (twice or thrice a day) and for that there is a keypad. There are 21 Sub-Compartment in the system as 7*3=21 (7 for week days*3 per day). And in each compartment we have installed sensors and small LED's. And at the particular time set by the user the system will start buzzer sound to remind that patient to take the medicines and it will also indicate from which compartment the medicines should be taken by the LED. And the later system checks whether a patient has taken the medicines or not with the help of sensors. If the patient doesn't take medicine system will inform this to the siblings and the doctor of that patient using GSM Module by sending SMS.

IV. Components

1) Voltage Regulator

A voltage regulator is an electricity regulation device designed to automatically convert voltage into a lower, usually direct current, and constant voltage. The term may refer to a voltage regulator integrated circuit, which is often found in computers and other electronic devices that are plugged directly into an alternating current wall outlet but require only a small DC voltage. The term can also refer to voltage regulation or power module, such as cell phone and laptop chargers. Some regulators do not increase or decrease a device's voltage, but just ensure output value.

2) Real time clock

A real-time clock is an artillery powered clock that is included in a microchip unit in a computer. This microchip is usually separate from the microprocessor and is often referred to simply as "the CMOS". A small memory on this microchip stores system description including current time values stored by the real-time clock. The time values are for the years, month, date, hours, minutes, and seconds.

3) GSM Module

A GSM module is a circuit that will be used to create communication between a mobile device or a computing machine and a GSM system. .These modules consists of a GSM module used by a power supply and communication interfaces for computer. A GSM modem can be a dedicated modem device with a USB it can be a mobile phones that provide GSM modem efficiency.

4) LED

IT stands for "Light-Emitting Diode" An LED is an electronic device that emits light when an electrical current is passed through it. Early LEDs produced only red light, but Recent LEDs can produce several different colours, including red, green, and blue (RGB) light. Latest advances in LED technology have made it possible for LEDs to produce white lights as well.

5) Buzzer

A buzzer is an electrical device that is used to make a sound. For example, to attract user's attention.

6) IR Sensor

An infrared sensor is an electronic device which emits in order to sense some object of the surroundings. An IR sensor can measure the heat of an object as well as detects the motions. These types of sensors measures only infrared lights, rather than emitting it that is called as a passive Infrared sensor.

7) Ultrasonic

An ultrasonic sensor is a device that measures the distance to an object using ultrasonic sound waves. An ultrasonic sensor uses a transducer to transmits and receive ultrasonic pulses that relay back data about an object's proximity. High-frequency sound waves reflect from boundaries to produce unique echo patterns.

8) Proximity

A proximity sensor is an electronic sensor that can detect the presence of objects within its zone without any physical contact. In order to sense thing, the proximity sensor emits a beam of electromagnetic radiation, usually in the form of infrared light, and senses the reflection in order to determine the thing's proximity or space from the sensor.

9) Hard ware requirement

1. RTC(Real time clock)
2. LCD 16x2
3. LED's
4. Keypad
5. Buzzer
6. GSM Module
7. IR Sensor's
8. Register
9. Capacitor

10) Software requirement

1. Operating System:- Windows 7 or more
2. Technology:- C/C++
3. IDE:- Arduino IDE

V. Conclusion

The goal of our project is to offer an assistive device to the people who take regular pills. This device helps the people to take the pills as per the medicine course properly. This gives easy connectivity between doctor and patient.

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Energy Efficient Virtual Machine Placement in Data Center

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ABSTRACT
The rising trend of e-commerce and cloud computing are just two reasons for the growing demand for Data Centers (DCs). DCs are among the largest global energy consumers in relation to the total global energy consumption. The rising numbers of DCs are an increasingly negative impact on the environment. This may be caused by the DCs themselves as well as by the power generation that is needed by the DCs. Thus, the utilization of servers in most data centers can be improved by adding virtualization and selecting the most suitable host for each Virtual Machine (VM). The problem of VM placement is an optimization problem to achieve multiple goals. To overcome those problems we design the allocator in order to accept as many VM requests as possible, taking into account the power consumption of the network devices. It can be covered through various approaches such as allocator policy (Best Fit/Worst Fit), allocation strategy (Single/Multi-objective optimization), and network resources. Each approach aims to simultaneously reduce power consumption, maximize resource utilization and avoid traffic congestion.

Keywords
Virtual Machine[VM], Data Center [DC], IT Resource Allocators [ITRA], First Fit[FT], Best Fit[BF], Worst Fit[WF], Multi-Objective Dynamic Allocator[MODA], Fuzzy Logic Controller[FLC], Analytic IT Resource Allocators[A-ITRA], Fuzzy IT Resource Allocators[F-ITRA].

1. INTRODUCTION
Cloud computing is a technology that enables computing resources, software, or data to deliver on demand services over the Internet. These resources have become cheaper, more powerful and more ubiquitously available than ever before. The cloud computing stack consists of three types of cloud service models: Infrastructure, Platform and Software, which are built upon the Hardware layer. Since provisioning Virtual Machines (VMs) is fundamental to provide infrastructure services, one can say that virtualization is the key concept of cloud computing. According to Mike Adams, director of product marketing at VMware1, "Virtualization software makes it possible to run multiple operating systems and multiple applications on the same server at the same time. It enables businesses to reduce IT costs while increasing the efficiency, utilization and flexibility of their existing computer hardware." However, VMs need to be adequately placed to fulfill performance goals, to optimize network flows, and to reduce CPU, storage and energy costs. VM placement optimization processes may be traffic-aware, energy-aware, application-aware, network topology-aware, data-aware, or a combination of these.

In recent years, the problem of allocating VMs to suitable Physical Machines (PMs) has been studied for efficiency and quality purposes. On the provider side, these solutions map VMs to PMs to optimize server efficiency, allowing some servers to hibernate or shut down depending on load conditions. On the consumer side, these solutions maximize Quality of Service (QoS) and Quality of Experience (QoE).

2. LITERATURE SURVEY
2.1 Green Power Management with Dynamic Resource Allocation for Cloud Virtual Machines
With the development of electronics in governments and business, the implementations of these services are increasing demand for servers. Continued expansion of servers represents our need for more space, power, air conditioning, network, human resources and other infrastructure. Regardless of how powerful servers now become, we do not make good use of all resources and strive for the waste.
Our approach is to overcome problem of load balancing for virtual machine management on cloud. It includes three main phrases:
(1) Supporting green power mechanism,
(2) Implementing virtual machine resource monitor onto Ganglia Software. [1].

2.2 Using the Multiple Knapsack Problem to Model the Problem of Virtual Machine Allocation in Cloud Computing:

Cloud computing is a new computing paradigm which has the provision of computational resources like services accessed over the internet. In this paradigm, computing resources are pooled and allocated according to customer demand. The growing demand for this new type of service has led to increased use of energy on the part of service providers, due to the need to maintain the computing infrastructure, becoming one of the leading providers of cost factors.

In this context, solutions have been trying whatever possible to meet the customer's requirements for resources consuming minimum power required. Thus, this work consists of an improvement, using the modeling of the multiple knapsack problems, with a mechanism for allocating resources Allocator addresses the issue of energy saving. Furthermore, a comparative analysis of the proposed solution with the original mechanism to evaluate the performance modification is made. Another improvement would be to use Ganglia software a formula defining how good the allocation of a VM is on a server regarding energy consumption and power balancing on the servers together.

2.3 Multi-objective virtual machine placement in virtualized data centre environments:

Server consolidation using virtualization technology has become increasingly important for improving data center efficiency. It enables one physical server to host multiple independent virtual machines (VMs), and the transparent movement of workloads from one server to another. Fine-grained virtual machine resource allocation and reallocation are possible in order to meet the performance targets of applications running on virtual machines. On the other hand, these capabilities create demands on system management, especially for large-scale data centers.

Our approach is to manage the mappings of workloads to VMs and VMs to physical resources. The focus is on the VM placement problem which is posed as a multi-objective optimization problem of simultaneously minimizing total resource wastage, power consumption and thermal dissipation costs. An improved genetic algorithm with fuzzy multi-objective evaluation is proposed for efficiently searching the large solution space and conveniently combining possibly conflicting objectives.

A simulation-based evaluation using power-consumption demonstrates the good performance, scalability and robustness. Our approach can seek and find solutions that exhibit good balance among the conflicting objectives while others cannot. [3]

2.4 Energy efficient vm scheduling for cloud data canters: Exact allocation and migration algorithms:

For energy, efficient scheduling of virtual machines (VMs) in cloud data centers. Modeling of energy aware allocation and consolidation to minimize overall energy consumption leads us to the combination of an optimal allocation algorithm with a consolidation algorithm relying on migration of VMs at service departures. The optimal allocation problem with a minimum power consumption objective. It is compared with an energy aware best fit algorithm. The exact migration algorithm results from a linear and integer formulation of VM migration to adapt placement when resources are released.

The proposed migration is general and goes beyond the current state of the art by minimizing both the number of migrations needed for consolidation and energy consumption in a single algorithm with a set of valid inequalities and conditions. Experimental results show the benefits of combining the allocation and migration algorithms and demonstrate their ability to achieve significant energy savings while maintaining feasible convergence times when compared with the best fit heuristic. [4]

2.5 Virtual machine resource allocation in cloud computing via multi-agent fuzzy control:

Dynamic resource (re)-allocation for virtual machines in cloud computing is important to guarantee application performance and to reduce operating costs. The problem is to find an adequate trade-off between these two conflicting goals.

Our approach is presented to support the Virtual Machine Monitor in performing resource allocation of VMs running on a physical machine of a cloud provider by expressing the two objectives in a utility function and optimizing this function using fuzzy control.

To potentially work for an increased number of virtual machines, a multiagent fuzzy controller is realized where each agent optimizes its own local utility function. The multi-agent fuzzy controller is empirically compared to a centralized fuzzy controller and an adaptive optimal control approach. Experimental results show. The effectiveness of the multi-agent fuzzy controller in finding an adequate trade-off between performance and cost. [5].

2.6 A power efficient genetic algorithm for resource allocation in cloud computing data centers in Cloud Networking:

One of the main challenges in cloud computing is to increase the availability of computational resources, while minimizing system power consumption and operational expenses. This article introduces a power efficient resource allocation algorithm for tasks in cloud computing data centers. The developed approach is based on genetic algorithms which ensure performance and scalability to millions of tasks.

Resource allocation is performed taking into account computational and networking requirements of tasks and optimizes task completion time and data center power consumption. The evaluation results, obtained using a dedicated open source genetic multi-objective framework called jMetal show that the developed approach is able to perform the static allocation of a large number of independent tasks on homogeneous single-core servers within the same data center with a quadratic time complexity. [6].

3. PROPOSED SYSTEM APPROACH

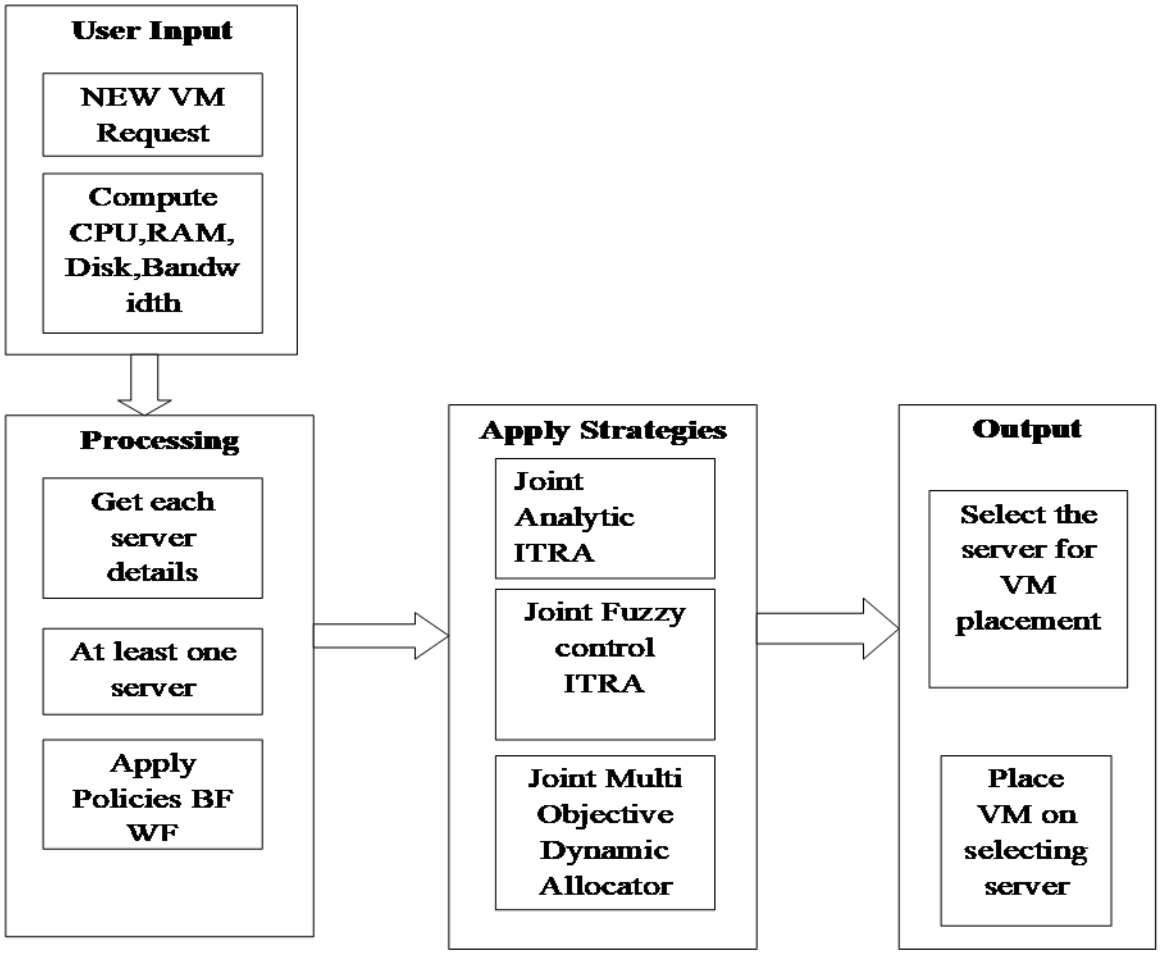

Fig 1 Praposed System

These proposed systems develop to accept as many VM requests as possible; at the same time the network power consumption have to reduce. Each VM request is characterized by four parameters throughput of CPU, RAM, disk and bandwidth.
The server selection includes the following steps:

1) Master node identify server list, i.e., the set of servers with enough IT resources to satisfy the request:

I) Master Node rejected the user request, when list is empty,
ii) Otherwise, go to next step.

2) Master Node has to choose the policy between following:
I) Multi Resource Best Fit (BF):
Multi Resource Best Fit selecting the server that has the least resources availability strongly consolidates the system resource utilization;

ii) Multi Resource Worst Fit (WF):
Multi Resource Worst Fit selects the server having the highest resources availability, so as to balance the load among all the available servers.

3) Master Node chooses the best server according to one of the possible following strategies:

I) Analytic ITRA (joint):

Analytic ITRA (A-ITRA) computes for each candidate Server the A-ITRA Availability Index (IA) that takes into Account the availability of IT resources.

II) Fuzzy ITRA (joint):

Fuzzy logic provides a way of dealing with imprecision and nonlinearity in complex control situations. Inputs are passed to an "Interface Engine" where human or experienced-based rules are applied to produce output.

III) Multi-Objective Dynamic Allocator MODA) (joint):

MODA allocates VMs using a technique based on the multi-objective optimization: available resources are the objectives that should be optimized all together.
MODA computes in multiple steps the allocation procedure; When a new VM should be allocated, MODA creates a list of Servers able to fit the request. MODA considers CPUs, RAMs, DISKs and PCs, and it associate the minimum-cost path with each server during the server selection phase.
To perform the allocation of VMs:

a) For both computational and network requirements. The joint allocation strategies consider at the same time.

b) Instead, disjoint strategies split the allocation procedure in two different steps:

i) If server is not available only the computational requirements rejecting the request then select the server where to allocate the VM.

ii) If path is not available then only the bandwidth requirement will be rejecting the request. Then find the minimum-cost path connecting the selected server to the gateway.

4) If server is not available only the computational requirements rejecting the request; Allocation procedure is to choose the server where to allocate the VM evaluating once server get choose then VM get placed.

Proposed System is recommended best strategy for VM allocation approach with simultaneously reduce power consumption, maximize resource utilization and avoid traffic congestion. The outcome of this proposed system is to follow the best strategy for VM allocation considering with minimum power consumption.

4. CONCLUSION

In this paper allocator accept as many VM requests as possible, reducing at the same time the network power consumption. To satisfy the request allocators apply policy between Multi Resource Best Fit (BF) and Multi Resource Worst Fit (WF) to balance the load among all the available servers. To select the best server according to one of the possible strategies disjoint or joint Analytic ITRA, disjoint or joint Fuzzy ITRA, disjoint or joint Multi-Objective Dynamic Allocator MODA) for VM allocation approach with simultaneously reduce power consumption, maximize resource utilization and avoid traffic congestion. The outcome is to follow the best strategy for VM allocation considering with minimum power consumption.

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Intelligent Spam Detection Micro Service with Server Less Computing

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***Abstract*—Today for personal and business purpose most of the users uses email as one of the most important source for communication. The use of email is increasing day by day without being affected by alternative ways of communication such as social networking sites, SMS, mobile applications, electronic messages. As frauds using email classification is increasing due to extensive use of emails, it becomes very important issue to classify mails as fraud or normal mails. The Intelligent Spam Detection System (ISDS) provide automatic way to classify emails as SPAM i.e. fraud mail and HAM i.e. normal mail using multiple machine learning algorithms.**

***Index Terms*—intelligent spam detection system, machine learning, naive bayes algorithm, dataset.**

I. Introduction

The internet has become necessary part of our lives and email is key application for communication. User spends much time on classifying the mails, so it is necessary to classify them automatically. And due to increase in users of email system the frauds are also increasing. To reduce these frauds we are proposing the system called as Intelligent Spam Detection System. This ISDS classifies the incoming emails as spam or ham (normal mails) and will also enable the user to categorize them in one or more categories such as personal, official, social, promotions and many more user defined categories. To classify these incoming mails, Intelligent Spam Detection System uses different machine learning algorithm. Many machine learning algorithms such as Naive Bayes, Logistic Regression, Random Forest, Support Vector Machine etc. are studied in-order to classify the emails and the most accurate one is selected for classification. The proposed system differs from Google or Yahoo as it allows the user to categorize the mails as per their need, for example he/she can categorize the mails as personal or official separately. This system provides webpage as well as android application which are accessible anywhere and anytime. ISDS is a micro-service so can access any mail from any service provider for example Google, Yahoo. Rediff etc. The dataset from University of California is used in order to train the machine learning model. Instead of considering mail word by word it considers whole message and classifies the mail as spam or ham. In our proposed system we are using Amazon Web Services for computation purpose.

II. Literature Survey

A. Tokenization

The term tokenization comes under the Preprocessing of the data. The divination of text into some meaningful pieces is nothing but tokenization. It is nothing but act of breaking a sentence into pieces such as meaningful symbols phrases etc. These set of pieces is called as tokens. These set of tokens are considered as a set of input for the next processing of the data. The next processing is nothing but parsing and text mining.

Tokenization is dependent on simple heuristics in order to separate tokens using following steps.

1. In tokenization words are separated by blank spaces, or punctuation marks or line breaks.
2. Blank Spaces or punctuation marks are optional. It depends on the on the need of the system whether to use them or not.
3. Each and every character in a string is a part of a token. The tokens are nothing but alpha characters, alpha numeric characters or numeric characters only.

B. Lemmatization

Lemmatization is nothing but the grouping together of different forms of the same words. Lemmatization is one of the main part of the natural language processing and natural language understanding. Lemmatization is related to stemming. Basically the goal of both the process is same that is reducing inflectional forms of each word to its base. The main difference between stemming and lemmatization is that stemming cuts the beginning or end of the word and taking back to its root form, while lemmatization considers the morphological analysis of the words.

C. Removal of Stop Words

In data pre-processing it is necessary to convert the data to something which can be understood by the computer. In NLP the useless words are called as stop words. The stop words are such as “the”, “a”, “an”, “in”. The process of removing these types of words is called as removal of stop words.

III. Proposed System

The proposed system consists of webpage or android application in which the user can login with different email

service providers. The incoming mail will be first classified as spam or ham mail. Spam mail is nothing but the fraud mail which is consists of viruses, unwanted messages or phishing links. Spamming is one of the major cyber-attack which can fool the people by sending fake emails and can try to access the confidential information from user or target. And Ham mail is a normal mail. This system also provides the option to user to categorize the incoming mails in different categories as per their need such as official, personal and many more user defined categories. The machine leaning plays important role to classify all the emails. Many machine learning algorithms are developed to classify the mails more accurately. The algorithms like Naive Bayes, Logistic regression, Support vector machine, Random Forest, Neural Network are trained to get more accurate results and algorithm is selected by comparing their accuracy with one another.

A. *Architecture to classify emails automatically*

For the purpose of classification of email, it is needed to have the dataset which contains spam and ham contents. In our system we are using the dataset designed by University of California, which contains two attributes where first is label in which whether the message is spam or ham is mentioned and another field contains actual message. The architecture is consist of three levels where first level is Data Pre-processing, second level is Learning level and third level is Data Classification.

1) Data Pre-processing

After collecting data for classification, the next task is cleansing data which is also called as Data Pre-processing. In this level data cleansing is done in which data is converted into tokens and unwanted words or stop words get eliminated. It results in reducing the amount of data which need to be analyzed. After removal of stop words Stemming and lemmatization takes place on tokens to convert them into their original form.

2) Learning level

In the second level ie the learning level first feature sets are created and extracted. Features are nothing but the signs that represent a measurement of some aspect of given user's behavior. To classify the emails more efficiently extraction of features is essential to make the task of learning more exact. Selection of features is done to enhance the accuracy and efficiency of the classifier.

3) Classifier level

In this level the classifier is developed. This developed classifier is saved for further classification. Finally, at the classification level this developed classifier classifies all the incoming mail into specific classes such as legitimate or spam.

4) Naive bayes classifier

Naive Bayes classifier is a classifier with strong assumption between independent features which works using Bayes theorem. It is a method of text categorization. In order to identify spam and for categorization it uses bag of word feature. This algorithm uses Bayes theorem for determining probabilities. While using Bayes theorem for spam classification is gives probability of certain message is spam or ham based on words in the message or its titles. The main aim of learning is to reduce false positive.

5) Bayes theorem

Let's suppose suspected message contains "replica" word.

The formula can be given as:

$P(S|W) = P(W|S)*P(S) / P(W|S)*P(S) + P(W|H)$

Where,

$P(S|W)$ = the probability that message is spam, and replica word is present in it.

$P(S)$ = It is total probability that the message is spam.

$P(W|S)$ = It is probability that replica appears in message.

$P(H)$ = It is total probability that message is Ham.

$P(W|H)$ = It is probability that the word replica is in ham message.

For getting output, process is divided into three phases:

1. Preprocessing
2. Feature selection
3. Naive Bayes classifier
4. Head and shoulders shots of authors that appear at the end of our papers.

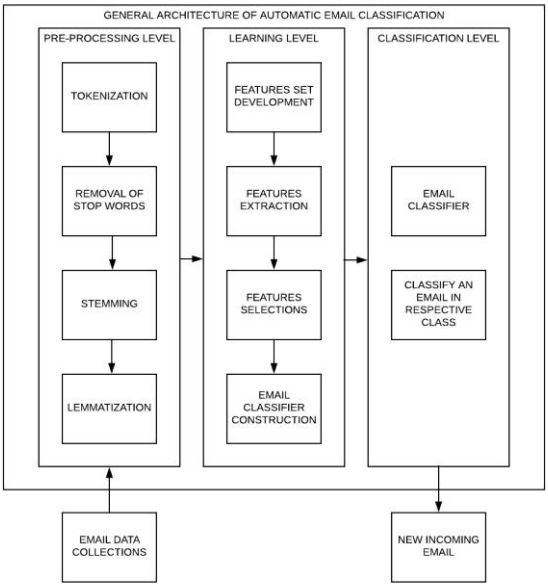

Fig. 1. General architecture of email classification

IV. Advantages

1) No maintenance

As service provider is going to take care of it.

2) More generic

The scope of system is not limited to Google or yahoo, it is more general.

3) Light weight micro service

The system is lightweight and can be use anywhere as it is platform independent.

4) More accurate

As many different algorithms are trained and more accurate is chosen so it gives more accurate classification result.

V. Future Scope of the System

1) *Real time learning*
   Most of the researches focus on classifying historical or past dataset which does not include real time data. So real time learning is a challenge for experts. However it is very difficult to work on real-time data.
2) *Dynamic updating*
   Designing a system which can add or remove the features without redesigning or rebuilding the whole model to work with advance features in spam classification is also a challenge.
3) *Image and text based classification*
   In current system the classification is done only on text message however one can update the system by adding new feature of image based classification so as to improve the performance of classification system.
4) *Language based classification*
   In this system the classification is taking place for mails only in English language but there is no classifier which can classify mails in different languages so one can add feature of classification which can work on multiple languages.

VI. Conclusion

Five major application areas of email classification, namely, spam, phishing, spam and phishing, multi-folder categorization, and other related application areas, were analytically summarized.

VII. Acknowledgement

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Community Question-Answer System

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Abstract: **Web based CQA system come in to the focus when user searches question. Any web based user searches on the internet online QA system provides the answers using matching keywords and the matching concept. Because of that sometimes user do not get the proper answers of asked question. For that research on the QA system is going on which work on the social-based Q&A systems that rely on an asker's social friends to provide answers. However, this method cannot find answers for a question which does not belonging to the asker's interests. So, considering this problem, the new system iASK is proposed. This system improves the response latency and answer quality in both the social domain and global domain. It uses neural network based friend ranking method to identify answerer candidates by considering social closeness and Q&A activities. In existing works, we used weak tie assisted social based potential answerer location algorithm and an interest coefficient based uncategorized question forwarding algorithm. In this paper we are also having forum support when user do not get proper answer, and so user takes part in online discussion. Sometime user enters wrong question at time posting, so using the fuzzy dictionary we correct the words which help system to work properly. The main aim is to remove the word mismatch problem using the Lesk algorithm.**

Keywords: **CQA, Fuzzy spell check API, fine grained and QA forwarding, online forum.**

Introduction:

Community Question Answering (CQA) on web forums such as Quora, Yahoo answer and Stack Overflow are more popularity Forums which become less extreme only indirectly via the community. In which user can post question and answers freely. This has been seen on two sides a) a user can freely ask any question and can expect a best variety of answers based on the answers rating. b) It takes efforts to go through the provided answers of varying quality and to make sense of them. It is not a better option for a popular question to have hundreds of answers, and it is very time-consuming for a user to inspect them all.

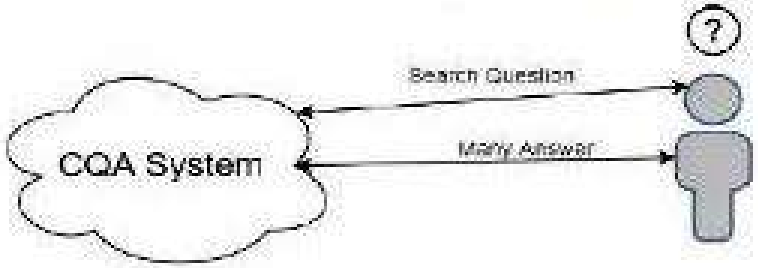

Fig. introduction of CQA

Which have been used more options support to this all problem. The main approach is to propose a system which may help to automate the process of finding best answers of newly posed questions. So going forward to this paper, it introduced rank based QA pair and online forum support technique. The Community Question and Answer (CQA) system have large number of users where they have different types of questions. User asks questions in his community and rates the answers so that answerer can act like expert. User acknowledges the answerer when he gets best answer by rating same answer and likewise high rated answers act like experts and also helps to and near to best answer. It improves response rate and response delay of answer quality in both the social community and global community. Since, the interest coefficient based uncategorized QA forwarding algorithm and weak tie assisted social based potential answerer location algorithm.

Related work:-

In this system we are developing centralize QA system that are solving the query that faced by the user. For that we are doing some background study with related research papers. H. Shen [15] proposed distributed QA system has considering the feedback with closeness in addition to interest similarity in question forwarder selection in order to increase the likelihood of the receiver to answer/forward the question. P. Gun Woo [54] has work on the rank model with representation of the answer model with the help of ranking algorithm, Influence Rank, which is basis of analyzing relationship in terms of users' activities and their mutual trusts. Y. Soung Woung in Quora system that considered as the vote system that could be found out the best answer with best voting [5] [14]. The work done with share system with the help of weak and strong ties that are consider to transfer your question with different community [8]. A semi-supervised learning method to identify high quality content and users in CQA that dramatically reduces the required amount of manually labeled data for training, while outperforming state-of-the-art supervised methods [16] [3]. In this work, design a truthful mechanism for expert finding by a chain of individuals from the initiator to the expert, where each intermediate user makes a decision using only local information. Our mechanism also takes the users' self -interest into account with a well-designed payment strategy [21]. A propagation based social-aware replication framework using a hybrid edge cloud

Secured Group Data Sharing & Access Control on Cloud

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***Abstract*: Group data sharing in cloud environments has become a hot topic in recent decades. With the popularity of cloud computing, how to achieve secure and efficient data sharing in cloud environments is an urgent problem to be solved. In addition, how to achieve both anonymity and traceability is also a challenge in the cloud for data sharing. This paper focuses on enabling data sharing and storage for the same group in the cloud with high security and efficiency in an anonymous manner. By leveraging the key agreement and the group signature, a novel traceable group data sharing scheme is proposed to support anonymous multiple users in public clouds.**

On the one hand, group members can communicate anonymously with respect to the group signature, and the real identities of members can be traced if necessary. On the other hand, a common conference key is derived based on the key agreement to enable group members to share and store their data securely. Note that a symmetric balanced incomplete block design is utilized for key generation, which substantially reduces the burden on members to derive a common conference key. Both theoretical and experimental analyses demonstrate that the proposed scheme is secure and efficient for group data sharing in cloud computing.

***Keywords*: RSA (Rivest-Shamir-Adleman), ECC (Elliptic-curve-cryptography), BDH (Bilinear Diffie-Hellman) Deduplication, key Aggregation or conjunctive keyword search, explicite updation.**

Introduction:

Compared with the traditional information sharing and communication technology, cloud computing has attracted the interests of most researchers because of its low energy consumption and resource sharing characteristics. Cloud computing can not only provide users with apparently limitless computing resources but also provide users with apparently limitless storage resources. Cloud storage is one of the most important services in cloud computing, Namely Iaas, Passs, Saas etc.These models on which cloud computing is based.

SaaS(Software as a Service): The term "Software as a Service" (SaaS) is considered to be part of the nomenclature of cloud computing SaaS is closely related to the ASP (application service provider) and on demand computing software delivery models. The hosted application management model of SaaS is similar to ASP: the provider hosts the customer's software and delivers it to approved end users over the internet. In the software on demand SaaS model, the provider gives customers network-based access to a single copy of an application that the provider created specifically for SaaS distribution. The application's source code is the same for all customers and when new features are functionalities are rolled out, they are rolled out to all customers. Depending upon the service level agreement (SLA), the customer's data for each model may be stored locally, in the cloud or both locally and in the cloud. Example of SaaS is Google Apps, Email, face book.

Pass(Platform as a Service):Platform as a service (PaaS) is a cloud computing model in which a third-party provider delivers hardware and software tools usually those needed for application development to users over the internet. A Pass provider hosts the hardware and software on its own infrastructure. As a result, Pass frees users from having to install in-house hardware and software to develop or run a new application. Hosted applications environment for building and deploying cloud applications.-Amazon EC2, Microsoft Azure

Iaas(Infrastructure As A Service): Infrastructure as a service (IaaS) is a form of cloud computing that provides virtualized computing resources over the internet. IaaS is one of the three main categories of cloud computing services, alongside software as a service (SaaS) and platform as a service (Pass).In an IaaS model, a cloud provider hosts the infrastructure components traditionally present in an on-premises data center, including servers, storage and networking hardware, as well as the virtualization or hypervisor layer.

Amazon Simple Storage Service (S3): Companies today need the ability to simply and securely collect, store, and analyze their data at a massive scale. Amazon S3 is object storage built to store and retrieve any amount of data from anywhere – web sites and mobile apps, corporate applications, and data from IoT sensors or devices. It is designed to deliver 99.999999999% durability, and stores data for millions of applications used by market leaders in every industry. S3 provides comprehensive security and compliance capabilities that meet even the most stringent regulatory requirements. It gives customers flexibility in the way they manage data for cost optimization, access control, and compliance. S3 provides query-in-place functionality, allowing you to run powerful analytics directly on your data at rest in S3. And Amazon S3 is the most supported cloud storage service available, with integration from the largest community of third-party solutions, systems integrator partners, and other AWS services.

Group data sharing has many practical applications, such as electronic health networks , wireless body area networks , and electronic literature in libraries. There are two ways to share data in cloud storage. The first is a one-to-many pattern, which refers to the scenario where one client authorizes access to his/her data for many clients [8]. The second is a many-to-many pattern, which refers

to a situation in which many clients in the same group authorize access to their data for many clients at the same time. Consider the following real-life scenario: in a research group at a scientific research institution, each member wants to share their results and discoveries with their team members. In this case, members on the same team are able to access all of the team's results (e.g., innovative ideas, research results, and experimental data). However, the maintenance and challenges caused by the local storage increase the difficulty and workload of information sharing in the group. Outsourcing data or time-consuming computational workloads to the cloud solves the problems of maintenance and challenges caused by local storage and reduces the redundancy of data information, which reduces the burden on enterprises, academic institutions or even individuals. However, due to the unreliability of the cloud, the outsourced data are prone to be leaked and tampered with. In many cases, users have only relatively low control in the cloud service and cannot guarantee the security of the stored data. In addition, in some cases, the user would prefer to anonymously achieve data sharing in the cloud.

Related work:

In order to overcome the above vulnerabilities, an effective access control for cloud computing was proposed by which attempts to protect the outsourced data from attackers and revoked malicious users. With respect to the key policy attribute-based encryption (KA-ABE) technique, it provides effective access control with fine grainedness, scalability and data confidentiality simultaneously. Specifically, each data file is encrypted with a random key chosen by the user. Subsequently, the random key will be encrypted by the KA-ABE. An access structure and secret key maintained by the group manager are distributed to authorized users, which can be used to decrypt the outsourced data. Note that if and only if the attribute of the data satisfies the access structure can the outsourced data be decrypted. However, the scheme is designed only for a general one-to-many communication system, which makes it inapplicable for the many-to-many pattern. On the other hand, a number of studies have been proposed to protect users' privacy [15]. In [16], a traceable privacy preserving communication scheme was proposed for vehicle to- grid networks in smart grids. However, this scheme is only suitable for two entities (i.e., vehicles and the central aggregator or the local aggregator); thus, it cannot be applied in cloud environments for the purpose of group data sharing. An example of group data sharing in cloud computing was proposed In [17], a secure scheme was proposed to support anonymous data sharing in cloud computing. Both anonymity and traceability are well supported by employing the group signature technique. In addition, efficient user changes are achieved by taking advantage of the dynamic broadcast encryption. However, this scheme suffers from the collusion attack performed by the cloud server and the revoked malicious user. In addition, compared with the broadcast encryption, we believe that the decentralized model is more suitable for data sharing in the cloud. Specifically, in [18], the key management system falls into two categories. The first is key distribution, in which the generation and distribution of the key is completely accomplished by a centralized controller. The second is key agreement, where all the members in the group fairly contribute, negotiate and determine a common conference key together. In the cloud environment, key distribution may be vulnerable since the centralized controller is the bottleneck of the system. Moreover, the large amount of computation and distribution for a common conference key may cause a large burden for the centralized controller. Many researchers have devoted themselves to the design of data sharing schemes in the cloud. But the problems existing in the above research still need to be resolved. In this paper, we focus on constructing an efficient and secure data sharing scheme that can support anonymous and traceable group data sharing in cloud computing. Note that the collusion attack is considered and addressed. Moreover, many-to-many group data sharing is supported in the proposed scheme.

Organization: The remainder of this paper is organized as follows. Section 2 presents some preliminaries in cryptographic and combinatorial mathematics. Section 3 describes the system model and our design goals. Section 4 presents the proposed scheme in detail. Section 5 and Section 6 perform the security and performance analyses, respectively. Section 7 concludes this paper and our work.

Motivation:

Our main motivation is to securely save the data on the cloud and access it securely. In this project authentication services and efficient access control are achieved with respect to the group signature technique. We main motive is to secure and fault-tolerant key agreement for group data sharing in a cloud storage scheme.

System Architecture: The architecture of our cloud computing scheme is considered by combining with a concrete example: users with similar interests and specialists in the related areas hope to store and share their works in the cloud (e.g., results and discoveries). The system model contains three entities: cloud, group manager (e.g., an active specialist) and group members(e.g., bidder).

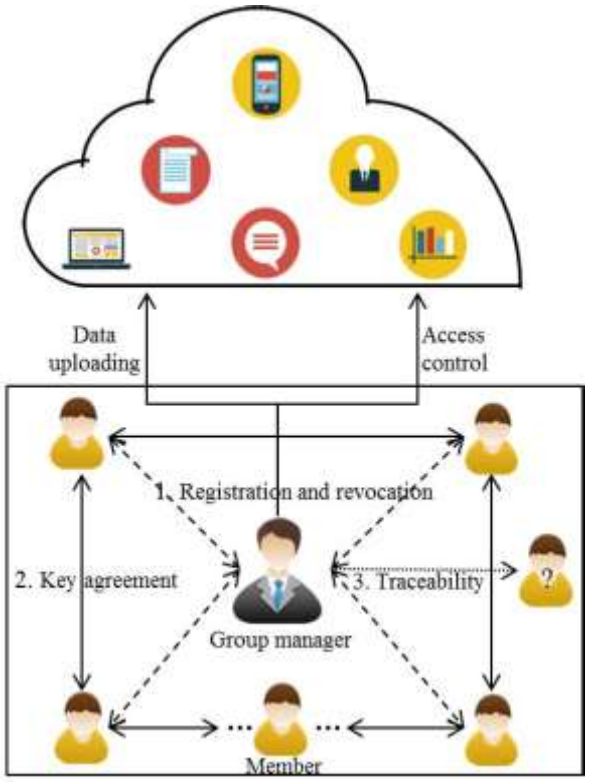

Fig 1. System Overview

1) Cloud: provides users with seemingly unlimited storage services. In addition to providing efficient and convenient storage services for users, the cloud can also provide data sharing services. However, the cloud has the characteristic of honest but curious [11], [24]. In other words, the cloud will not deliberately delete or modify the uploaded data of users, but it will be curious to understand the contents of the stored data and the user's identity. The cloud is a semi-trusted party in our scheme.

2) Group Manager: is responsible for generating system parameters, managing group members (i.e., uploading members' encrypted data, authorizing group members, revealing the real identity of a member) and for the fault tolerance detection. The group manager in our scheme is a fully trusted third party to both the cloud and group members.

3) Members: are composed of a series of users based on the SBIBD communication model. In our scheme, members are people with the same interests (e.g., bidder, doctors, and businessmen) and they want to share data in the cloud. The most worrying problem when users store data in the cloud server is the confidentiality of the outsourced data. In our system, users of the same group conduct a key agreement based on the SBIBD structure. Subsequently, a common conference key can be used to encrypt the data that

Will be uploaded to the cloud to ensure the confidentiality of the outsourced data. Attackers or the semi-trusted cloud server cannot learn any content of the outsourced data without the common conference key. In addition, anonymity is also a concern for users. Our scheme uses a technique called group signatures, which allows users in the same group to anonymously share data in the cloud.

Objective:

1) Dynamic Change: The intractable problem when sharing data in the cloud using the group manner is to ensure the security of the data when group members dynamically join and quit the group. A scheme that can support users' dynamic changes should guarantee that new users can access the previous data, whereas revoked users will not be able to obtain data in the cloud.

2) Data Confidentiality: In the cloud storage, data confidentiality requires that the outsourced data are invisible to the cloud server and to illegal users. Taking advantage of the key agreement, a common conference key can be derived among all the group members such that they can encrypt their data prior to uploading it to the cloud. Moreover, with respect to the SBIBD, the communication and computation complexities for generating the common conference key are relatively small compared.

3) Anonymity: Personal data are expected to be shared in the cloud without making the real identity public. Otherwise, few users are willing to share their information. Therefore, anonymity should be supported in the proposed scheme.

4) Traceability: Although data are shared anonymously in the cloud, a well-designed scheme should be able to locate the owner of the controversial data in disputes.

Conclusion:

In this paper we are implementing the secure group data sharing System. We developed the diffident technique to use the system to share secure data on the cloud. Its removing the redundancy of the data and the improving the performance of the system .and We analyze in this system about secured data transition through the cloud and We can store data on a cloud with Owen access control and share this data into a group.

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INDEX

3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during a five year 2018-19				
Sr. No.	**Title of Paper**	**Name of the author/s**	**Name of Journal**	**Is it listed in UGC Care list/Scopus/Web of Science/other, mention**
1.	Speaker identification of whispering speech: an investigation on selected timbrel features and KNN distance measures	Dr. S. D. Shirbahadurkar	International Journal of Speech Technology	Web of Science and Scopus
2.	Speaker Identification of Whispering Sound using Selected Audio Descriptors	Dr. S. D. Shirbahadurkar	International Journal of Applied Engineering Research	UGC care list
3.	Speaker Identification with Whispered Speech: Different Methods and Use of Timbral Audio Descriptors	Dr. S. D. Shirbahadurkar	ARPN Journal of Engineering and Applied Sciences	Scopus
4.	Automatic Speech Recognition of Noisy Hindi Words Using Linear Discriminant Analysis	Dr. S. D. Shirbahadurkar	Jour of Adv Research in Dynamical & Control Systems	Scopus
5.	An efficient method for early stage detection of diabetic retinopathy	Dr. S. D. Shirbahadurkar	International Journal of Engineering & Technology	Scopus
6.	Fuzzy Whale Fusion for MRI image fusion	Dr. S. D. Shirbahadurkar	International Journal of Engineering, Applied and Management Sciences Paradigms	Other
7.	Facial Features Based Emotion Recognition	Dr. Arun Gaikwad	IOSR Journal of Engineering	UGC Care List
8.	Smart Local Bus Transportation System based on IoT	Smita A. Bhosale	International Journal Of Research In Electronics And Computer Engineering	Other

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Speaker identification of whispering speech: an investigation on selected timbrel features and KNN distance measures

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Abstract
Speaker identification from the whispered speech is of great importance in the field of forensic science as well as in many other applications. Whispered speech shows many changes in the characteristics to its neutral counterpart. Hence the task of identification becomes difficult. This paper presents the use of only well-performing timbrel features selected by Hybrid selection method and effect of distance measures used in KNN classifier on the identification accuracy. The results using timbrel features are compared with MFCC features; the accuracy with the former is observed higher. KNN classifier with most probable distance function suitable for a whispered database like Euclidean and City-block are also compared. The combination of timbrel features and KNN classifiers with city block distance function have reported the highest identification accuracy.

Keywords Speaker identification · Timbrel audio descriptors · Whispering speech · Distance function · K-Nearest neighbor · Confusion matrix

1 Introduction

Speaker analysis includes applications like speaker identification/verification, gender and age group labeling, accent/dialect, etc. In any text-independent analysis of speaker, it is required to characterize the speaker's voice by some unique parameters called features. The normal voiced phonation is considered as the important source for characterization or modeling of a speaker; as a rich resonance information is available in a high-energy periodic signal. However, while whispering, an air turbulence without vibrating vocal chord changes the general condition of phonation (Beigi 2012). This is the most probable difficulty among all other reasons discussed in the literature for whispering speaker identification. Significant changes found between whisper and neutral speech in terms of periodicity, formants' location, and spectral slope boundaries of vowel regions. However, it is proved that vocal effort while whisper does not disturb unvoiced consonants as much (Fan and Hansen 2011). Hence, unvoiced part in neutral and whispered speech plays major role to identify speaker in neutral-whisper scenario. Secondly, speakers found it difficult to continue whispering for long duration (beyond 30 s). It is proved by good identification results for (i) long and whispered, and (ii) short and normal (non-whispered) compared to (iii) short and whispered (Foulkes and Sóskuthy 2017). So longer whisper (2–3 s) will consist of partial voiced phonation, thus increasing speaker identification accuracy.

The success of speaker identification in the whispered speech depends upon following factors mainly:

Quality of whispered recording (Signal to noise ratio) A SNR of 10 dB or higher is recommended for better speaker identification (Audio Engineering Society 2010). Hence it is required to record whisper in a noise-free environment. Whispered and neutral samples used in CHAIN database are above 15 dB. Also the duration of recording is 2–3 s for better identification results.
Selection of features MFCC is widely used in speaker identification experiment when database consists of neutral utterances. Here we have used limited well-perform-

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Speaker Identification of Whispering Sound using Selected Audio Descriptors

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Abstract

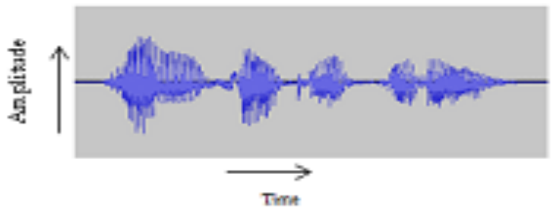
Whispering speech mode is adapted by speakers for any one of the reasons like secrecy of confidential data, avoiding being overheard in public places or hiding the identity intentionally. As acoustic properties of whispered speech are drastically changed compared to neutral speech; it makes difficult to identify the speaker from a whispered sound. This task requires the perceptual analysis of the whispering sound signal as do the humans. Many researchers presented various techniques for speaker identification of whispering sound but have some limitations. This paper describes the efficient method of identifying the speaker within the whispered speech using timbrel features which haven't been used so far in the whispered case. They are suitable here due to their multidimensional nature and perceptual ability. But all the timbrel audio descriptors are not well-performing for the whispered data. Hence, by using Hybrid Selection method, the most suitable timbrel audio features are selected and used. Timbrel features show an increase in the identification accuracy as 10.9 % compared to traditional MFCC features. A database containing 650 utterances (whispered and neutral) of 35 speakers is created and used for the experiments. K-means classifier with a random choice of the centroid is used for classification.

Keywords: Musical Information Retrieval (MIR); Speaker Identification; Timbre; Whispered Speech

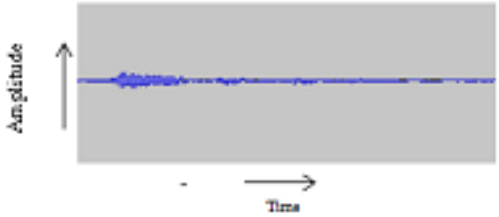
INTRODUCTION

The speaker identification mainly includes three steps as (i) Feature extraction: Compact and the unique speaker-specific information is extracted in this process. (ii) Training: It uses the classifier to model the speaker from its multiple voice samples to consolidate all the intra-speaker variations. (iii) Testing: In this step, the speaker query is tested for speaker identification. It is compared with the speaker models generated from the database while training. Speech modes are classified as shouted, loud, neutral, soft, and whispered with decreasing order of energy level. The spectral slope is found as the minimum for whispered speech with respect to neutral speech. This indicates that energy contents in case of whispered and soft speech are concentrated in higher frequency [1]. Widely used Mel Frequency Cepstral Coefficient (MFCC) works on a Mel scale, failing to capture some details in the high-frequency range. Hence the selection of feature suitable to the type of database is an essential task in speaker identification.Whispered speech properties drastically change compared to neutral speech due to variation in vocal efforts. While speaking in neutral mode, the vocal folds vibrate periodically. However, during a whispering speech, a continuous air stream without vibration and periodicity is propagated. The major changes in characteristics of whispered speech compared to neutral speech are summarized as: Loss of periodic excitation or harmonic structure, shifting of formants to the higher frequencies, flatter spectral slope and lower energy. Hence the performance of the system (neutral train - neutral test) with traditional MFCC features and Gaussian mixture model for classification (MFCC-GMM) degrades considerably when tested with whispered samples of utterances.

The signal-to-noise ratio (SNR) is a very important factor for achieving better speaker identification. The whisper speech can be classified qualitatively as high and low-performance whisper based on SNR and high-performance whisper reported better identification [1]-[2]. Figure 1(a) and (b) show the time domain waveforms of speech signals of neutral and whispered speech. The low magnitude and low SNR are major difficulties in whispers. When the whispered database files used in our experiment are investigated for the contrast ratios, they are found in the range 7 to 9dB. Hence, it needs to be processed for noise reduction.



(a) Neutral voice sample



(b) Whispered voice sample

Figure 1. Time domain waveforms of neutral and whispered voice

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SPEAKER IDENTIFICATION WITH WHISPERED SPEECH: DIFFERENT METHODS AND USE OF TIMBRAL AUDIO DESCRIPTORS

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ABSTRACT

Whispered mode of speech is preferred by people for secret conversations or avoiding to be overheard. E.g. sharing information like credit card number, bank account number or to hide the identity intentionally. This study focuses on various methods and techniques used for enhancing the accuracy in whispered speaker identification. MFCC is a most popular feature in the speaker identification experiment as the Mel scale is closer to the human hearing pattern. But the experiments with different feature-classifier combinations are tried by different researchers. However, considering the changes in vocal efforts while whispering, use of linear scale in feature extraction, separation of voiced and unvoiced part of utterances, whispered island detection, feature transformation from neutral to whisper, whispered to neutral efforts, contributes a lot. MIR toolbox has large number of feature sets suitable for representing the speaker-specific information efficiently, which may further increase the identification rate, especially with the timbral features.

Keywords: whispered, speaker identification, feature extraction, classifier, MIR, timbre.

1. INTRODUCTION

Among all biometric access applications, person identification based on his voice, is most simple and reliable means, relieving from the fear of forgetting or stealing passwords. Speaker recognition applications can be designed in two ways: text- dependent and text independent recognition [1]. In the former method, the same text (like customer number, passwords etc.) is used for training and testing phase both. Whereas in the later, speaker recognition is independent of the text spoken by speakers. The speaker identification may be defined as the process of finding the particular speaker from the stored speakers' database. It is used to confirm a speaker's identity and give access to confidential information areas. Whereas in the speaker verification process, identity claim of a speaker is accepted or rejected, which is mainly used for forensic applications [1].

All speaker recognition systems contain two main processes: Training (feature extraction and modelling) and Testing (feature matching and Identify)[2]. For both the phases, the feature extraction step is essential.

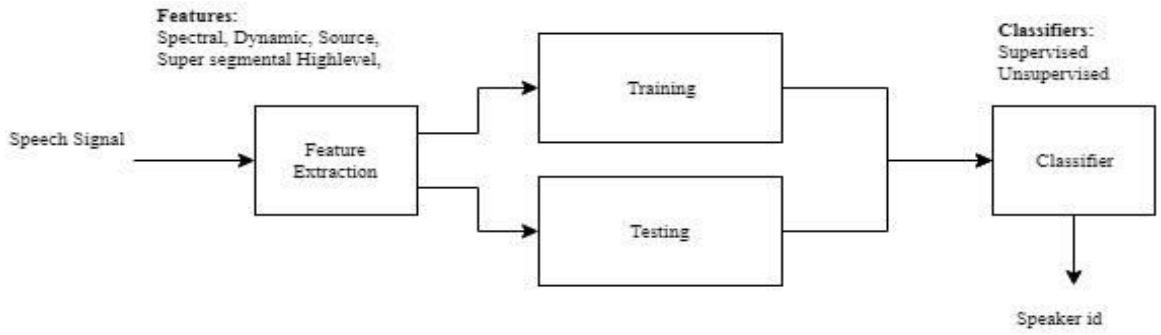

Figure-1. General speaker identification system.

The features represent the speech waveform by some kind of compact representation as, even for small duration speech, data is quite large. Hence, while selecting any type of the features, reduced data size while retaining speaker specific discriminative information is the major attribute. In training process, after feature extraction from multiple samples of the same speaker, the speaker model is generated which is stored in the database. The most widely used features are Mel-frequency cepstrum coefficients (MFCC), linear prediction coding (LPC), linear predictive cepstral coefficients (LPCC), Perceptual linear predictive coefficients (PLPC) etc. In the testing mode, speaker features are compared with the database of speaker models and identification results are declared (Figure-2).

Three types of models are adapted for classification: Stochastic model which includes e.g. Gaussian mixture model (GMM), Hidden Markov model (HMM)), Deterministic model (e.g. Support Vector Machines (SVM)),Template based model which are e.g. Dynamic Time Warping (DTW), Neural Networks (NN), Vector Quantization (VQ). Each of the model has its own pros and cons, hence selection of any classifier and features or even combination of feature- classifier depends

Automatic Speech Recognition of Noisy Hindi Words Using Linear Discriminant Analysis

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Abstract--- Speech recognition system is one of the significant, but challenging systems in computer-human interaction. Recognizing Indian languages, especially Hindi, find many practical difficulties due to its wide grammatical and phonetic features from English. This paper focuses on Hindi speech recognition system for which Cepstra features and linear discriminant analysis (LDA) model are proposed for feature analysis and recognition. For isolated Hindi word audio signals, experimental investigations are carried out. The performances of the LDA methods are analysed. The system has been trained with audio samples of single female. Total 100 words are uttered for 12 times by the speaker at different time to give variations in sample. For each isolated, accuracy has been calculated. It was found that majority of the words are recognized below 50 word, as no of words increased accuracy decrease. This work may provide a baseline for further research on Hindi Automatic Speech Recognition.

Keywords--- LDA, Cepstra, Hindi, Speech, Recognition.

I. Introduction

Technological progress in input mode of various automatic systems such as speech, hand gesture is becoming more and more user friendly. Speech is the input mode which can be used by expert as well as layman of that system. Therefore, most of the researchers are working on Automatic Speech Recognition (ASR) for the last five decades.

For real time application, Robust ASR is attracting researchers to improve results in noisy environment. Systems with Successful ASR respond like human as human voice instructed them. With the rapid growth in technology and easily availability, users of system are not limited to specific language group.

Speech operated systems have been developed [1-5] in various languages such as English, French, Japanese, Chinese and Arabic. The development in research on ASR has enabled the non-familiar users of systems to interact with machines [30]; Work addressed in [6] initiated this work for blind and disabled users of system.

For people from different states of India, who haven't had sound English education, Hindi is one of the communication languages in India. The work presented in [8] [36] used HMM, has gained attention from the Indian researchers interested in the Hindi speech recognition. 80-90 million people of India use Tamil, Bengali and Marathi languages for communication. This is just 20% of the Hindi speakers. Tamil speech recognition using HMM [15] [46] gains considerable attention in addition with trigram language model, dynamic time wrapping [44] and decision tree model in Bengali [20].

In Odiya recognition [22] [39] HMM models were used and found to be suitable and Punjabi languages [12]. Gujarati [31] and Malayalam [34] [35] languages models claimed good results using ANN models. The work addressed in papers [33] [36] [34] Malayalam speech recognition systems have also exploited HMM models and DWT models. ANN models [18] [32] LVQ [19] has also been found suitable for Assamese language.

For Bengali and Marathi speech recognition, Decision tree model [37] and DTW [21] are found to be promising, respectively.

The work addressed in [60] and [29] have used HTK and ANN respectively for Telugu speech recognition. DWT and SVM models are used in [26][27] [28] for Kannada speech recognition systems whereas Urdu speech recognition system used Sphinx decoder in research works [24] [25].

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Research paper

An efficient method for early stage detection of diabetic retinopathy

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Abstract

Diabetic Retinopathy (DR) is one of the leading causes of blindness. The early detection and treatment of DR is significant to save the human vision. The presence of microaneurysms (MAs) is the first sign of the disease. The correct identification of MAs is an essential for finding of DR at the early stages. In this paper, we propose a three phase system for efficient recognition of MAs. The tentative MA lesions are recovered from the fundus image in the first stage. To accurately classify an extracted candidate region into MA or non-MA, the second stage prepares an attribute vector for each tentative MA lesion based on shape, intensity and statistical properties. The third stage is a classification step to classify as MAs and Non-MAs for early stage detection of DR. We present a holoentropy enabled decision tree classifier which combines entropy and total correlation. The best feature for decision tree is selected based on holoentropy to enhance the correctness of the classification. The implemented system is experimented using fundus image database DIARETDB1. The proposed method achieved an overall accuracy of 97.67%. The proposed system has detected the MAs with higher performance using simple features and holoentropy based decision tree classifier. The proposed system is suitable for early stage detection of DR through the accurate identification of MAs.

Keywords: *Fundus Image; Features; Entropy; Classification; Diabetic Retinopathy.*

1. Introduction

Diabetic Retinopathy (DR) is one of the major sources of the sightlessness which is caused because of prolonged diabetes mellitus. It is estimated that, nearly 220 million people are affected by diabetes [1]. However, proper screenings, early detection and appropriate treatment limit the visual impairments [2]. Different abnormalities such as microaneurysms (MA), internal bleeding, hard exudates and cotton wools appear as clinical symptoms of non-proliferative DR (NPDR) as shown in Fig. 1. During the screening process, fundus images of the retina are taken by fundus camera for the purpose of detection of DR. The presence of MAs in the retinal fundus images is an early indicator for detection of DR. The automated segmentation and identification of MAs can aid in screening programs for DR diagnosis. Thus, an automated DR screening system is essential to reduce the time required by specialists for manual intervention. This will enhance the resourcefulness of the eye care delivery even at the underserved places [3]. The accurate recognition of MAs from the retinal fundus images is necessary to detect DR at early stage.

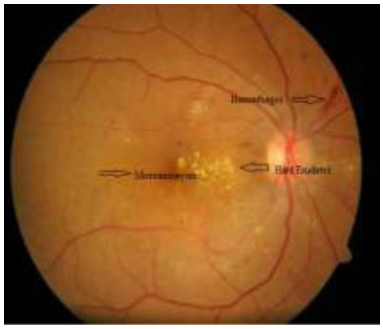

Fig. 1: NPDR Fundus Image.

The accurate detection of MAs is a difficult task because of the variations in the appearance of MAs in the retinal images [4]. A novel region-growing based on gradient values has been introduced by Fleming et al. [5]. The paraboloid parameters were used to compute the features which are used in the classification phase. Zhang et al. [6] applied multiple Gaussian filters at multiple scales. They computed the maximum response to generate a probability map of the tentative occurrence of MAs. The initial set of MA candidates was produced using thresholding of probability map. The final classification was performed using a rule-based classifier using 30 features. Sánchez et al. [7] used a mixture model-based clustering technique to detect the MA candidate regions. The technique fits three normal distribution histograms corresponding to foreground, background and outliers. The foreground histogram pixels were considered as the set of MA candidate regions. The logistic regression was used to classify each MA region. The tenta-

Fuzzy Whale Fusion for MRI image fusion

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Abstract—Medical treatment and diagnosis require information from several modalities of images like MRI, CT and so on. The image fusion schemes provide combined information of these images. This paper proposes a hybrid algorithm using fuzzy concept and novel P-Whale algorithm, called Fuzzy Whale Fusion, for the fusion of MRI multimodal images. Two multimodal images from MRI (T1, T1C, T2, FLAIR) are considered as the source images, which are fed as inputs to the wavelet transform. The proposed P-Whale approach combines Whale Optimization Algorithm (WOA) and Particle Swarm Optimization (PSO) for the effective selection of whale fusion factors. The performance of Fuzzy Whale Fusion model is compared with the existing strategies using Mutual Information (MI), Peak Signal-to-Noise Ratio (PSNR), and Root Mean Squared Error (RMSE), as the evaluation metrics.
Keywords –Image fusion, Optimization, Wavelet Transform, Fuzzy fusion factor.

I. INTRODUCTION

Medical image fusion [8, 9] is an emerging field that produces a single image having relevant information of original images by incorporating information taken from two or more images of varying modality without generating any noise or artefact [10]. The fused image can describe the view much better than any individual image.MRI is used commonly for the recognition of tumor region and bone structure, in medical image processing and analysis [2]. MRI images have different modalities that contain complementary information. This complementary information is transformed into a single image for quick and accurate diagnosis.

The fusion techniques for MRI images mostly deal with wavelet transformation. In wavelet transform technique [7], the image is decomposed into a sequence of sub-band images having varying resolutions, directional characteristics, and frequencies.This paper aims to design a fusion method for MRI multimodal images using a hybrid technique, Fuzzy Whale Fusion, obtained by the combined effect of fuzzy weighted fusion formula and P-Whale optimizer. Fusion is performed by applying the two input images to the wavelet transform that provides four different bands for each image.

A weighted function, which combines fuzzy and whale fusion factors are used to obtain the wavelet coefficients. The fuzzy fusion factor is computed based on the distance estimated using a membership function. For the optimal selection of whale fusion factor, a novel algorithm, named P-Whale is utilized, where the integration of PSO modifies WOA. The selection of whale fusion factor depends on a newly formulated fitness function of the P-Whale algorithm. Once the coefficients are evaluated, the inverse transform can create the resulting fused image.

II. PROPOSED ALGORITHM

Numerous research contributions have been made in theliterature to deal with the issue in the fusion of MRI multimodal images. In [1], a pre-processing MRI and Positron Emission Tomography (PET) has been adopted to enhance the quality of the images. However, this method failed to consider multi-modality medical images. On the otherhand,theGeneticAlgorithm(GA)[2]has known for its efficiency and supports multi-objective. In spite of that no guarantee of finding global maxima and it takes time for convergence. In [3] multispectral MRI image has been developed to enhance the visualization of pathological and anatomical information. Again, it requires consistent scanner performanceandahighdegree of qualitycontrol. In addition, the multimodal fusion approach [4] exploits the correlation between multiple features from different modalities. Nevertheless, the synchronization between features is more complex due to their different modalities and non-linearity. In [5], the multimodal medical image fusion increases the visualqualityoftheimagesanddecreases theimageartifacts and noise. However, it suffers from less spatial resolution.

The principal component averaging based on DWT usedin [6] reduces complexity in images, but the covariance matrix is difficult to be evaluated accurately. Moreover, the PSO and GA used in [15] [16] [17] provides easy handling of an unknown characteristic of the system and good convergence rate. Conversely, it suffers from limited real-time performance and high dependence on algorithm parameters. Some of the challenges noticed in image fusion, are as follows,

The selection of fusion rule is very crucial.

Even though image fusion at pixel-level is simple and easy for the implementation, it results in information loss and blurring of edges that degrades the quality of fused image.

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Facial Features Based Emotion Recognition

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Abstract: Non verbal communication has its own benefits and importance from the perspective of many applications. Facial expressions are one of the significant forms of non verbal communication amongst other major non verbal communication indicators like brain signals, body posture, gesture and actions etc. used prominently to convey the emotional state/ mood of a person. Emotion recognition serve wide range of applications like healthcare, patient pain monitoring, driver alert system, cognitive assessment, e- learning, animation etc. Emotion classifier is modeled around the features fed to the model in the form of feature vector i.e. set of prominent features/attributes. The correctness in extracting the facial features has tremendous impact on classifier accuracy. The paper presents the study of various popular and unique techniques used so far for facial feature extraction and emotion classification. Various techniques of facial expressions analysis are compared over the performance parameters like recognition accuracy, number of emotions addressed, Database used for experimentation, classifier used etc.

Keywords: - Facial features, Feature vector, Emotion classification, non verbal communication, Feature extraction

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I. INTRODUCTION

Emotions are integral part of human personality. Scientific findings have established universality of human emotions across the globe. Scientists have established that emotions can play pivotal role in rational intelligence (memory, decision making etc) and social intelligence (Communication, adaption etc). Study of emotions/moods of any person can be interlinked with learning capabilities, behavioral aspect of that person [1].

Emotion recognition can be categorized in verbal and non verbal category. Verbal category uses voice as input and non verbal category can use facial expressions, EEG signals, Gait, gestures and body posture etc. as input. Depending upon the application requirement single modality of input can be used or expanded to bi-modal, multi- modal inputs [2]-[3].

The study undertaken is focused to facial expressions as input. The scope of the study is limited to symmetric facial expressions whereas asymmetric facial expressions [4] are not part of the study. Extraction of facial features from facial expressions is the most crucial step towards achieving emotion recognition. The extracted features can be local [5]-[6], global [7]-[8] or hybrid in nature[9].

Researchers have experimented many methods based on local features as well as global features. Both local and global features have their own merits and combination of both local and global features which is called hybrid features possesses merits of both local and global features. Some of the representative methods are discussed in details in further section of the paper.

Rest of the paper is developed under various sections. Section II discusses the related work done in the area of facial features extraction for emotion classification. Section III discusses basics of Facial features extraction. Section IV provides the details of some of the facial features extraction techniques. Section V provides analysis of facial features extraction techniques and emotion recognition. Conclusion is part of section VI.

II. RELATED WORK

This section discusses the work done so far by various researchers in the field of emotion recognition through facial expressions. Propositions of some of the authors is presented in this section.

Hong-Bo et al. [10] proposed a facial expression recognition system based on a novel local Gabor filter bank. The method uses a two-stage feature compression method PCA plus LDA to select and compress the Gabor feature and minimum distance classifier to recognize facial expressions. The method is effective for both

Smart Local Bus Transportation System based on IoT

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***Abstract*—**Internet of Things (IoT) is a platform that the device used to be smart, every day is processed to be smarter, and every day communication becomes more informative. IoT is still growing and continues to be researched by some researchers. Various models, platforms and applications are proposed and designed in such a way as to benefit society. This paper was developed by conducting surveys on issues oriented towards the utilization of IoT related to the development of intelligent public transport. The architecture presented proposes solving real-life problems by building and disseminating powerful ideas. The purpose of this study is to explore opportunities and challenges for the application of IoT on public transport. In this paper, we focus on to an IoT system that is used to build intelligent transportation bus system (IBTS). IoT based intelligent transportation systems are designed to support the Smart City vision, which aims at employing the advanced and powerful communication technologies for the administration of the city and the citizens.

Keywords*—Internet-of-Things (IOT), WSN, Transportation system, Public transportation, Smart city, Intelligent Bus Transportation System (IBTS).*

I. INTRODUCTION

In the past two decades, the proliferation of modern technology has made a huge impact in the lifestyle of the people. Emerging technologies have developed features that are tightly aligned with people's interests like: being compact, easier to use, feature-rich, connected to the internet, being fast and smart. The availability of affordable sensors, together with the proliferation of internet infrastructure enables an interesting technology called the Internet of Things (IoT). IoT had resulted from context aware computing [1], that aims to allow people and things to be connected anytime, anywhere with anything/anyone. In other words, devices and application have the ability to communicate each other without/less human influence. There is also significant interest and attention towards IoT from the industry [14]. This interest has triggered the development of myriad of sensors for different applications like location sensing, weather forecasting, biomedical applications, and many more. Many companies has come out with their custom board targeting IoT applications [14], [11]. ITS is plays one of the major role in contributing towards smart city development. In most developing countries like India, public transportation system (bus) are the main source of travel for many commuters living in urban as well as rural. Our project theme is to develop a prototype for ITS, which will be useful to track a vehicle through GPS [18], payment of tickets, crowd analysis inside the bus through NFC [19] and finally, the ambience inside the bus can be measured with temperature and humidity sensor [13]. Within our IoT infrastructure, the data collected from our sensors is sent through the internet and processed by the monitoring system to make useful decision and send it to the display system (as per our application requirements). We have grouped the entire architecture into has three systems namely; the sensor system, monitoring system and the display system. The sensor system utilizes GPS, NFC, temperature and humidity sensors, which are always connected with the internet via a GSM network [17] to track the location, commuter and ambience inside the bus. The monitoring system is not only intended to extract the raw data from the sensors database and convert it in to a meaningful context but, it also used to trigger some events with in the bus as well as provide information to the bus driver. The display system is used to show the context data to all the commuters in the bus stop regarding bus and travel information

II. LITERATURE SURVEY

Intelligent Public transport, especially the bus transport system is one area which requires the smart sensing and communication technology to enable commuters to enjoy the benefits of hassle free transport. Though most of the bus services provide a pre-planned time table for travelers, the information is only limited. The information requires constant updates based on the current traffic scenario. Also, accurate arrival time and updated information on the crowd onboard will be beneficial for travelers. In countries like India, where majority of travelers depend on public transport for communication, there is an urgent need to address the problem of intelligent transport system. By combining information technology, advanced communication techniques and smart sensing system, it is possible to address the growing demand of connectivity. IoT presents a unique framework to achieve the required degree of connectivity.

Authors in [2] present a survey of over 100 papers which highlight the application of IoT in various domains such as health, sports, transportation and agriculture. Based on the survey on the transportation domain, the authors have identified usage of GPS and RFID tags as primary the mechanism of location tracking. Also, GSM/ GPRS have been used for communication of information to users in the form of SMS.

Cloud computing and IoT are the terminologies used for intelligent systems. Authors in [3] have provided a clear differentiation between Cloud and IoT based on parameters such as reachability, computational capabilities, role of internet etc. Also, the authors have presented the advantages of integration of cloud computing and IoT, termed as Cloud-IoT.

INFLUENCE OF FINE AGGREGATES ON PROPERTIES OF PERVIOUS CONCRETE

Studying the influence of various proportion Fine aggregates on the properties of Pervious Concrete

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Abstract: The study aims to prepare a pervious concrete with high permeability as well as high compressive strength by using different proportions of fine aggregates and to establish the co-relation between the permeability and compressive strength of concrete. The study also aims to prepare a model-mix to give optimum results in terms of permeability and compressive strength. Pervious Concrete is an innovative pavement material particularly because of its environmental aspects that are particularly favorable in urban areas. Generally Pervious concrete is considered to have high permeability but it has less compressive strength. Due to this drawback there is an uncertainty of usage of this concrete for road pavements in areas having high traffic density. Fine aggregate of size 16-20mm are selected. The pervious concrete is prepared by using various proportions of fine aggregates such as 0%, 10%, 20%, 30% respectively and tested under compression testing machine (CTM) on 7th and 28th days. The permeability of the concrete is found out by using falling head permeability test.

Index terms: **Pervious Concrete, Permeability, Compressive Strength, Fine Aggregates.**

I. INTRODUCTION

Due to rapid urbanization most of the places are covered with impermeable surfaces like cement concrete. This has a major impact on the ground water table. Pervious Concrete pavement is an effective way to minimize this issue. Pervious concrete is an open graded structure with interconnected voids through which rain and storm water is permitted to percolate into the aquifer. It consists of cement, coarse aggregate, some percentage of fine aggregate or No Fine aggregates and water. Pervious concrete is an environmental friendly building material and EPA (Environmental Protection agency) has identified it as a Best Management Practice (BMP) for storm water Management. It can be used for lower traffic roads, shoulders, sidewalks and parking lots. (Magueswari and Narasimha –2013).

Increasing Compressive strength of Pervious concrete results in lesser voids which ultimately results to lower permeability of Pervious concrete. The road pavements has to undergo from various weathering conditions, impact stresses, wear and tear (Abrasion), therefore the pavements need to have high compressive stress. But increasing the compressive strength will result high density concrete with lesser voids, which will ultimately result in lower permeability of road pavements. Pervious concrete with high permeability cannot be used where the pavements has to carry heavy traffic loads.

Pervious Concrete allows no accumulation of storm water on the surface of road pavement. This type of concrete comes with low installation costs, as there is no need of installing storm drains and underground piping.

II. EXPERIMENTAL PROGRAM

Constituent used in the concrete are cement, crushed gravel as coarse aggregates, fine aggregate, admixture and water. Cement OPC 53 Grade conforming to IS: 12269 was used in all mixes, Crushed gravel was used as coarse aggregate of size 16-20mm. Tests on materials was conducted to find out properties of the materials used in this study.

Table 1. Physical properties of materials

Properties	Values
Specific gravity of coarse aggregate	2.69
Specific gravity of fine aggregates	2.78
Specific gravity of cement	3.15
Specific gravity of admixture	1.1

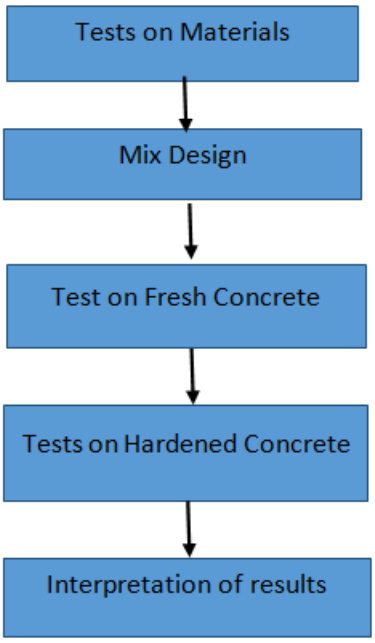
Proportion of fine aggregates was selected as 0%, 10%, 20%, 30% respectively and mix as designed as per IS 10262: 1982. Casting of cubes and cylinders was carried out for the mix proportions.

Cubes and cylinder were tested under Compression Testing Machine (CTM) on 7th & 28th day respectively to find out Compressive strength and Split tensile strength of the samples.

Coefficient of permeability was determined by falling head permeability test by using standard permeability apparatus confirming to IS: 2720 (Part 17) 1986. Specimen was casted in the mould of size 100 mm diameter and 120 mm length and tested after 28 days of curing.

III. RESEARCH METHODOLOGY

Methodology covers the following:



The study begins with the various tests on materials (Coarse aggregates and Fine aggregates) such as Abrasion resistance, impact value, crushing value, specific gravity (for coarse aggregates), specific gravity test (for Fine aggregates). Depending on the various percentage of fine aggregates used in the concrete (i.e. 0%, 10%, 20%, 30%), 4 mixes were designed accordingly. Upon casting, the tests on fresh concrete (Slump cone test, Flow table test, Compaction factor test, Vee-bee consistometer test) were conducted to check the workability of concrete. After curing period of 7 and 28 days, tests on hardened concrete (compressive strength test and split tensile strength) were performed under Compression Testing Machine (CTM). The permeability of pervious concrete was determined by falling head permeability test. The specimen was casted in the mould of size 100 mm diameter and 120 mm length and tested after the curing period of 28 days.

IV. RESULTS AND DISCUSSIONS

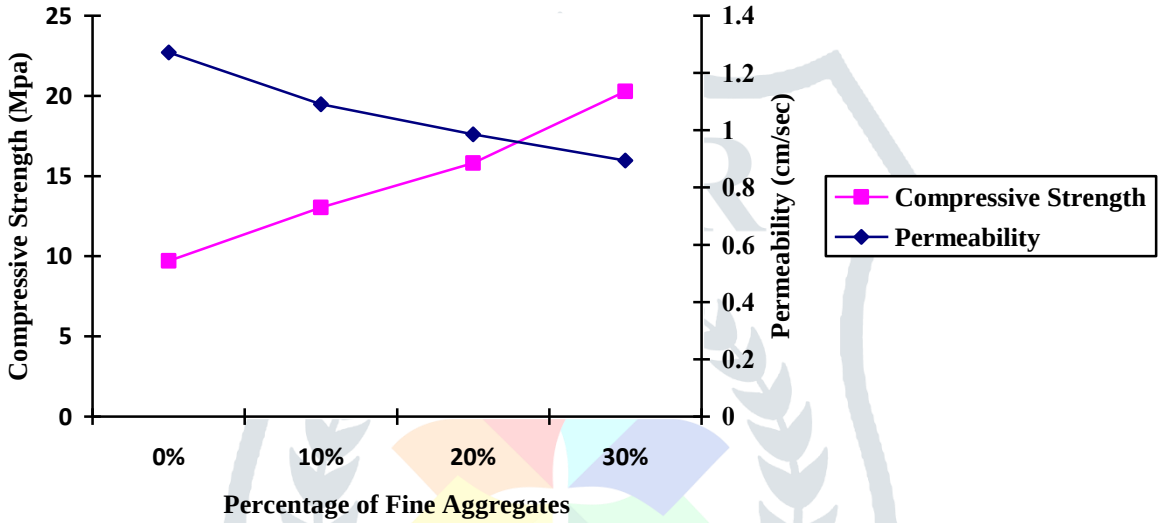
Table 2. Compressive Strength of Samples

M30 Grade	Compressive Strength (Mpa)		Split Tensile Strength (Mpa)	
Percentage of Fine Aggregates	7 Days	28 Days	7 Days	28 Days
0 %	6.763	9.79	5.06	6.74
10 %	8.71	13.04	6.21	7.56
20 %	9.48	15.81	6.62	8.74
30 %	12.09	20.28	7.34	10.68

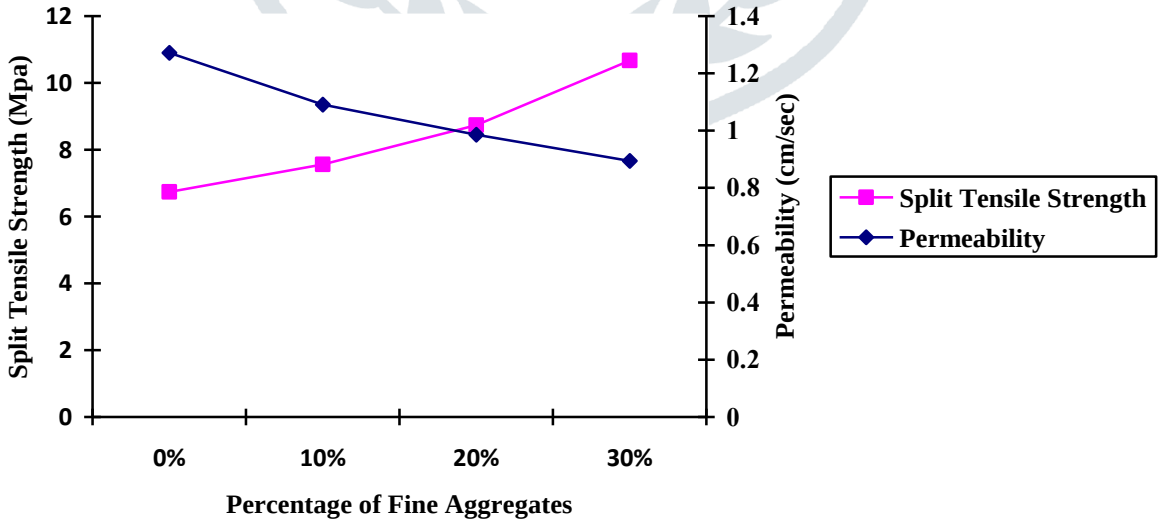
Table 3. Permeability of the Samples

Percentage of F.A	Permeability (cm/sec)		
	Sample 1	Sample 2	Sample 3
0	1.281	1.272	1.179
10	1.128	1.091	1.002
20	1.008	0.986	0.901
30	0.910	0.894	0.832

Graph 1: Compressive Strength vs Permeability vs Percentage of Fine aggregates



Graph 2: Split Tensile Strength vs Permeability vs Percentage of Fne aggregates



From the above graphs it has been observed that the increase in the volume of fine aggregates results in decrease in permeability and increase in the strength (Compressive strength, Split tensile strength). The optimum mix is obtained for the percentage of fine aggregates ranging between 20-25 % for optimum permeability as well as optimum compressive strength.

V. ACKNOWLEDGMENT

We express our sincere gratitude towards Zeal College of Engineering and Research for providing the necessary equipments and apparatus required which were crucial for our study. We would also like to thank Viraj Empire Pvt. Ltd. for showing faith in us by sponsoring the project and the authors of the research papers used as a reference in this study.

VI. CONCLUSION

The study illustrates the influence of various proportions of fine aggregates on various properties as well as behavior of Pervious concrete. In this study it is observed that increasing the volume of fine aggregates results in decrease in volume of voids which reduces the permeability and ultimately increases the compressive strength, split tensile strength of pervious concrete. Optimum mix is identified by observing the graph showing the relation between the permeability and compressive strength by increasing proportions of fine aggregates. The optimum mix is obtained for the percentage of fine aggregates ranging between 20-25 % for optimum permeability as well as optimum compressive strength

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IDENTIFICATION AND CATEGORIZATION OF WATER SCARCITY ZONES IN PURANDHAR TALUKA IN PUNE DISTRICT BY USING 'QGIS'

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Abstract: Due to the changing climate, uneven rainfall, varying topographical conditions, rapid growth of population and increase in water demand has led to a scarcity of water. The problem is much serious in rural areas where lack of infrastructure has made water a topmost priority issue. The rural part of India is directly dependent on groundwater as no adequate provisions are being made for a sustainable supply of water. Excessive utilization of groundwater has led to a decrease in the groundwater levels. Most of the year open wells, farm ponds, tanks, are found to be empty due to low groundwater level, less infiltration and haphazard use of groundwater.

For improving the groundwater level, percolation is an important factor. Percolation is dependant on various parameters such as the slope of the terrain, nature of the soil, temperature, humidity, the rate of evaporation, vegetation, rate and intensity of rainfall, etc.

The objective of this paper is to prioritize and categorize water scarcity zones using global weather and soil data with the help of QGIS software. These water scarcity zones will be divided on the basis of groundwater availability which then, will be divided into high, medium and low scarcity zones.

These zones will be helpful for providing remedial measures to improve groundwater level in the study area.

I. INTRODUCTION

Agriculture is the most important sector of Indian economy. In most regions, agriculture is totally dependent on rainwater, which is stored in dug wells, borewells, open wells and tanks. But due to uneven rainfall & uncertain climatic conditions groundwater levels are depleting.

(Krairapanond & Atkinson,1998), have presented, methodology for river basin management on regional and local basis in thailand and robust methodology for watershed management. (Batchelor,2013), have analysed the severity of water scarcity and its impact on local communities using GIS software. (Pujari & Bhosale.2017), have developed a delineation model and rainfall-runoff model for watershed protection and management using QGIS. (Thomas & Duraisamy,2017), have identified groundwater scarsity zones based on different influencing thematic layer and provide robust methodology to prioritize areas vulnerable to groundwater unavailability, by categorizing the study area into different vulnerable class types such as extreme high,moderate and low. (Mello.et.al.,2018), have investgated impacts of tropical forest cover on water quality in agricultural watershed in southern brazil. (Fedorov et.al., 2018), have developed a method to justify a site selection of self regulated dam which provides minimum impacts on environment.

The present study conducted in the year 2018-2019 comprised of purandhar taluka of pune district, some villages from Bhor,Velhe,Indapur,Baramati,Shirur and Khed are also considered.

In Purandhar taluka and some villages of Bhor, Indapur, Velhe, Shirur & Khed of Pune district the major income source of this area is the agriculture, this area is suffering from uneven rainfall and no infrastructure facilities are available to store the water and to increase groundwater table. Due to the exploitation of groundwater through deep bore wells where the water table has depleted. Due to lack of efforts for rainwater harvesting and recharge, water sources get depleted which in turn makes agriculture practices more difficult. Most open wells in study area dries up within short period of time also no provision are made to improve groundwater table and effective utilization of groundwater resources.

The current study involves a field hydrological mapping that was integrated with QGIS software to delineate watershed area. Global soil and weather data was used to identify, prioritize and categorize water scarcity zones which were divided into three categories (high,medium,low) based on severity and scarcity of water.

II. STUDY AREA

The concerned study area is Purandhar and some villages of Bhor, Velhe, Indapur, Baramati, Shirur, Khed. These locations lie in the coordinates 18° 17' 0" North, 73° 59' 0" east, covers the total area 1,605 km^2 and having density of 2,35,659 of which 1,19,906 are males and 1,15,753 are females (as per the census India 2011). The two catchments of Bhima and Karha river basins receive a median annual rainfall of the 696.34 mm of the total annual average. The annual maximum temperature of Purandhar is 28.31°C and the minimum temperature is about 23°C.

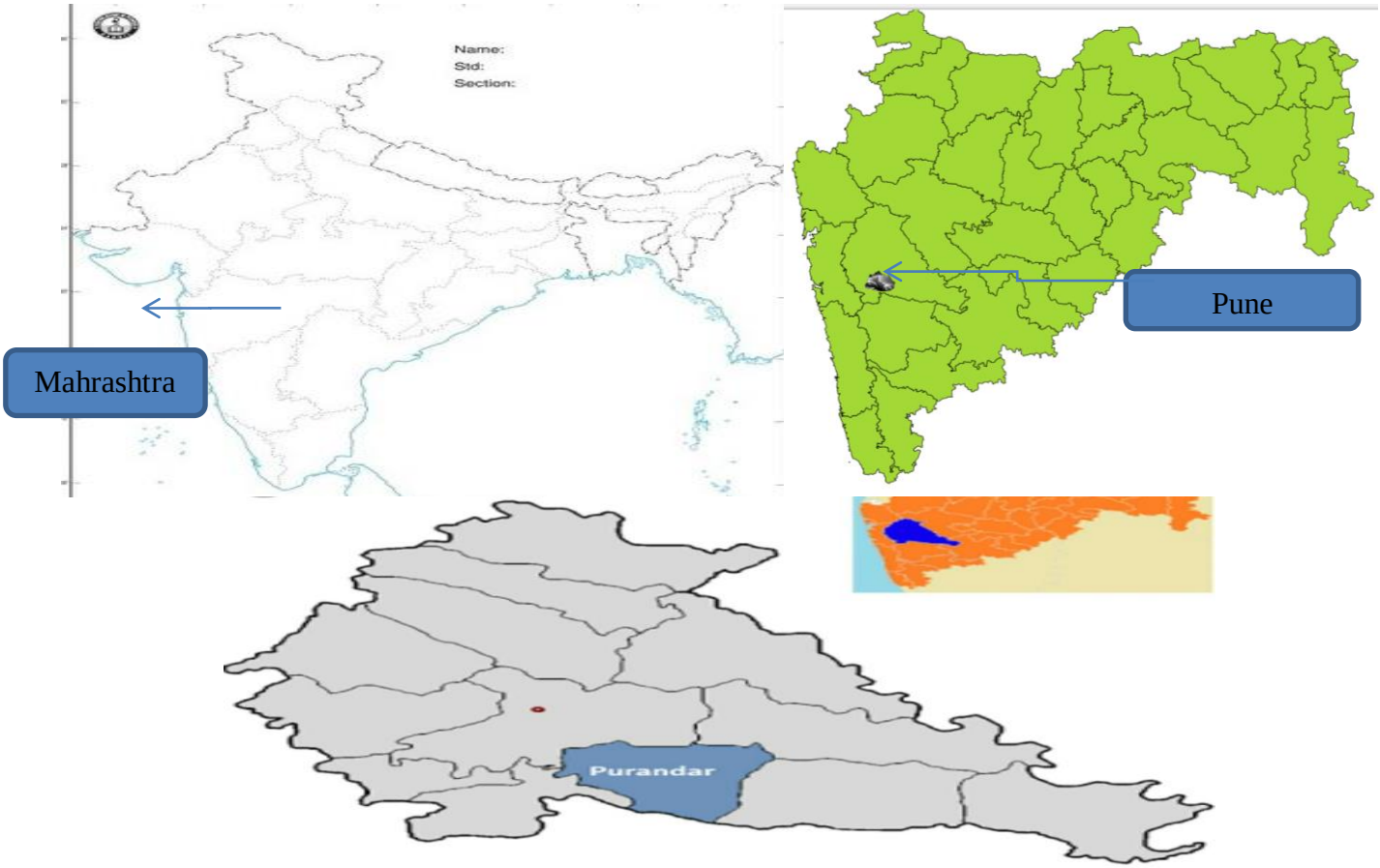

Fig.1 : Study area

III. METHODOLOGY

The approach adopted for the present study area has been presented in the form of flowchart. The inputs required to identify the scarcity zones are rainfall data, KML file of study area from Google Earth and soil and LULC map of concern area. These input are provided in QSWAT model which then delinate the watershed of study area. Hydrological Response Unit were generated after watershed delination and rainfall runoff model was created. With the help of rainfall runoff model, water scaracity zones were identified and categorized according to their severity.

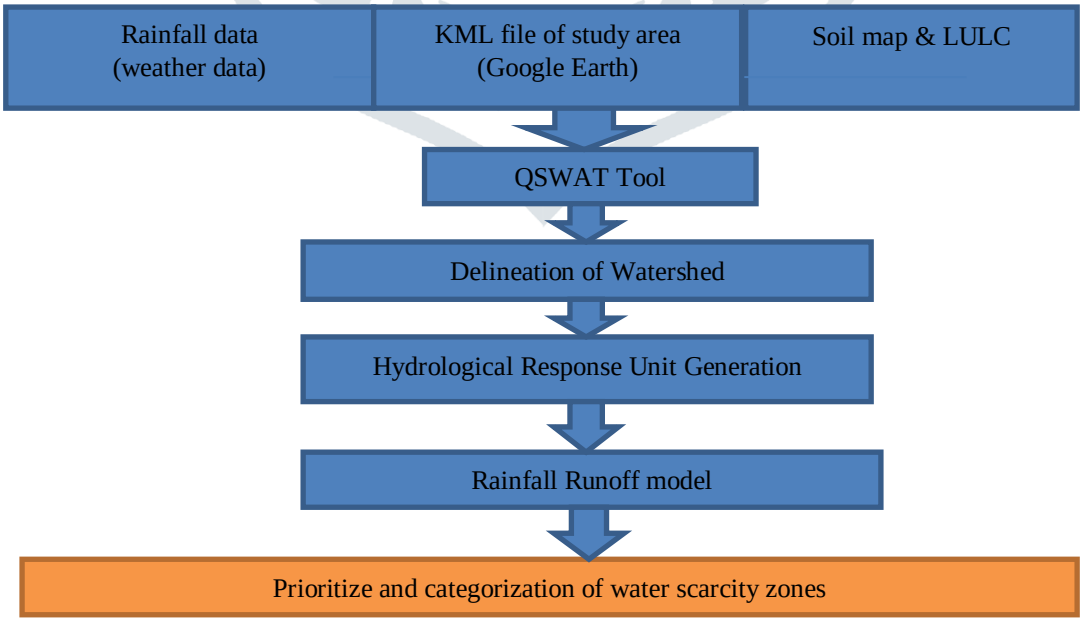

Fig.2 : Flowchart of Methodology

IV. Results And Discussion

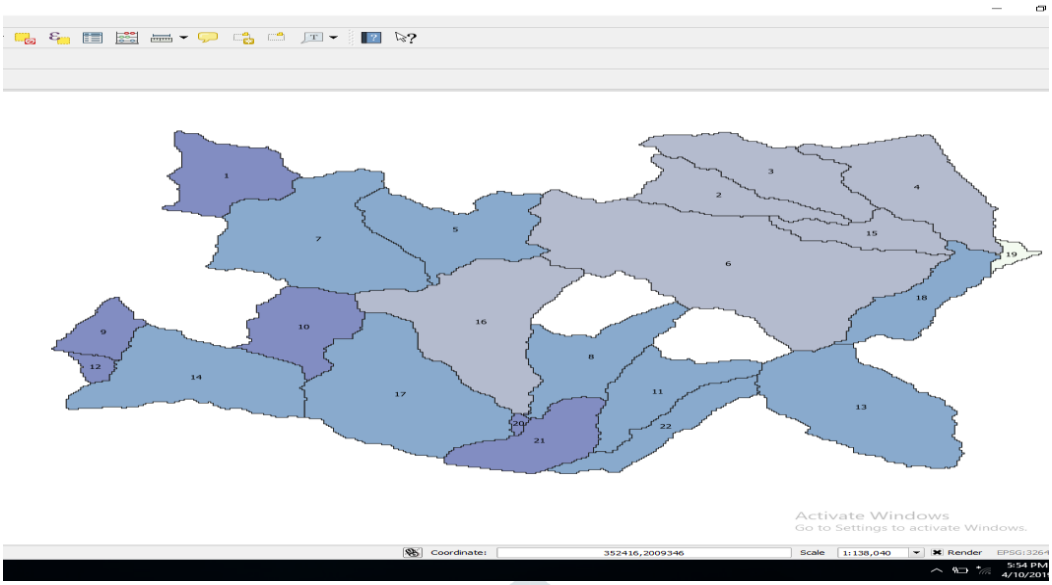

Fig. No. 3 Scarcity of Zones.

Low Scarcity Zones

Medium Scarcity Zones

High Scarcity Zones

Table 1. Zone Wise WATB_SOL mm and SURQ_mm

Subbasin Number	WATB_SOL mm	SURQ_mm	Total area (Sq.Km)
16,6,2,15,3,4,19	38500 - 38525	4451 - 4615	179.19
12,9,10,1,21,20	38525 - 40500	4615 - 4766	62.974
14,17,7,5,8,11,13,22,18	40500 - 41763	4766 - 4913	235.94

WATB_SOL:- Water table depth from the bottom of the soil surface (mm) (daily output only; not used in tile flow equations)

SURQ_mm :- Total Surface runoff contribution to stream flow

- **High scarcity zones**- The zone in which groundwater level is low and runoff is high.
- **Medium scarcity zones**- The zone in which groundwater level is average and runoff is moderate.
- **Low scarcity zones**- The zone in which groundwater level is high and runoff is low.

From above information following provisions and recommendations are made:

Table 2. Zone Wise Provision And Recommendations

Zones	Provisions	Recommendations
High scarcity zones	Check dams, digging pits, subsurface dams	Permission for digging open wells and borewells should be strictly prohibited.
Medium scarcity zones	Ditches, Recharge pits and shafts	Permission for digging open wells and borewells should be permitted to certain extent.
Low scarcity zones	Recharge wells. open wells and dug wells	Permission for digging open wells and borewells should be permitted.

Field mapping of various hydrological parameters such as water level in dug wells and bore wells in different seasons was correlated with the analysis done in QGIS software. The analysis done on QGIS software was found to be synonymous with the actual conditions in study area.

V. Conclusion

From the above study, dividing the scarcity zones into three classes (i.e. high, medium, low) resulted in identifying the locations of high priority which also resulted in deciding the robust methodology for ground water recharging which proved helpful for recommending remedial measures to be taken in that area.

VI. Acknowledgment

We are thankful to Zeal College of Engineering and Research for providing infrastructure for project work and having faith on us for success of our project.

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STREAM FLOW FORECASTING USING ARTIFICIAL NEURAL NETWORK

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Abstract : This paper highlights the use of Artificial Neural Network (ANN) to forecast the stream flow beforehand by exploitation of the previous values of stream flow and precipitation at a location specifically Gaganbawda region in Kolhapur district, in India. Separate Monthly models were developed for monsoon months from June to September. The potential of various ANN algorithms specifically Levenberg-Marquardt (LM), Conjugate Gradient function (CGF) and Quasi-Newton's back propagation (BFG) were investigated through varied models in daily stream flow foretelling and to boost the acute flow prediction. All models performed higher except Gregorian calendar month September model. LM, CGF performed higher in extreme flow prediction as compared to other algorithms.

Index Terms **– Artificial neural network, stream flow, algorithm, modelling.**

I. INTRODUCTION

Modelling of stream flow method is probably the foremost asked for analysis topic for hydrologists everywhere on the planet, thanks to its importance in style, construction and operation of many prediction model. Since a long time a knowledge driven approach of Artificial Neural Networks (ANN) is employed extensively in modelling water flows by several researchers (ASCE 2000). Historically this can be done by using abstract models. Correct foretelling of stream flow well earlier can facilitate in saving human life and furthermore as preventing property harm. Due to numerous difficulties concerned in these modelling techniques researchers are continuously in search of a stronger modelling approach which can be easier, less time consuming and fairly accurate. Presently, the prediction of stream flow one day beforehand by studying the previous measured values of stream flow and rainfall with Artificial Neural Networks (ANN), at Gaganbawda, in Kolhapur district, India is done. In addition to this, different ANN algorithms particularly Levenberg-Marquardt (LM), Conjugate Gradient function (CGF) and Quasi-Newton's back propagation (BFG) were compared with relation to their accuracy in foretelling the runoff. Successive section describes ANN in short, at the side of a review, its application for stream flow modelling followed by data of concerned study area and types of input data used.

II. ARTIFICIAL NEURAL NETWORKS

ANNs were made as a general form of mathematical model of neurons in human brain. An ANN could be a massive parallel distributed system for processing information that contains performance parameters similar to that of neural networks of the human brain (ASCE 2000). An ANN model consists of variety of nodes that are unit organized as per a specific arrangement. One way of separating neural networks is by the no of layers i.e single, bilayer and multilayer. ANNs can even be classified according to the flow direction of data and process. During a feed-forward network, layer wise the nodes are arranged beginning from input layer and terminating at the output layer. There are many hidden layers, with every layer having single or multiple nodes. The nodes in any specific layer are connected to the nodes in the next layer, however to not those within the same layer. Thus, the resultant of a node in a succeeding layer is simply akin about the input data it acquires from previous layers and therefore the corresponding weights. On the opposite hand, in an exceedingly perennial ANN, information flows through the nodes in each directions, from the input to the output facet and vice versa (ASCE 2000). The last layer consists of numeric values foretold by the network and so represents model output. The no of hidden layers and therefore the variety of nodes in every particular hidden layer are determined by a trial-and-error method. The nodes at intervals neighboring layers of the network are absolutely connected by links. A weight is appointed to every link to resent the relative affiliation strength of 2 nodes at each ends in predicting the input-output relationship. Fig. 1 shows the configuration of a feed forward tri layer ANN. These types of ANNs may be utilized in a large type of issues, such as storing various types of information, recalling variable data, classifying the data patterns, performing general mapping from input to output pattern, clubbing similar patterns, or finding answers to strained improvement issues. In this figure, X is an input vector consisting of variables that affect the behavior of the system, and Y is the output vector generated by the system showing system behavior and consisting of variables.

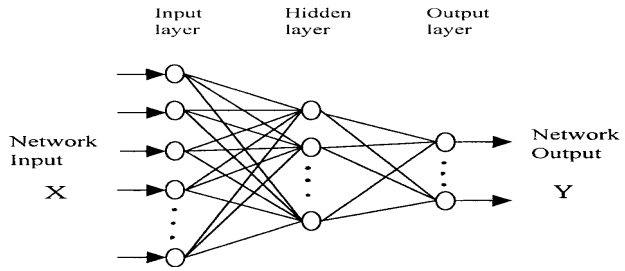

fig 1: schematic diagram of three layer network.

Particularly just in case of stream flow modelling several analysis employees have adopted cause result modelling for predicting runoff within which statistics of motivating variables like precipitation, temperature, also as runoff etc. either separately or together are used to predict stream flow. Three coaching algorithms specifically Levenberg-Marquardt (LM), Conjugate Gradient perform (CGF) and Quasi-Newton's back propagation (BFG) are taken under consideration for the current study. The Neural Network tool provided in MATLAB atmosphere was accustomed, trained and used to check the networks. Details will be found within the ASCE Task Committee (2000), Maier and Dandy (2000), town and Wilby (2001) for rainfall-runoff and stream flow modelling. Though an outsized range of papers on rainfall-runoff modelling on ANN will be seen out there though literature of the current work differs within the proven fact that for coaching the network, the intense event is employed notably to extend the accuracy of the prediction generally and accuracy at peak prediction above all.

III. Study Area And Data

The selected site for the project is Gaganbawda region near Kolhapur. It is located 55 km away from Kolhapur. Gaganbawda is situated on the Western Ghats. It is a non-developed and hilly area of the district. Gaganbawda gets maximum rainfall of 260 mm during rainy season [(IMD report number ESSO/IMD/HS/R.F.REP/02 (2013)/16)]. A total of 36 years of data namely rainfall(R), runoff(Q), temperature(T), evaporation(E) and relative humidity(H) was utilized for the proposed site. The proposed site requires data such as rainfall and runoff for input. Sufficient data is available for a meaningful study in terms of both quantity and quality was obtained from IMD. The India Meteorological Department is an agency of the Ministry of Earth Sciences of the Government of India.

IV. Model Formulation

The data obtained from IMD for last 36 years was carefully segregated and examined for previous data such as, rainfall, runoff, humidity, maximum temperature and evaporation. It is observed that rainfall occurs only during June, July, august and September. Hence data only for these months is considered. Variation was observed in each month therefore separate models for respective months were made. Details are shown in figure 2. All models were trained to use more or less 70% of the data and therefore the 30% of the data that remains was utilised to test the model. The output generated from the model would be the stream flow on the next day. 'Sigmoidal and Linear' were the 2 transfer functions utilized in the primary and secondary layer. The quantity of hidden neurons was determined by trial and error method. Model for every month was then trained for three completely different algorithms specifically Levenberg Marquardt (LM), Conjugate-Gradient function (CGF), Quasi-Newton's back propagation (BFG) and therefore the performance of these models were compared by mean square error and coefficient of correlation. The visual examination was done by plotting the hydrographs of each observed and predicted runoff. Architecture of all models of ANN is different from each other and it has been found by trial and error method.

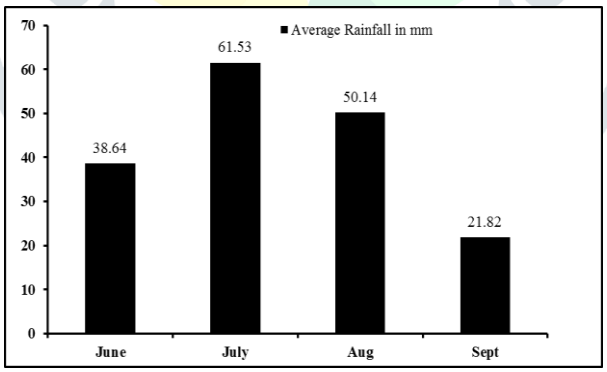

fig 2 : graph showing variation in total rainfall for respective month

V. Model Assessment

Many methods for assessment of the model are available in literature related to application of hydrology. The traditional measures such as coefficient of correlation (r) and mean squared error MSE etc were studied by Mr. McCabe and Mr. Ligates (1999) in their paper, and they suggested that it is not suitable to use only coefficient of correlation as a parameter for model evaluation. Need for more than one model assessment technique is also emphasized by Dawson and Wilby (2001). Mr. Legates and Mr. McCabe (1999) proposed a complete evaluation of model performance should have at least one absolute error measure and a goodness of fit measure or any relative error measure and with additional information. Similarly, bi evaluation criteria is used in the current study to analyze performances in addition to correlation coefficient and scatter plot between the observed and predicted stream flow values are plotted.

VI. Results And Discussion

The trained models tested with specifically 9 types of inputs performed very well as seen from high values of correlation coefficient and the corresponding scatter plot. The three algorithms were run for each month and the best model for every specific month was identified.

table 1. statistical parameters of runoff (m^3/s) at Gaganbawda.

	June	July	Aug	Sept
Mean	25.02	33.98	27.74	13.43
St.Deviation	27.18	31.24	26.43	18.62
Minimum	0.2	0.11	0.275	0.11
Maximum	212.85	274.45	199.65	138.6

table 2. statistical parameters of rainfall (mm) at Gaganbawda

	June	July	Aug	Sept
Mean	38.64	61.53	50.14	21.82
St.Deviation	49.69	56.97	48.29	34.58
Minimum	0	0	0	0
Maximum	387	499	363	525

table 3. statistical parameters of temperature (celsius) at Gaganbawda

	June	July	Aug	Sept
Mean	29.74	26.83	26.47	28.56
St.Deviation	3.40	2.08	2.05	2.52
Minimum	20.7	20.5	19	19.2
Maximum	40	32.6	31.9	35.7

table 4. statistical parameters of evaporation (mm) at Gaganbawda

	June	July	Aug	Sept
Mean	2.66	2.851	0.92	2.65
St.Deviation	1.30	1.46	2.47	1.70
Minimum	0	0	0	0
Maximum	8.5	19.7	51	21

table 5. statistical parameters of humidity (%) at Gaganbawda

	June	July	Aug	Sept
Mean	74.87	83.99	84.10	75.86
St.Deviation	13.39	10.97	10.01	11.31
Minimum	39	27	57	23
Maximum	100	276	255	100

table 6. model details of Gaganbawda station.

Month	LM	CGF	BFG	Input	Training	Testing
June	9:2:1	9:7:1	9:3:1	$Q_t = f(Q_{t-1}, Q_{t-2}, R_{t-1}, R_{t-2}T_{t-1}, E_{t-1}, E_{t-2} H_{t-1}, H_{t-2})$	713	307
July	9:8:1	9:5:1	9:5:1	$Q_t = f(Q_{t-1}, Q_{t-2}, R_{t-1}, R_{t-2}T_{t-1}, E_{t-1}, E_{t-2} H_{t-1}, H_{t-2})$	735	317
August	9:7:1	9:6:1	9:4:1	$Q_t = f(Q_{t-1}, Q_{t-2}, R_{t-1}, R_{t-2}T_{t-1}, E_{t-1}, E_{t-2} H_{t-1}, H_{t-2})$	732	315
September	9:3:1	9:5:1	9:7:1	$Q_t = f(Q_{t-1}, Q_{t-2}, R_{t-1}, R_{t-2}T_{t-1}, E_{t-1}, E_{t-2} H_{t-1}, H_{t-2})$	705	304

table 7. results at Gaganbawda station

	R			MSE		
Mon./Algo	**LM**	**CGF**	**BFG**	**LM**	**CGF**	**BFG**
June	0.98	0.89	0.89	0.000328	0.0077	0.00762
July	0.99	0.97	0.99	0.000126	0.00312	0.000128
August	0.99	0.99	0.99	0.000236	0.000581	0.000300
September	0.99	0.98	0.99	0.00374	0.00504	0.00376

table 8. details of maximum observed and predicted stream flow at Gaganbawda Station

Model	Observed discharge	Max. predicted discharge (m^3/s)		
		LM	CGF	BFG
June	212.85	211.77	165.85	177.09
July	161.15	161.43	158.53	161.99
August	199.65	190.23	161.86	196.94
September	138.6	133.63	105.41	133.64

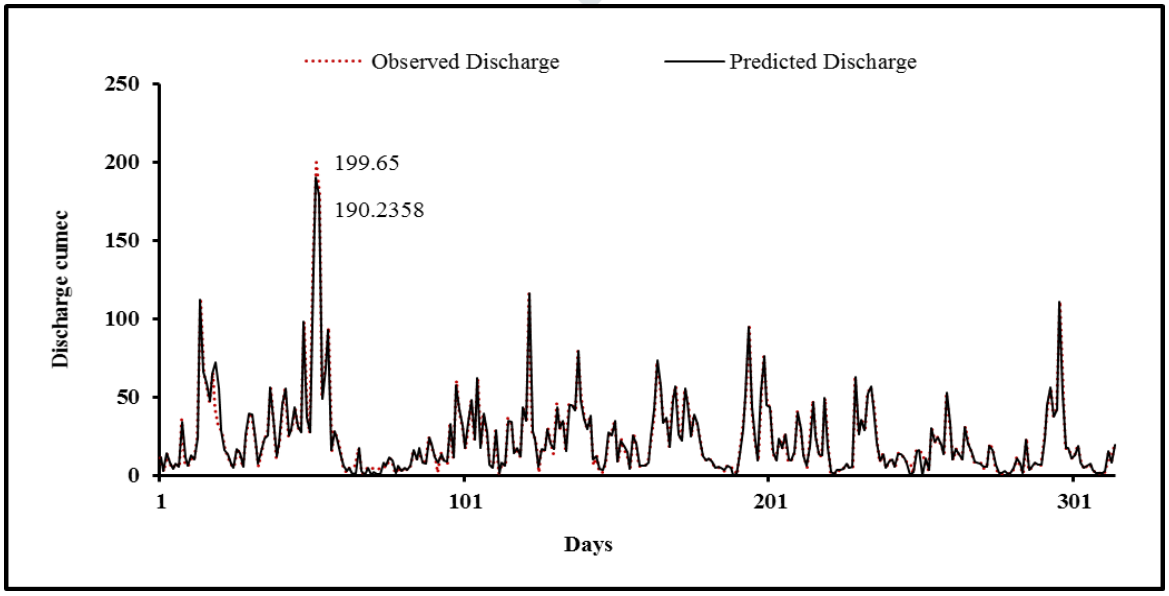

fig 3 : stream flow forecasting one day in advance for LM (August.)

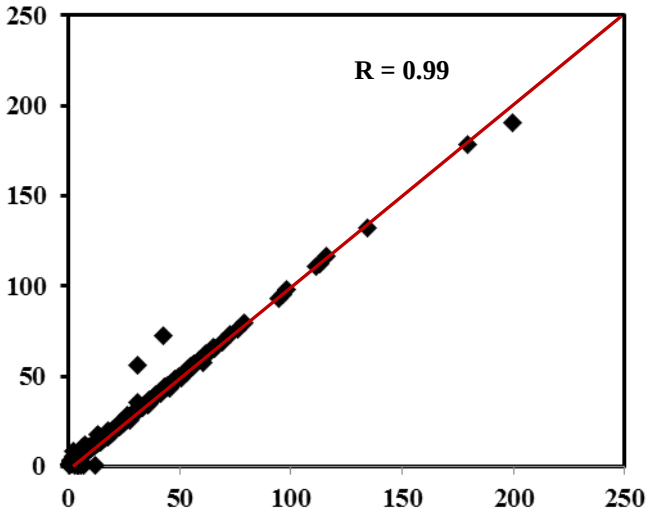

fig 4 : correlation coefficient graph for LM (August).

VII. Conclusion

Forecasting of stream flow one day in advance using the previous values of runoff, rainfall, humidity, maximum temperature and evaporation and the soft computing tool of Artificial Neural Networks (ANN), at Gaganbawda, in Kolhapur district of Maharashtra, India was presented in the foregoing sections. Three different ANN algorithms namely Levenberg-Marquardt also known as LM, Conjugate Gradient Function also called CGF, and Quasi-Newton's back propagation known widely as BFG, were tested for each model and compared to identify the best algorithm that was suitable. For the month of June, value of coefficient of correlation for LM was 0.98. The mean square error value of LM was 0.000328 which was lowest observed between the three algorithms. For the month of July, LM and BFG were the best performing algorithms. The mean square error values were marginally different with values being 0.000126 and 0.000128 respectively. The correlation coefficient values were 0.99 for both algorithms. For August model, the value of correlation being 0.99 for each of the algorithm. LM performed marginally well with mean square error value being lowest among the three at 0.000236. In the September model, coefficient of correlation value at 0.99 were observed for both the algorithms. The mean square error value for LM was slightly better at 0.00374. Hence it was observed that for the month of June LM was the best performing algorithm. For July LM and BFG performed better than CGF with LM being the most favorable. For August all the three algorithms performed relatively well with LM being most favorable. Finally for September, LM outperformed all the other algorithms. The peak value in each model was predicted accurately by LM.

VIII. Acknowledgment

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