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CONTENTS

Automatic Counting of Fruits Using Circle Hough Transform (CHT)

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ABSTRACT
Smart farming is a growing research field in agriculture image based applications. In order to achieve effective smart farming we need to do complete automation of manual processes in the food processing industries. In this paper we are identifying the different size of oranges and count the number of orange fruits are there in our input image. In this proposed method we use Circular Hough Transform (CHT) algorithm to recognize the oranges and count the number of oranges are there in the given images. Furthermore we find the radius of them. Based on the radius value, the oranges of different sizes are classified.

Keyword **- Circle detection, Circle Hough Transform algorithm (CHT) and fruit counting.**

I. INTRODUCTION

In recent years, the development in machine vision and supporting technologies has indicated in general acceptance of feasibility and profitability of implementing visual inspecting system in quality assurance in food processing industries [1]. Orange shape detection is one of the challenging tasks in machine intelligence and computer vision because it has various sizes in various stages. Fruit detection and counting is also a challenging task. One of the most challenging tasks of an image processing nowadays is feature extraction. In the real world applications, objects of interest may come in different sizes and shapes, not pre-determined one. In this work we use Circle Hough Transform (CHT) algorithm to extract the size of that oranges by measuring the radius and center of that circle and also we can count the number of oranges are there in that. Finally we categorize total number of oranges into two, which is small size and big size oranges.

II. LITERATURE REVIEW

The author Neelu Jain has represents algorithm for recognition of the coins of different denomination .In that method they uses canny edge detection to generate edge

map , then uses CHT (Circular Hough transform) to recognize the coins and further find the radii of them. Based on the radius of the coin, the coins of different denomination are classified [1]. The CHT is used for detecting the coins of different denominations, so a suitable range for radius of the coins can be defined [1].

The CHT has been used in several researches in detecting iris and pupil boundaries for face recognition, fingertips position detection and automatic ball recognition [1].

The author marcin smereka proposes a method that is designed for the detection of demanding (noisy, not clearly distinguishable) circular objects can be applied, fixing some data with domain-specific values, to any real industry images [2].

III. METHODOLOGY

The Circular Hough Transform (CHT) based algorithm for finding circles in images. This approach is used because of its robustness in the presence of noise, occlusion and varying illumination [7].

The CHT is not a rigorously specified algorithm; rather there are a number of different approaches that can be taken in its implementation. However, by and large, there are three essential steps which are common to all [7].

1. Accumulator Array Computation.

Foreground pixels of high gradient are designated as being candidate pixels and are allowed to cast ‘votes’ in the accumulator array [7]. In a classical CHT implementation, the candidate pixels vote in pattern around them that forms a full circle of a fixed radius [7]. Figure 1a shows an example of a candidate pixel lying on an actual circle (solid circle) and the classical

CHT voting pattern (dashed circles) for the candidate pixel [7].

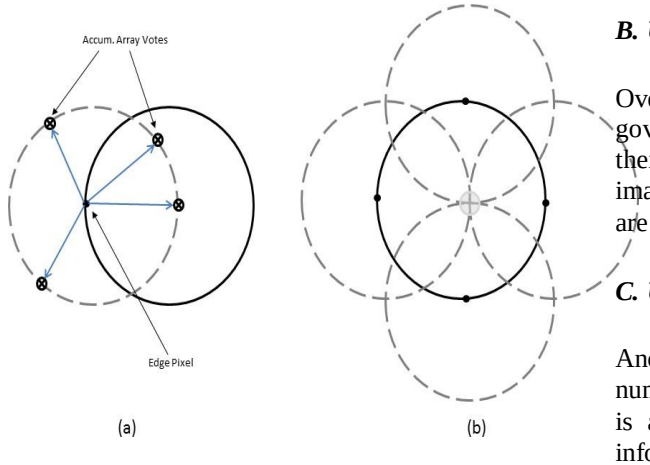

Fig 1: Classical CHT Voting Pattern

2. Center Estimation

The votes of candidate pixels belonging to an image circle tend to accumulate at the accumulator array bin corresponding to the circle's center [7]. Therefore, the circle centers are estimated by detecting the peaks in the accumulator array [7]. Figure 1b shows an example of the candidate pixels (solid dots) lying on an actual circle (solid circle), and their voting patterns (dashed circles) which coincide at the center of the actual circle [7].

3. Radius Estimation

If the same accumulator array is used for more than one radius value, as is commonly done in CHT algorithms, radii of the detected circles have to be estimated as a separate step [7].

The method provides two algorithms for finding circles in images: Phase-Coding (default) and Two-Stage. Both share some common computational steps, but each has its own unique aspects as well [7].

The common computational features shared by both algorithms are as follow:

A. Use of 2-D Accumulator Array

The classical Hough Transform requires a 3-D array for storing votes for multiple radii, which results in large storage requirements and long processing times [7]. Both the Phase-Coding and Two-Stage methods solve this problem by using a single 2-D accumulator array for all the radii [7]. Although this approach requires an additional step of radius estimation, the overall computational load is typically lower, especially when working over large radius range. This is a widely adopted practice in modern CHT implementations [7].

B. Use of Edge Pixels

Overall memory requirements and speed is strongly governed by the number of candidate pixels. To limit their number, the gradient magnitude of the input image is threshold so that only pixels of high gradient are included in tallying votes [7].

C. Use of Edge Orientation Information

Another way to optimize performance is to restrict the number of bins available to candidate pixels [7]. This is accomplished by utilizing locally available edge information to only permit voting in a limited interval along direction of the gradient (Figure 2) [7].

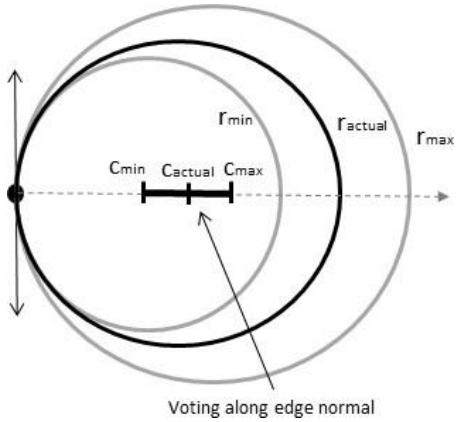

Fig 2: Voting mode: multiple radii, along direction of the gradient

r_{min}	Minimum search radius
r_{max}	Maximum search radius
r_{actual}	Radius of the circle that the candidate pixel belongs to
c_{min}	Center of the circle of radius r_{min}
c_{max}	Center of the circle of radius r_{max}
c_{actual}	Center of the circle of radius r_{actual}

The two CHT methods employed by the circle finding function fundamentally differ in the manner by which the circle radii are computed [7].

D. Two-Stage

Radii are explicitly estimated utilizing the estimated circle centers along with image information. The technique is based on computing radial histograms [7].

E. Phase-Coding

The key idea in Phase Coding [5] is the use of complex values in the accumulator array with the radius information encoded in the phase of the array entries [7]. The votes cast by the edge pixels contain information not only about the possible center locations but also about the radius of the circle associated with the center location [7]. Unlike the Two-Stage method where radius has to be estimated explicitly using radial histograms, in Phase Coding the radius can be estimated by simply decoding the phase information from the estimated center location in the accumulator array [7].

IV. EXPERIMENTAL RESULTS

In this work, firstly we did image accusation. In that, we took an image, which contains various sizes of oranges. The acquired images may have different sizes so that we need to resize it to the appropriate format which is comfortable for your work. After the image resizing process we applied edge detection techniques to identify the edges of an image. On that image we applied circular Hough transform method to identify the shape and size of an image. In this algorithm we calculated the center and radius value of each circle with the help of the sensitive value. In this work we will use 0.98 as our sensitivity value. With the help of these values we can identify the size and shape of an orange image and count on it. Total number of oranges found by our method is shown in figure 4. Our method categorized these 40 oranges into two types such as small and big, based on the size of an orange. From the input image (figure 3) we got 4 Small size oranges and 36 big size oranges.

TABLE 1: EXPERIMENTAL RESULTS OF THE INPUT IMAGES

Total No.of apples found	Sensitivity Value	Total No.of Small Size apple found	Total No.of Small Size apple found
40	0.98	4	36

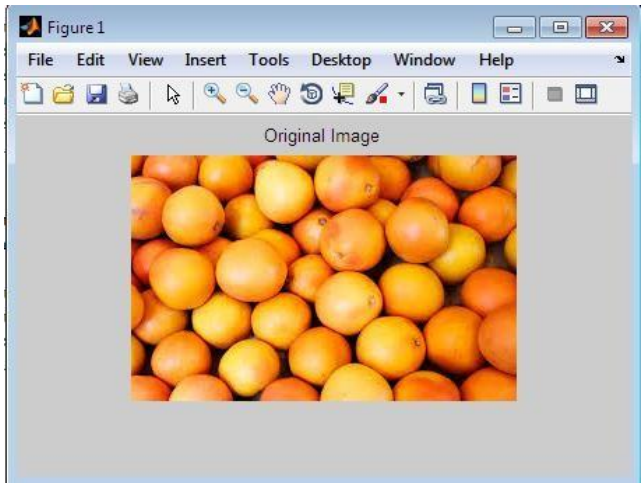

Fig 3: Original Input Image

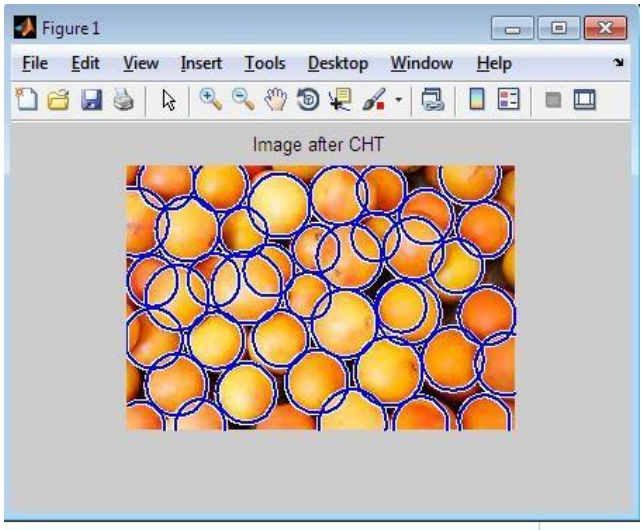

Fig 4: Image after Circular Hough Transform method

V. CONCLUSION

In our work the oranges of different sizes and shape can be recognized based on the radius of the circle. The proposed system can be used to identify the shape and size of oranges by using Circular Hough Transform methods. The problem arises if the orange image is captured from a distance and the image tends to be small. Besides that, some of the ranges are overlapped. These restrictions make the detection process difficult. The results shows that the Circular Hough Transform algorithm is the best method to identify the circle based objects.

In our Future work we may include detection of several shape features that are overlapped with each other for all citric fruits.

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BIG DATA ERA: ISSUES, CHALLENGES AND SOLUTIONS

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ABSTRACT

Big data is a large dataset and a category of computing strategies and technologies that are used to handle large datasets. In this context it means a dataset too large to reasonably process or store with traditional tooling or on a single computer. This means that the common scale of big datasets is constantly shifting and may vary significantly from organization to organization. The basic requirements for working with big data are the same as the requirements for working with datasets of any size. However, the massive scale, the speed of ingesting and processing, and the characteristics of the data that must be dealt with at each stage of the process present significant new challenges when designing solutions. The goal of most big data systems is to surface insights and connections from large volumesof heterogeneous data that would not be possible using conventional methods. Big data problems are often unique because of the wide range of both the sources being processed and their relative quality. This paper discusses in detail the issues, challenges and solutions to the Big data analytics.

KEYWORDS: ***Structured data, Semi Structured data, Un Structured data, Privacy Breach***

INTRODUCTION

Big Data' is a **data** but with a **huge size**. 'Big Data' is a term used to describe collection of data that is huge in size and yet growing exponentially with time. In short, such a data is so large and complex that none of the traditional data management tools are able to store it or process it efficiently. Big data could be found in three forms
:

1. **Structured:** Any data that can be stored, accessed and processed in the form of fixed format is termed as a 'structured' data.

2. **Unstructured:** Any data with unknown form or the structure is classified as unstructured data. In addition to the size being huge, un-structured data poses multiple challenges in terms of its processing for deriving value out of it.

3. **Semi-structured:** Semi-structured data can contain both the forms of data. We can see semi-structured data as a structured in form but it is actually not defined with e.g. a table definition in relational DBMS.

Characteristics

(i) Volume – The name 'Big Data' itself is related to a size which is enormous. Size of data plays very crucial role in determining value out of data. Also, whether a particular data can actually be considered as a Big Data or not, is dependent upon volume of data. Hence, **'Volume'** is one characteristic which needs to be considered while dealing with 'Big Data'.

(ii) Variety – The next aspect of 'Big Data' is its **variety**.

Variety refers to heterogeneous sources and the nature of data, both structured and unstructured. During earlier days, spreadsheets and databases were the only sources of data considered by most of the applications. Now days, data in the form of emails, photos, videos, monitoring devices, PDFs, audio, etc. is also being considered in the analysis applications. This variety of unstructured data poses certain issues for storage, mining and analyzing data.

(iii) Velocity – The term **'velocity'** refers to the speed of generation of data. How fast the data is generated and processed to meet the demands, determines real potential in the data.

Big Data Velocity deals with the speed at which data flows in from sources like business processes, application logs, networks and social media sites, sensors, Mobile devices, etc. The flow of data is massive and continuous.

(iv) Variability – This refers to the inconsistency which can be shown by the data at times, thus hampering the process of being able to handle and manage the data effectively.

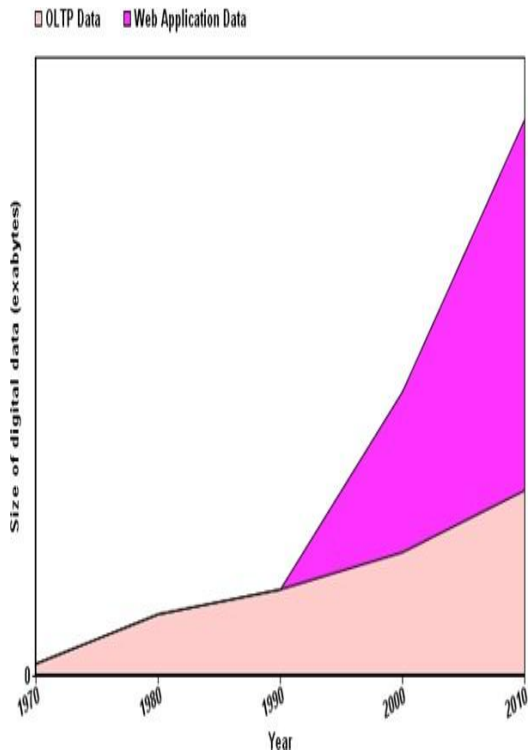

Figure 1 Data growth over Years

Figure 1 shows that web application data, which is unstructured, consists of log files, transaction history files etc. OLTP systems are built to work with structured data wherein data is stored in relations (tables).

Benefits

The importance of big data does not revolve around how much data a company has but how a company utilizes the collected data. Every company uses data in its own way; the more efficiently a company uses its data, the more potential it has to grow. The company can take data from any source and analyze it to find answers which will enable:

(a) **Cost Savings :** Some tools of Big Data like Hadoop and Cloud-Based Analytics can bring cost advantages to business when large amounts of data are to be stored and these tools also help in identifying more efficient ways of doing business.

(b) **Time Reductions :** The high speed of tools like Hadoop and in-memory analytics can easily identify new sources of data which helps businesses analyzing data immediately and make quick decisions based on the learnings.

(c) **New Product Development :** By knowing the trends of customer needs and satisfaction through analytics you can create products according to the wants of customers.

(d) **Understand the market conditions :** By analyzing big data you can get a better understanding of current market conditions. for example, by analyzing customers' purchasing behaviors, a company can find out the products that are sold the most and produce products according to this trend. By this, it can get ahead of its competitors.

(e) **Control online reputation:** Big data tools can do sentiment analysis. Therefore, you can get feedback about who is saying what about your company. If you want to monitor and improve the online presence of your business, then, big data tools can help in all this.

Issues , Challenges and Solutions

Big data is so useful and important that crooks have made efforts to tap into it as well, so they may use it for their own evil purposes. A recent Cap Gemini report agrees, stating "Digital customer experience is all about understanding the customer, and that means harnessing all sources – not just analyzing all contacts with the organization, but also linking to external sources such as social media and commercially available data. For the digital supply chain, it is about collecting, analyzing and interpreting the data from the myriad of connected devices."The biggest problems facing organizations is how to get value from this data. Only 27% of the executives surveyed described their big data initiatives as successful. This indicates that there is a huge gap between the theoretical knowledge of big data and actually putting this theory into practice. As being said, there are a couple of issues with big data.

1. PRIVACY BREACH

Privacy Breach refers to the release of otherwise private information to persons who should have no access to it, whether it be done deliberately or mistakenly. Privacy breaches occur may occur when a business employs weak security measures. Although the hacker is still primarily liable for the act, it could have been prevented should there have been stricter tools and protocols that safeguard privacy.

To combat privacy breach, invest on a quality anti-malware software, provide a point of entry security (such as encryption or tokenization), and employ secure connections from your data collection system to your data storage system.

2. IT'D BE IMPOSSIBLE TO BE ANONYMOUS

It is now possible to re-identify individuals using anonymized data in public datasets. With a computer, an internet connection, and public datasets, you can now re-identify a supposedly anonymized data. The process is not easy, but still, the thought that it is possible opens an opportunity for identity theft. Should more people learn how to do this, it will be impossible to keep a private presence online.

3. ANALYTICS ISN'T 100% ACCURATE

In research, there is this thing called the margin of error or that leeway for miscalculations, exceptions, and other factors that cause a relatively dismissible amount of error. Analysis of big data is not immune to it, especially because of the involvement of a very large amount of data. As it is very difficult, if not impossible, to check the analysis manually, your best bet to ensure that your analytics will not provide gravely inaccurate data is to use a trusted data analysis tool that guarantees the highest level of accuracy.

4. E-DISCOVERY PROBLEMS

E-discovery refers to the search of electronic data for use as evidence in a legal proceeding. Court and the even the Government can order e-discovery in the form of a hacking activity to aid the search of critical evidence. Electronic evidence is much more easily to be searched and collected. However, it is now more difficult to search for electronic evidence because there are lots and lots of data and that it is difficult to comply with legal restrictions. Furthermore, e-discovery is now more expensive than ever.

5. DISCRIMINATION

Tapping into big data is said to make discrimination more prevalent. Being able to access electronic information (like usual online activity, online preferences) that could negatively affect the opportunity of a person, say, to secure a loan, and without that person's ability to justify such information is said to be highly discriminatory. It is best not to make decisions plainly out of electronic data, especially those that have an immense impact on someone.

6. INTERPRETATIONS CAN BECOME AN ETHICAL ISSUE

The biggest purpose of analyzing big data is to help in coming up with decisions. However, relying only on electronic data, without much concern on its impact to people or the environment, can become ethical issues. We must learn that big data is here to aid us and not command us. Our decisions should always be based on how it will affect everyone involved, and not solely on numbers on a spreadsheet.

7. LACK OF SKILLED WORKERS

Cap Gemini's report found that 37% of companies have trouble finding skilled data analysis's to make use of their data. The best bet is to form one common data analyst team for the company, either through re-skilling your current workers or recruiting new workers specialized in big data. We need to find employees that not only understand data from a scientific perspective, but who also understand the business and its customers, and how their data findings apply directly to them.

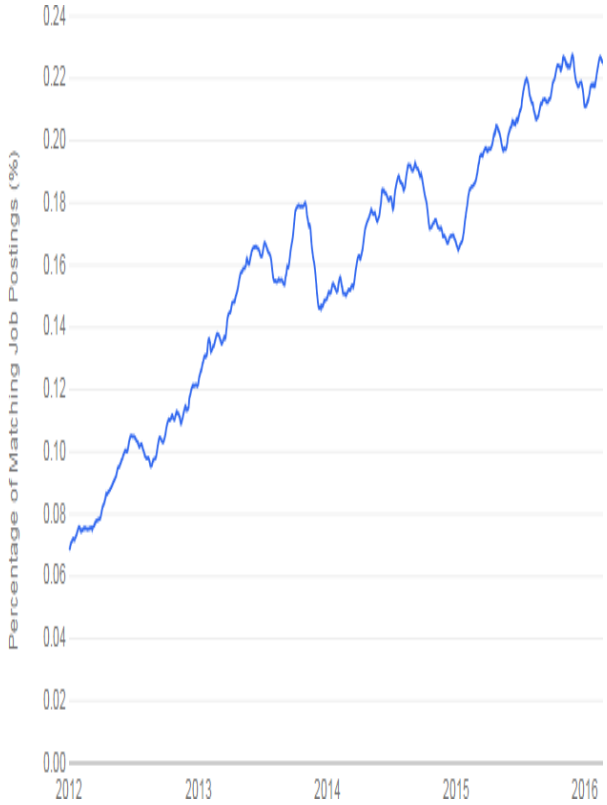

Figure 2 Big Data Analytics job Trends

Figure 2 show that there is a growing trend for it and as a result there is a steady increase in the number of job opportunities.

CONCLUSION

The use of Big Data is becoming common these days by the companies to outperform their peers. In most industries, existing competitors and new entrants alike will use the strategies resulting from the analyzed data to compete, innovate and capture value. Big Data helps the organizations to create new growth opportunities and entirely new categories of companies that can combine and analyze industry data. These companies have ample information about the products and services, buyers and suppliers, consumer preferences that can be captured and analyzed. It also understands and optimizes business processes. Retailers can easily optimize their stock based on predictive models generated from the social media data, web search trends and weather forecasts.

Future Scope

India is extremely famous among the universal market which gives seaward administrations to a few companies in business analytic making them one of the countries that has a great data analytics future scope. Since large measures of data are pooling in the company, it is constantly critical to take the correct choice and beat the drawbacks in companies. The extent of business analytic in a few large enterprises have been ceaseless and expanding which procures productive salaries while dealing with the assets, investigating the accessible data, identify designs in the concealed data to understand the money related condition of the company.

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Big data veracity Mining Technique using Hadoop Server

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Abstract

Data uncertainty is present in many real-world applications. Hadoop Map Reduce programming model solves the problem of large datasets. In our proposed system Collaborative filtering is a method of making automatic predictions (filtering) by the user nearest SPOT detection method. A user expresses his or her ratings by the content (e.g. Bp, Sugar, Heart attack, etc.) of the system. For higher performance, Map Reduce tries to assign workloads to those servers wherever the information to be processed is hold on. So our process will be more accurate with well-organized prediction especially in medical field accuracy is very important so this proposed system is based on medical dataset. Using Collaborative filtering models the items are calculated from rating metrics to diagnose the problem. And moreover it will be used to predict regarding the problem accuracy for given persons in health care system. To support filters involving relationship between documents. It helps people make choices based on the opinion of other people. And to find articles they will like in the huge streams of available articles cause that data by vast accessing in this domain.

Keywords— Map reduces, ClustBigFim, Collaborative Filtering and SPOT detection

I. INTRODUCTION

Big data is a term for data sets that are so large or complex that traditional processing application is inadequate to deal with them. Challenges include capture, storage, analysis, data curation, search, sharing, transfer, visualization, querying, updating and information privacy. Big data is a broad term for processing data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, and information privacy. Accuracy in big data may lead to more confident decision making. And better decisions can mean greater operational efficiency, cost reduction and reduced risk.

Big Data are high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation. Big Data represents the Information assets characterized by such a High Volume, Velocity and Variety to require specific Technology and Analytical Methods for its transformation into Value.

The **Three Vs** have been expanded to other complementary characteristics of big data:

- **Volume**: Big data doesn't sample; it just observes and tracks what happens.
- **Velocity**: Big data is often available in real-time.
- **Variety**: Big data draws from text, images, audio, video; plus it completes missing pieces through data.

Big data is mostly generated from social media websites, sensors, devices, video/audio, networks, log files and web, and much of it is generated in real time and on a very large scale. Big data analytics is the process of examining this large amount of different data types, or big data, in an effort to uncover hidden patterns, unknown correlations and other useful information. With rapid innovations, frequent evolutions of technologies and a rapidly growing internet population, systems and enterprises are generating huge amounts of data to the tune of terabytes and even peta bytes of information. Since data is being generated in very huge volumes with great velocity in all multi-structured formats like images, videos, web logs, sensor data, etc. from all different sources, there is a huge demand to efficiently store, process and analyze this large amount of data to

make it usable.system is implemented using java programming language.

II. RELATED WORKS

The value of using static code attributes to learn defect predictors has been widely debated. Prior work has explored issue like the merits of "McCabe's versus Halstead versus lines of code counts" for generating defect predictors.

We show here that such debates are irrelevant since how the attributes are used to build predictors is much more important than which particular attributes are used [1].

Mining frequent item sets and association rule mining (ARM) are well-analyzed techniques for revealing attractive correlations among variables in huge datasets. The Apriority algorithm is one of the most broadly used algorithms in ARM, and it collects the item sets that frequently occur in order to discover association rules in massive datasets [2].

Distributed Data Mining (DDM) is the extraction of knowledge from several databases (Data Mining) regardless of their physical location; it allows the partial analyses of the data extracted from individual distributed sites, and then send the different partial results to other sites to form the final result [3].Mining is used later to develop a new large scale classifier. Map Reduce simulator was developed to evaluate the scalability of proposed apriority algorithms on Map Reduce. The developed associative rule mining inherits the, Map Reduce scalability to huge datasets and to thousands of processing nodes [4].

The enormity and high dimensionality of datasets typically available as input to problem of association rule discovery, makes it an ideal problem for solving on multiple processors in parallel. The primary reasons are the memory and CPU speed limitations faced by single processors. In this paper an Optimized Distributed Association Rule mining algorithm [5].

Adaptability of some core data mining algorithms such as decision trees, discovery of frequent patterns, clustering, We have identified two approaches for carrying out distributed data mining and tried to bring out the advantages of using mobile agents in client server–based approaches, in terms of bandwidth usage and network latency [6].

The theme of business intelligence (BI) is to exchange the data that tends increased value to the enterprise. Rather than collecting the information on what organizations are really doing, it is better to understand how organizations view big data and to what extent they are currently using it to benefit their business [7].

Empirical evaluation shows that these algorithms outperform the known algorithms by factors ranging from three for small problems to more than an order of magnitude for large problems. We also show how the best features of the two

proposed algorithms can be combined into a hybrid algorithm, called AprioriHybrid. Scale-up experiments show that AprioriHybrid scales linearly [8].

However, these tools come with their own technical challenges, e.g. balanced data distribution and inter-communication costs. In this paper, we investigate the applicability of FIM techniques on the Map Reduce platform [9].

The value of using static code attributes to learn defect predictors has been widely debated. Prior work has explored issue like the merits of "McCabe's versus Halstead versus lines of code counts" for generating defect predictors. We show here that such debates are irrelevant since how the attributes are used to build predictors is much more important than which particular attributes are used. Also, contrary to prior pessimism [10].

III. METHODOLOGY

The Collaborative k-means clustering technique applied on Map Reduce programming model. In this hybrid approach, clustering using k means algorithm to generate Clusters from huge datasets to mine frequent item sets from generated clusters using Map Reduce programming model. Results shown that execution efficiency of Collaborative screening algorithm is increased by applying k-means clustering algorithm as one of the pre-processing technique.

CF algorithm based on Map Reduce programming model focuses on pre-processing, frequent item sets of size k are mined using K-mean algorithm and discovered frequent item sets CF works on large datasets with increased execution efficiency using Map Reduce.

COLLABORATIVE FILTERING

Collaborative filtering is the process of filtering for information or patterns using techniques involving collaboration among multiple agents, viewpoints, data sources, etc. Applications of collaborative filtering typically involve very large data sets. Collaborative filtering methods have been applied to many different kinds of data including: sensing and monitoring data, such as in mineral exploration, environmental sensing

over large areas or multiple sensors; financial data, such as financial service institutions that integrate many financial sources; or in electronic commerce and web applications where the focus is on user data, etc. The remainder of this discussion focuses on collaborative filtering for user data, although some of the methods and approaches may apply to the other major applications as well. Collaborative filtering algorithm is based on the comparison of one user's behavior with other user's behavior, to find his nearest neighbors, and according to his neighbor's interests or preferences to predict his interests or preferences.

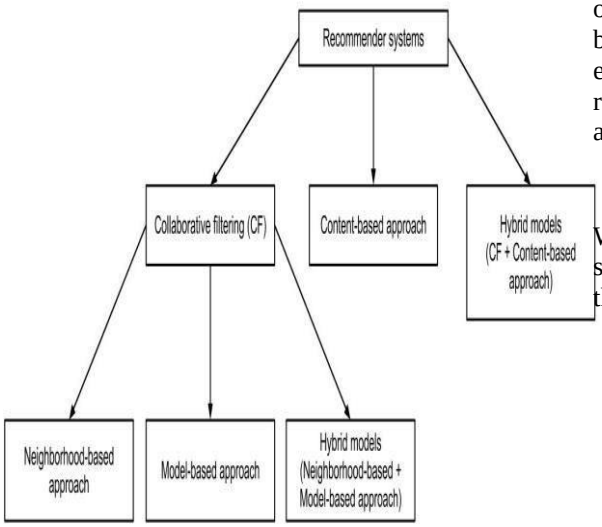

Fig: Approaches

Collaborative filtering algorithms often require
(1) Users' active participation,
(2) An easy way to represent users' interests, and
(3) Algorithms that is able to match people with similar interests.

Typically, the workflow of a collaborative filtering system is:

1. A user expresses his or her preferences by rating items (e.g. books, movies or CDs) of the system. These ratings can be viewed as an approximate representation of the user's interest in the corresponding domain.
2. The system matches this user's ratings against other users' and finds the people with most "similar" tastes.
3. With similar users, the system recommends items that the similar users have rated highly but not yet being rated by this user (presumably the absence of rating is often considered as the unfamiliarity of an item)

A key problem of collaborative filtering is how to combine and weight the preferences of user neighbours. Sometimes, users can immediately rate the recommended items. As a result, the system gains an increasingly accurate representation of user preferences over time.

- Template matching: Input image is compared with predefined face template. But the performance here suffers due to variations in scale, pose and shape.
- Appearance-based method: In template matching methods, the templates are predefined by experts. Where templates in appearance based methods are learned from examples in images analysis and machine learning techniques.

It's effective and easy to implement. Typical examples of this approach are neighborhood-based CF and item-based/user-based top-N recommendations. For example, in user based approaches, the value of ratings user 'u' gives to item 'i' is calculated as an aggregation of some similar users' rating of the item:

$$r_{u,i} = \mathbf{aggr}_{u' \in U} r_{u',i}$$

Where 'U' denotes the set of top 'N' users that are most similar to user 'u' who rated item 'i'. Some examples of the aggregation function include:

$$r_{u,i} = \frac{1}{N} \sum_{u' \in U} r_{u',i}$$

$$r_{u,i} = k \sum_{u' \in U} \text{simil}(u,u') r_{u',i}$$

$$r_{u,i} = \bar{r_u} + k \sum_{u' \in U} \text{simil}(u,u')(r_{u',i} - \bar{r_{u'}})$$

Where is the total number of ratings over all users, pi, j is the predicted rating for user i on item j, and ri, j is the actual rating. The lower than MAE, the better the prediction.

IV. RESULTS AND DISCUSSION

As one of the most successful approaches to building recommender systems, collaborative filtering (CF) uses the known preferences of a group of users to make recommendations or predictions of the unknown preferences for other users. In this paper, we first introduce CF tasks and their main challenges, such as data sparsity, scalability, synonymy, gray sheep, shilling attacks, privacy protection, etc., and their possible solutions. We then present three main categories of CF techniques: memory-based, model-based, and hybrid CF algorithms (that combine CF with other recommendation techniques), with examples for representative algorithms of each category, and analysis of their predictive performance and their ability to address the challenges. From basic techniques to the state-of-the-art, we attempt to present a comprehensive survey for CF techniques, which can be served as a roadmap for research and practice in this area.

The screening variables are divided into non-echocardiography parameters that are often routinely obtained by physicians when dealing with SSc patients, and echocardiographic parameters that are usually available after referring the patient for echocardiography.

Step 1 of the algorithm includes the following non-echocardiography variables current/past telangiectasia's, serum anti-centromere antibodies, serum, serum urate, and right axis deviation. A patient is assigned risk points for each variable, these risk points are added together and the resulting
Step 1 total risk score is used to evaluate whether or not the patient should be referred for echocardiography.

Step 2 includes the variables right atrium area and tricuspid regurgitation velocity, as well as the total risk score from Step1

The patient is assigned risk points for each, and these risk points are added together. The resulting Step 2 total risk score is used to determine whether or not the patient should be referred for right heart catheterization.

The DETECT algorithm for PAH screening in patients is a sensitive, non-invasive screening tool, which minimizes missed diagnoses, identifies even mild disease and optimizes
resource utilization.

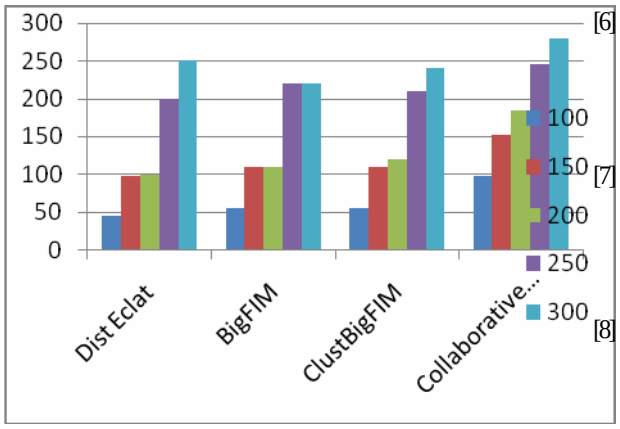

Fig: Accuracy Result

V. CONCLUSION AND FUTURE ENHANCEMENT

We implemented Collaborative filtering algorithm based on MapReduce programming model. K-means clustering algorithm focuses on nearest neighbor concept, frequent item sets of size k are mined using Apriori algorithm and discovered frequent item sets are mined using Eclat algorithm.

ClustBigFIM works on large datasets with increased execution efficiency using pre processing. Experiments are done on transactional datasets, results shown that ClustBigFIM works but on Big Data very efficiently and with
higher speed. We are planning to run ClustBigFIM algorithm on different datasets for further comparative analysis.

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BIOSDIESEL PRODUCTION USING *Pseudomonas fluorescens*

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Abstract
Global warming and scarcity of resources is the major problem around the world. The main reason is increase in population and exploitation of natural resources. One of the major causes is the emission of harmful gases from industries and vehicles. Hence the need of alternative fuel sources is necessary to reduce the damage to the environment. Biodiesel is the best alternative for vehicles. India is major importer in the global oil market and any fluctuation in the price of the oil would affect its economy. Therefore alternative source of fuel is necessary to meet our oil demands. India has large scope of Biodiesel due to the large scale of biomass availability. As per conditions of India only seeds containing non-edible oil can be considered for Biodiesel. Biodiesel production is done by acid catalysed, alkali catalysed and solvent free enzyme activity based methods using plant resources and microorganisms. 5 different oil samples (sunflower, rape seed, peanut oil, soybean oil and animal fat) were used. Out of 5 different samples the sunflower oil showed best result of 87 % of biodiesel production by base catalyzed transesterification method, with 1% KOH and methanol catalyst. Base catalysed method are more effective than acid catalysed method. Vegetable oils are a renewable and potentially inexhaustible source of energy with an energetic content close to diesel

fuel. With recent increases in petroleum prices and uncertainties concerning petroleum availability, there is renewed interest in vegetable oil fuels for diesel engines.

Key words
Biodiesel, transesterification, acid catalysed, base catalysed.

Introduction

Biodiesel refers to a vegetable oil or animal fat based diesel fuel consisting of long-chain alkyl (methyl, propyl or ethyl) esters. Which can be produced by enzymatic action, they are solvent free. Biodiesel is made by chemically reacting lipids (e.g., vegetable oil, animal fat (tallow) with an alcohol producing fatty acid esters. The National Biodiesel Board (USA) also has a technical definition of "biodiesel" as a mono-alkyl ester Abreu FR (2004).

Transesterification of a vegetable oil was conducted as early as 1853 by scientists E. Duffy and J. Patrick, many years before the first diesel engine became functional. Rudolf Diesel's prime model, a single 10 ft (3 m) iron cylinder with a flywheel at its base, ran on its own power for the first time in Augsburg, Germany, on 10 August 1893 running on nothing but peanut oil. In remembrance of this event, 10 August has been declared "International Biodiesel Day" Encinar JM (2002).

The calorific value of biodiesel is about 37.27 MJ/kg. This is 9% lower than regular Number 2 petrodiesel. Variations in biodiesel energy density is more dependent on the feedstock used than the production process. Still these variations are less than for petrodiesel. It has been claimed biodiesel gives better lubricity and more complete combustion thus increasing the engine energy output and partially compensating for the higher energy density of petrodiesel Suntae Kim (2010).

However, the higher percentage of saturated fats in animal fat-based biodiesel provides greater oxidative stability than its plant oil-based counterparts, reducing the risk of sedimentation Wang, L. (2009).

Lipases (triacylglycerol hydrolase, EC 3.1.1.3.) are enzymes that catalyze the hydrolysis of carboxylic ester link in the triacylglycerol molecule to form free fatty acids, di- and monoglycerides and glycerol. *Pseudomonas fluorescens* can produce

certain enzymes such as heat stable lipases and proteases which are involved in the spoiling of milk (Hossian, *et al., 2009)*. The lipase from *Pseudomonas* has also many advantages considering enzyme stability in a water-containing system in the presence of methanol. Kaieda *et al.* (2001) reported that the lipase from *P. cepacia* has much higher methanol resistance.

Materials and methods

Culture used

Pseudomonas fluorescens

Collection of oil sample

The waste vegetable oil sample (sunflower oil, soybean oil, peanut oil, and animal fat) were collected from the restaurant in Dharmapuri.

Methods

Acid catalysed transesterification

In this method 2% sulphuric acid was used as a catalyst

Base catalysed transesterification

1% KOH and 0.5% NaOH were used as a catalyst.

Steps

Preparation of oil and animal fat

The waste cooking oils were collected. All the oil sample were heated to 120°C on hot plate for 45 minutes. This is for the complete evaporation of the H_2O. Then the oil samples were allowed to cool at a room temperature. The animal fat was collected. Sample was heated to 120°C on hot plate for 45 minutes. This is for the complete evaporation of the H_2O. Then the animal fat samples were allowed to cool at a room temperature. Singh ABH (2006).

Catalyst mixture

I. Acid catalyst mixture

A) Waste vegetable oil sample

20 ml of sulphuric acid was mixed with 200ml of methanol and 200ml of ethanol separately. This labelled as catalyst mixture I and II

b) Animal fat

200 gram animal fat 10ml of sulphuric acid was mixed with 50 ml of methanol and of ethanol separately.

II. Base catalyst mixture

a) Animal fat

10g of KOH was mixed with 100ml of methanol & ethanol separately.

5g of NaOH was mixed with 100ml of methanol & ethanol separately.

Waste vegetable oil sample

10g of KOH and 5g of NaOH was mixed with 200ml of methanol and ethanol separately. This labelled as catalyst mixture III, IV, V, VI.

Addition of catalyst mixture to the oil and animal fat

Animal fat

200 gram animal fat 10ml of sulphuric acid was mixed with 50 ml of methanol and of ethanol separately.

Waste vegetable oil sample

The acid catalyst mixture I, II, III, IV was poured separately into the 1 litre of 3 different waste vegetable oil. The base catalyst mixture V & VI was poured separately into the 1 litre of all the oil sample. Nakpong P (2010).

Transesterification

The conversion of waste vegetable oil into Biodiesel by catalyst mixture is called transesterification process. This process was carried out on hot plate with magnetic stirrer. During heating, the mixture was stirred for 20 minutes. Freedman B (1986).

Acid catalysed transesterification oil and animal fat

Animal fat and waste vegetable oil with catalyst mixture I and same oil with catalyst mixture II were heated separately at 70^0C for 5 hours Encinar JM (2002).

Alkali catalysed transesterification oil and animal fat

Animal fat and waste vegetable oil with alkali catalyst mixture III and the same oil with catalyst mixture IV were heated

separately at 60^0C for 1 hour. Animal fat and waste vegetable oil with alkali catalyst mixture V and the same oil with catalyst mixture VI were heated separately at 60^0C for 1 hour.

Dincer I (2000).

Settling

After reaction time, the solution was allowed to cool at the room temperature. The solution was kept for 24 hours. After 24 hours the reaction mixture were separated into two phase by gravity. The bottom layer contain Glycerine. The top layer was Biodiesel. Dillehay TD (2007).

Separation of biodiesel and washing

Separation and washing of biodiesel was performed by the method given by Ayhan Demirbas (2009).

Drying and storage

After washing, the Biodiesel was dried by using Dryer. Then the amount of Biodiesel was measured and stored. Ayhan Demirbas (2005).

Biodiesel production by alkali process:

Enzymatic biodiesel production:

Culture

- *Pseudomonas fluorescens* was obtained from (Annamalai University, Annamalai Nagar, Chidambaram, Tamil Nadu, India.

Characterization

Following tests were performed for characterization. Gram staining, Hanging drop method and Culture methods in nutrient agar plates.

Centrifuge techniques

Procedure:

Pseudomonas fluorescens

- Take nutrient broth 500 ml contains incubate at 24hrs. After 24hrs the microorganism growing well.
- Centrifuge at 5000rpm for 30 minutes. Discard supernatant and save pellet.
- Add 500ml of wash buffer without disturbing pellet and keep it for 1 min.
- Centrifuge at 5000rpm for 30 min and discard the supernatant.
- Air-dry the pellet by inverting it in paper towel for 10 min.

Collection of oil sample

The waste vegetable oil sample rapeseed oil ware collected from the restaurant in Dharmapuri.

Lipases	Oil	Acceptor	Solvent	Time	Yield
Pseudomonas fluorescens	Rape seed Oil	Methanol	solvent -free	24 hours	90%

Preparation of oil

The waste cooking oils were collected. All the oil sample were heated to 120°C on hot plate for 45 minutes. This is for the complete evaporation of the H_2O. Then the oil samples were allowed to cool at a room temperature.

Pellet inoculation in to rapeseed oil

- *Pseudomonas fluorescens* pellet was collected in test tubes.

Transesterification method:

- Rapeseed oil *Pseudomonas fluorescens* pellet (5gram pellet) was mixed with 1000 rpm in magnetic steering 10min.
- Rapeseed oil enzyme activity present. Acceptor in methanol 50ml add in rapeseed oil and lipases enzyme.
- Rapeseed oil+ lipases enzyme + methanol 1000 rpm in magnetic steering 24 hours.
- After two layers separate upper phase and lower phase. Upper phase biodiesel
- Lower phase glycerol. Enzyme method 90% biodiesel production.

Result

Characterization of *Pseudomonas fluorescence*

Gram staining

Pink colour rods were seen which shows that it is Gram negative bacteria

Hanging drop method

Motile bacteria were seen.

Culture characteristics

Morphology on nutrient agar

Small, smooth colonies with circular shape, slightly raised from the surface were observed.

Plating techniques

Screening of lipase activity on plates

Halo zone has been detected on nutrient agar plates which showed that the isolate produced lipase enzyme.

Acid catalysed transesterification

Three different vegetable oils were used with two different alcohols (methanol and ethanol), sulfuric acid was used as the catalyst. Sunflower oil (plate 4&7) with methanol showed the best result of 79% biodiesel production. Soybean oil (plate 5&8) gave 76% result and peanut oil (plate 6&9) gave 60% result. No result was noted with ethanol. Animal fat (plate 10 11) showed only 50% yield. All the results are given in table 1 & 2.

Alkali catalysed transesterification

Two catalysts (NaOH & KOH) with different concentrations were used for all the three vegetable oils. Among this sunflower oil (plate 4&7) with KOH at 1% concentration showed the maximum yield of 87% and at NaOH at 0.5% it gave 82%. Peanut oil (plate 6&9)gave the next yield ratio of 70% with 1% KOH and 68% wit 0.5% NaOH. Whereas, soybean oil (plate 5&8) gave low concentration result of 55% and 51% at 1% KOH and 0.5% NaOH respectively. All the results were seen with methanol while in ethanol no reaction was seen. Animal fat (plate 10&11) showed only 55% yield. The results are given in table 2 & 4.

Discussion

Senoymak *et al., 2016* studied with simultaneous transesterification and esterification of high acid value sunflower oil to fatty acid methyl esters was studied using Amberlyst 46 as a heterogeneous catalyst. The highest fatty acids methyl esters yield of 75.8% was obtained in presence of 6 wt% oleic acid content under reaction conditions of 20 wt% Amberlyst 46 catalyst amount, 6/1 methanol/oil molar ratio, reaction temperature of 130°C, and reaction time of 10 h. Maria *et al.*, obtained best condition with a methanol/oil molar ratio of 20:1, 5.0 % catalyst (w/wt), for 10 h, which resulted in the highest FAME conversion of 94.8 % from soybean oil.

Xioling Miao *et al.*,2009 experimented high effective acidic transesterification catalyzed by trifluoroacetic acid for biodiesel production was studied in the present research. The results showed that the oil could be converted to biodiesel directly by one-step trifluoroacetic acid catalyze process for peanut oil.

Xuejun *et al.*,2008 studied transesterification of soybean oil to biodiesel using CaO as a solid base catalyst. The experimental results showed that a 12:1 molar ratio of methanol to oil, addition of 8% CaO catalyst, 65 °C reaction temperature and 2.03% water content in methanol gave the best results, and the biodiesel yield exceeded 95% at 3 h.

Mushtaq Ahmad *et al.,* 2009 concluded An optimum conversion of peanut oil biodiesel (POB) from triglycerides (TD) was achieved by using 1:6 molar ratio (methanol : oil) at 60°C. Fuel properties of POB were determined and compared with ASTM (American Standard Testing Material).

Effect of catalyst concentrations on biodiesel yields

Before the transesterification was carried out, the acid and alkali catalysts were dissolved in methanol and ethanol separately. It showed that the maximum biodiesel yield was obtained by using potassium hydroxide concentration of 1%. catalyst concentration was strongly dependent upon the oil used. Singh ABH, Thompson J and Van Gerpen J (2006).

Effect of alcohol on biodiesel yields

The transesterification was carried out using methanol and ethanol. Both acid and alkali catalysed transesterification, it showed that the maximum biodiesel yield was obtained by using methanol. Schuchardt U, Sercheli R and Vargas RM (1998).

Effect of temperature on biodiesel yields

The acid and alkali catalysed transesterification was carried out at different temperature in different oil. In acid catalysed method the maximum yield was obtained at 70°C on sunflower oil. In alkali catalysed method the maximum yield was obtained at 60°C on sunflower oil. Freedman B, Butterfield RO and Pryde EH (1986).

Table 1
Acid catalysed transesterification

FEED STOCK	CATALYST	CATALYST CONCENTRATION	ALCOHOL	TEMPERATURE	TIME	RESULT
SUNFLOWER OIL	Sulphuric acid	2%	Methanol	70^{O} C	5 Hours	79%
			Ethanol	70^{O} C	5 Hours	No reaction
SOYBEAN OIL	Sulphuric acid	2%	Methanol	75^{O}C	5 Hours	76%
			Ethanol	75^{O}C	5 Hours	No reaction
PEANUT OIL	Sulphuric acid	2%	Methanol	80^{O}C	5 Hours	60%
			Ethanol	80^{O}C	5 Hours	No reaction

Table 2
Alkali catalysed transesterification

FEED STOCK	Catalyst	Catalyst concentration	Alcohol	Temperature	Time	Result
SUNFLOWER OIL	KOH	1%	Methanol	60^{o}C	1 hour	87%
	NaOH	0.5%	Methanol	60^{o}C	1 hour	82%
	KOH	1%	Ethanol	60^{o}C	1 hour	No reaction
	NaOH	0.5%	Ethanol	60^{o}C	1 hour	No reaction
SOYBEAN OIL	KOH	1%	Methanol	70^{o}C	1 hour	55%
	NaOH	0.5%	Methanol	70^{o}C	1 hour	51%
	KOH	1%	Ethanol	70^{o}C	1 hour	No reaction
	NaOH	0.5%	Ethanol	70^{o}C	1 hour	No reaction
PEANUT OIL	KOH	1%	Methanol	65^{o}C	1 hour	70%
	NaOH	0.5%	Methanol	65^{o}C	1 hour	68%
	KOH	1%	Ethanol	65^{o}C	1 hour	No reaction
	NaOH	0.5%	Ethanol	65^{o}C	1 hour	No reaction

Table 3
Acid catalysed transesterification

FEED STOCK	CATALYST	CATALYST CONCENTRATION	ALCOHOL	TEMPERATURE	TIME	RESULT
ANIMAL FAT	Sulphuric acid	2%	Methanol	70^{O} C	5 Hours	50%
			Ethanol	70^{O} C	5 Hours	50%

Table 4
Alkali catalysed transesterification

FEED STOCK	CATALYST	CATALYST CONCENTRATION	ALCOHOL	TEMPERATURE	TIME	RESULT
ANIMAL FAT	KOH	1%	Methanol	60^{o}C	1 hour	No reaction
	NaOH	0.5%	Methanol	60^{o}C	1 hour	No reaction
	KOH	1%	Ethanol	60^{o}C	1 hour	55%
	NaOH	0.5%	Ethanol	60^{o}C	1 hour	55%

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CODE BASED NEIGHBOUR FINDING PROTOCOLS IN MOBILE NETWORK

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ABSTRACT

In mobile wireless networks, the emerging proximity-based applications have led to the need for highly powerful and energy-efficient neighbor finding protocols. However, current works cannot realize the optimal worst-case latency in the balanced case, and their performances with unbalanced duty cycles can still be improved. In this paper , we investigate asynchronous neighbor finding through a code-based approach, including the balanced and unbalanced cases. We derive the tight worst-case latency bound in the case of symmetric duty cycle. We design a novel class of symmetric patterns called Diff-Codes, which is optimal when the Diff-Code can be extended from a perfect Differenceset.

We further consider the asymmetric case and design ADiff-Codes. To evaluate Diff-Codes, we conduct both simulations and test bed operation. Both simulation and experiment results show that Diff-Codes significantly outperform current neighbor finding protocols in both the median case and worst case. Specifically, in the symmetric case, the maximum worst-case improvement is up to 50%; in both symmetric and unbalanced cases, the median case gain is as high as 30%.

KEYWORDS : ***Node configuration , Distance computation, Node verification, Graph examination, ADIFF-Codes construction, Worst case bund of Discovery Latency***

INTRODUCTION

The transfer of data between neighboring nodes in mobile wireless networks has been increasingly indispensible owing to the rapid gain of diverse demands in people's everyday life. For instance, a college student may want to discuss a math problem with other students in the library using his/her tablet; a video game fan is likely to have a car race on the smart phone with other people in a Starbucks coffee shop. These motivate the appearance of proximity-based applications (e.g., Sony's Vita).Even if central servers can be employed, proximity-based applications potential can be better exploited providing the might of finding nearby mobile devices in one's wireless communication vicinity due to four reasons. First, users can enjoy the convenience of local neighbor finding at any time, while the centralized service may be unavailable due to unexpected reasons. Second, a single neighbor finding protocol can benefit various applications by providing more compliance than the centralized approach. Third, communications between a central server and different mobile nodes may induce problems, such as excessive transmission overheads, congestion, and unexpected reaction delay. Last but not least, searching for nearby mobile devices locally is totally free of charge. Therefore, a distributed neighbor finding protocol for mobile wireless networks is highly needed in practice. Generally, there are three challenges in designing such a neighbor finding protocol.

ENERGY EFFICIENCY

It is known that it takes themobile devices almost a similar amount of energy to transmit and to listen to the wireless media. Due to limited battery power, a mobile node can only periodically turn on its wireless interface with a certain duty cycle. In some applications, nodes may agree on the same duty cycle for fast neighbor discovery.

EFFECTIVENESS

The neighbor discovery protocol should not only guarantee successful discovery between neighboring nodes, but also realize a short latency at the same time.The probabilistic approach (e.g., Birthday Protocol in static sensor networks does not meet this requirement because it fails to provide a worst-case discovery latency bound, and thus leads to confusion between discovery failure and nonexistence of neighbors.

IDEAL

Neighboring nodes can discover each other immediately if they turn to awake simultaneously upon synchronized clocks. Without a central server, the synchronization can be achieved through GPS. Nevertheless, it is too energy-consuming for mobile devices. Thus, how to deal with synchronization is the third challenge to the design of a neighbor discovery protocol.

EXISTING SYSTEM

The neighbor discovery protocols (e.g., Disco U-Connect) cannot realize the optimal Worst-case latency provided in .Furthermore, although Searchlight is approximate to the optimum as in with balanced duty cycle, its performance in the unbalanced case still needs to be improved. In this work, through an in-depth study on the problem of asynchronous neighbor discovery, we derive a tighter lower bound of optimal worst-case latency (or duty cycle). Then, we adopt a code-based formulation of the neighbor discovery problem and design Diff-Codes for the symmetric case, which is optimal when the Diff-Code can be extended from a perfect difference set. Furthermore, by considering the connection between awake periods of two nodes, we extend Diff-Codes to ADiff-Codes to deal with asymmetric neighbor discovery.

PROPOSED SYSTEM

We consider that time is divided into equalized Slots. Owing to reduced energy budget, each node (i.e., a mobile device) performs duty-cycled operations. That is, it sleeps during most slots, while turning awake during a few remaining slots, which are called active slots. To be limited, in a sleeping slot, a node does not send or receive, and consumes slight energy. In contrast, in an active slot, a node transmits beacons at the beginning and the end, respectively, and listens for other nodes' transmissions in between. Each beacon contains the MAC address of its sender. A node discovers its neighbors by decoding the received beacons and extracting the contained MAC addresses. Thus, in general, two neighboring nodes can discover each other when their active slots overlap. Moreover, the neighbor discovery problem involves two cases: the symmetric case, where all the nodes have the same duty cycle, and the asymmetric case, where different duty cycles are adopted.

NODE CONFIGURATION SETTING

The mobile nodes are designed and configured dynamically, designed to employ across the network, the nodes are set according to the X, Y, Z dimension, which the nodes have the direct transmission range to all other nodes.

NODES UNIQUE IDENTITY

All the mobile nodes tend to have a unique id for its identification process, since the mobile nodes communicates with other nodes through its own network id. If any mobile node opted out of the network then the particular node should surrender its network id to the head node.

MESSAGE EXCHANGE PROCESS FOR ROUTE DISCOVERY

This message exchange process i.e. Poll, Reply, Reveal, Report. The protocol executed the, POLL and REPLY messages are first broadcasted by Source and its neighbors, respectively. These messages are anonymous and take advantage of the broadcast nature of the wireless medium, allowing nodes to record reciprocal timing information without disclosing their identities.

DISTANCE COMPUTATION

In order to compute the distance range, after a Poll and Reply message a Reveal message broadcast by the source nodes disclose to S, through secure and authenticated Report messages, their identities as well as the anonymous timing information they collected. The source S uses such data to match timings and identities; then, it uses the timings to perform ToF-based ranging and compute distances between all pairs of communicating nodes in its neighborhood.

NODE POSISTION VERIFICATION

Once Source node has derived such distances, it runs several position verification tests in order to classify each candidate neighbor as either: Verified node, i.e., a node the verifier deems to be at the claimed position or Faulty node, i.e., a node the verifier deems to have announced an incorrect position or Unverifiable node, i.e., a node the verifier cannot prove to be either correct or faulty, due to insufficient information. The position verification are performed by direct symmetric test, cross symmetry test and multi alteration test.

NODE VERIFICATION PROCESS

In this module a proposed work of node verification technique is introduced to detect the adversary nodes in the network. The node verification is done by hash function technique the public key and id of source node generates hash id. In the same way the neighbor nodes generate the hash id, if the source node hash id and neighbor node hash id are same then the nodes are authenticated for data transmission through the minimum distance range discovered path to destination.

GRAPH EXAMINATION

The performance analysis of the existing and proposed work is examined through graphical analysis.

ADIFF-CODES CONSTRUCTION

A series of ADiff-Codes contains several pattern codes. Each of these patterns is feasible in the symmetric case, and any two of them guarantee asymmetric feasibility. By Theorem4, ADiff-Codes series can be constructed on the basis of symmetric Diff-Codes with a similar greedy algorithm. it is intuitive to construct an ADiff-Codes series. The only task is to select a set of numbers (e.g.,), such that any two of them, or the half of any two, are relatively prime. Then, the ADiff-Codes series will contain all the Diff-Codes with corresponding lengths.

WORST-CASEBUND OF DISCOVERY LATENCY

It can be drawn from Theorems that, in the asymmetric case, the worst-case latency bound of ADiff-Codes series is determined by its composing Diff-Codes. Thus, there is not a stable relation between the worst-case bound and the lengths of the composing Diff-Codes.

ROUTING ALGORITHMS

Most QoS routing algorithms represent an extension of existing classic best-effort routing algorithms. Many routing protocols have been developed which support establishing and maintaining multi-hop routes between nodes in MANETs. These algorithms can be classified into two different categories: on-demand (reactive) such as DSR, AODV, and TORA, and table-driven (proactive) such as Destination Sequenced Distance Vector protocol (DSDV). In the on-demand protocols, routes are discovered between a source and a destination only when the need arises to send data.

DSR- DYNAMIC SOURCE ROUTING PROTOCOL

DSR is one of the most well-known routing algorithms for ad hoc wireless networks. It was originally developed by Johnson, Maltz, and Broch. DSR uses source routing, which allows packet routing to be loop free. It increases its efficiency by allowing nodes that are either forwarding route discovery requests or overhearing packets through promiscuous listening mode to cache the routing information for future use. DSR is also on demand, which reduces the bandwidth use especially in situations where the mobility is low.

AODV - THE AD HOC ON-DEMAND DISTANCE-VECTOR PROTOCOL

AODV is another routing algorithm used in ad hoc networks. Unlike DSR, it does not use source routing, but like DSR it is on-demand. In AODV, each node maintains a routing table which is used to store destination and next hop IP addresses as

well as destination sequence numbers. Each entry in the routing table has a destination address, next hop, precursor nodes list, lifetime, and distance to destination.

CONCLUSION

In this paper, we have exposed a systematic study of designing highly effective and energy-efficient neighbor-finding protocols in mobile wireless networks. We have designed Diff-Codes for the case of balanced duty cycle and continued it to ADiff-Codes to deal with the unbalanced case. We have derived a tighter reducedbound for the worst-case latency by exploiting active slot nonalignment. Both our simulation and experiment results have shown that (A) Diff-Codes can achieve significantly better performance in both one-to-one and clique neighbor discovery, compared to state-of-art neighbor discovery protocols. Specifically, in the one-to-one scenario, Diff-Codes can reduce the worst-case latency by up to 50% and achieve a median gain of around 30%; while ADiff-Codes are also 30% better in the median case and outperform existing neighbor discovery protocols in more than 99% simulations and experiments. In the clique scenario, both Diff-Codes and ADiff-Codes have smaller latencies to discover 90% of all the neighbors.

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PROBLEMS OF WOMEN WORKERS IN SPINNING MILLS IN ERODE DISTRICT: A STUDY

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Abstract:

The Father of the Nation, the Mahatma, said, "To call women the weaker sex is a sin; it is man's injustice to women. If by strength is meant brute strength, then indeed woman is less brute than man; if by strength is meant power and then woman is immediately man's superior". In the developing countries the argument that women are burdened with dual responsibility leading to farther insecurity is much more pronounced among poor workers. The gender division of work has not changed among poor households and women continue to take the bulk of the responsibility for unpaid work in the family, especially childcare and domestic work. The fact that women in reality shoulder the responsibility for family subsistence irrespective of what the males may contribute has resulted in women constituting a specially dis-advanged group among the poor.

KEYWORDS **: Women Labours, Spinning Mills, GDP, Social Protection, Labour Legislation.**

Introduction

The problem of finding occupation for the work force is very poignant for a developing country under increasing pressures of population and an unsatisfactory base of employment. In India, it is the most crucial economic issue and must receive precedence in attention in any policy. The aim of women labour policy should be to promote co-operation between workers and employers in order to improve production and working conditions and to promote the interests of the community at large. Today, a woman worker is not viewed as a mere wage earner playing a passive and backseat role in the industrial set up. The worker in modem times has grown to be, within his own rights, a vigilant, active and cooperative partner fully prepared to share the gains by contributing his efforts in the domain of ever increasing industrialization with all its problems and complexities.

(Uma Rani and Jeemol Unni 2004) mention that most of the flexible modes of employment, however, lie beyond the reach of labour legislation and social protection and are characterized by low incomes and high levels of insecurity.

The study of the status of women an women labourers' problems is of recent origin In India and deserves special attention because, in the broader sense, women labour taken as the total labour force is the most abundant resource available in the economy and therefore its sustained and stable growth depends in a very large measure upon the proper utilization of this resource (manpower) and, in the restricted sense, women labour constitutes the poorer and often exploited section of the society and the broader objective of economic development is to raise their standard of life.

That gender equality plays an important role in economic development has long been understood in the literature. Various studies have highlighted how lower female labor force participation or weak entrepreneurial activity drags down economic growth, and that empowering women has significant economic benefits in addition to promoting gender equality (Duflo 2005).

The World Economic Forum's 2014 Global Gender Gap Report finds a positive correlation between gender equality and per capita GDP, the level of competitiveness, and human development indicators. Seminal work by (Goldin 1995) explored the U-shaped relationship between female labor supply and the level of economic development across countries. Initially, when the income level is low and the agricultural sector dominates the economy, women's participation in

the labor force is high, due to the necessity of working to provide for consumption of goods and services.

Women's in textile industry

India has emerged as one of the major garment producing and exporting nations of the world. Garment making is a labour-intensive industry and most of the employment goes to women. It brings foreign exchange to the country through exports.

In India, the readymade garment sector forms an important segment in the broad-based textile industry. The activities of the textile industry include spinning, weaving, and production of cloth and garment items. It accounts for about 4 per cent of GDP, 25 per cent of the industrial production, and 30 per cent of the export earnings of the country. Besides, the industry provides gainful employment to millions of people directly and indirectly.

The development of the readymade garment sector is a recent phenomenon. In 1990, 12 per cent of the total exports of India formed the largest employer in the private sector (Tyagaraj Sharma, 1991). A recent report states that its percentage share in the total exportable items increased from 11.2 per cent in 1988-'89 to 12.6 per cent in 1989-'90 to 13.2 per cent in 1990-'91, and to nearly 15 per cent in 1995-'96 (Hindu-Business Review, 1991).

Statement of the problem

This study helps to analyze the problems of women workers in spinning mills like discrimination of salary between male and female workers, safety in working conditions, medical benefits, sexual harassment by male workers against women workers during night shifts, maternity benefits act, factories act and to bring to the knowledge of law makers to bring improvements in all the workmen's to bring compensation act related to women workers.

Objectives of the study

- To study the annual income of women workers.
- To study the non-financial benefits provided for the women workers.
- To study the discrimination in remuneration between men and women.
- To study the safe working conditions in night shift for women workers.
- To study the action taken against sexual harassment on women workers.

Methodology

The study is descriptive, quantitative and correlative in nature. For this research five spinning mills in Erode District were considered for the study. 20 samples were selected from each spinning mills. The mill names are:

1. Rajalakshmi Textile Processor, Ramanathapuram pudur PO, Erode TK.
2. Sri Balamurugan Textiles Processing Ltd., Punjai Puliyampatti, Sathy TK.
3. Dharanii Cotton Mills (P) Ltd., Alukkuli PO, Gobi TK.
4. Sri Selvakumaran Textiles, Chengappalli Po, Perundurai TK
5. The Soft Tex Processing Mill, PV Palayam PO, Perundurai TK.

Scope of the study

The study under investigation is yet not well aware of by executives and the management and this is becoming a study only in recent years. Hence, this study will helpful to the administrative law makers. To overcome exploitation against women with regards to minimum wages act, factories act relating to women workers.

Limitations of the study

- The study is limited to women workers in Erode District.

- The study is limited to only 5 Spinning mills.
- The study is limited to women workers problems like minimum wages act, factories act, maternity act and sexual harassment against women workers.
- The study was conducted with 100 women workers only.
- Due to time constraints the study is limited to 4 months between

Major findings:

- 72% of the women workers residing from rural areas.
- Majority (48%) of the women workers have educational qualifications of V – VIII standard
- Majority (70%) of the women workers are from Nuclear family
- Majority (51%) of the women workers are from 36 – 45 years age group.
- Majority (81%) of the women workers are married.
- 55% of the women workers have only one child.
- Majority (45%) of the women workers are having yearly income of Rs.75,001 – Rs.1,00,000.
- Majority (51%) of the women workers are satisfied with the yearly income.
- 68% of the women workers say that training is provided in the company.
- Majority (65%) of the women workers are having working experience of Below 5 Years
- Majority 61% of women workers are not receiving any non-financial benefits from their spinning mills.
- Majority 97% of the women workers are enjoying casual leave facilities.
- Majority 91% of the women workers enjoy 12 days casual days per year.
- 91% of the women workers enjoy 12 days casual days per year.
- Majority 82% of the women workers have awareness about the maternity benefits act.
- Majority 87% of the women workers have knowledge about provident fund scheme.
- 96% of the women workers have knowledge about insurance scheme.
- Majority (76%) of the women workers avail medical assistant.
- 46% of the women workers feel there is safe condition in the night shift in their spinning mills.
- Majority (79%) of the women workers feel there is discrimination in the remuneration.
- Majority (36%) of the women workers have travel to mill with their neighbors.
- 19% of the women workers face problems during return to home.
- Majority (54%) of the women workers opined that there is no co-operation with the men and women workers.
- 32% of the women worker is met sexual torture during the working hours.
- Majority (69%) of the women workers have health problems because of work.
- Majority of the women workers have arthritis problem because of work.
- 61% of the women workers have awareness about trade unions.
- Majority 41% of the women workers are highly dissatisfied with their wages.

- ❖ Majority 44% of the women workers are highly dissatisfied with overtime wages.
- ❖ Majority 77% of the women workers are informed that legal action taken against the violence of women workers.
- ❖ Majority 39% of the women workers are highly dissatisfied with the action taken against the violence.
- ❖ 63% of majority respondents said they are managed by male supervisor.
- ❖ Majority 65% of the women workers informed that they don't face any sexual torture given by the male supervisor.
- ❖ There is a difference between number of Childs in their family and their yearly income.
- ❖ There is a difference between yearly income and their experience.
- ❖ There is no difference between experience and health problems because of work.

Suggestion

Based on the findings of the study, the following suggestions have been offered to safeguard the welfare of the working women in the spinning mills.

- ➢ Reforming the industrial laws according to the latest scenario.
- ➢ Eradicting the problems for women working in night shifts and there by making safe in working conditions during night time.
- ➢ In order to avoid the sexual harassment to women a female supervisor appointed for women workers.
- ➢ Enforcing suitable law to avoid discrimination between male workers and women workers.
- ➢ The Inspector of Factories and the Labour Inspector will have make a frequent and surprise visit for the effective and efficient functioning of labour laws and orienting the women workers for their awareness in various women's law.
- ➢ Providing counseling to the women workers and their family members regarding the safe working conditions, the available transport facilities and health care facilities.
- ➢ More women workers are from coming rural areas so that care should be taken for the educational awareness and the latest industrial laws for the empowerment of women workers.
- ➢ Majority of the women workers are married and have only a minimum salary and since the salary of the women are also important for the development of their family. Hence, wages should be increased for women workers
- ➢ As majority of the women workers are having working experience below 5 years an analysis should be made as to why there is staff attrition among women workers and steps should be taken by the company to retain them for longer years.
- ➢ As most of women workers are suffering from arthritis problem because of their work Care should be taken by the company to adopt suitable methods and techniques as to how these problems can be reduced.
- ➢ A considerable numbers of women workers are unaware about the role played by trade unions in their development. Hence, awareness campaign should be carried out to educate the women workers.
- ➢ As a considerable extent of women workers are dissatisfied with the wages and overtime wages, the mills should take steps to increase the wages and overtime wages.
- ➢ As the income is inversely proportional to the experience and the health problem is directly proposal to the experience, the mills should look in to this matter and take positive steps for remedies.
- ➢ Finally, both the government and mills should take positive steps to encourage the women to

work in large numbers as their income plays an important role in the national economic development.

Conclusion

As a majority of women workers are coming from rural areas, they are married having 2 – 3 children, their annual income is below the minimum level, their having health problems because of work, they are also facing gender discrimination for income and sexual harassment. So, the mills, government, the trade unions and the people at large should think about the importance and roles played by working women in the economic development of the family and the country as a whole should take positive steps and enacts safety laws and take an active role to protect the working women community.

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COMPLICITY OF INSIDER TO DISCRIMINATE USING INTRUSION DETECTION THROUGH NETWORK COMMUNICATIONS

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ABSTRACT

Data uncertainty is present in many real-world applications. Hadoop Map Reduce programming model solves the problem of large datasets. In our proposed system Collaborative filtering is a method of making automatic predictions (filtering) by the user nearest SPOT detection method. A user expresses his or her ratings by the content (e.g. Bp, Sugar, Heart attack, etc.) of the system. For higher performance, Map Reduce tries to assign workloads to those servers wherever the information to be processed is hold on. So our process will be more accurate with well-organized prediction especially in medical field accuracy is very important so this proposed system is based on medical dataset. Using Collaborative filtering models the items are calculated from rating metrics to diagnose the problem. And moreover it will be used to predict regarding the problem accuracy for given persons in health care system. To support filters involving relationship between documents. It helps people make choices based on the opinion of other people. And to find articles they will like in the huge streams of available articles cause that data by vast accessing in this domain.

KEYWORDS : Map reduces, ClustBigFim, Collaborative Filtering and SPOT detection

I. INTRODUCTION

Big data is a term for data sets that are so large or complex that traditional processing application is inadequate to deal with them. Challenges include capture, storage, analysis, data curation, search, sharing, transfer, visualization, querying, updating and information privacy. Big data is a broad term for

processing data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, and information privacy. Accuracy in big data may lead to more confident decision making. And better decisions can mean greater operational efficiency, cost reduction and reduced risk.

Big Data are high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation. Big Data represents the Information assets characterized by such a High Volume, Velocity and Variety to require specific Technology and Analytical Methods for its transformation into Value.

The **Three Vs** have been expanded to other complementary characteristics of big data:

- **Volume**: Big data doesn't sample; it just observes and tracks what happens.
- **Velocity**: Big data is often available in real-time.
- **Variety**: Big data draws from text, images, audio, video; plus it completes missing pieces through data.

Big data is mostly generated from social media websites, sensors, devices, video/audio, networks, log files and web, and much of it is generated in real time and on a very large scale. Big data analytics is the process of examining this large amount of different data types, or big data, in an effort to uncover hidden patterns, unknown correlations and other useful information. With rapid innovations, frequent evolutions of technologies and a rapidly growing internet population, systems and enterprises are generating huge amounts of data to the tune of terabytes and even peta bytes of information. Since data is being generated in very huge volumes with great velocity in all multi-structured formats like images, videos, web logs, sensor data, etc. from all different sources, there is a huge demand to efficiently store, process and analyze this large amount of data to make it usable.system is implemented using java programming language.

II. RELATED WORKS

The value of using static code attributes to learn defect predictors has been widely debated. Prior work has explored issue like the merits of "McCabe's versus Halstead versus lines of code counts" for generating defect predictors.

We show here that such debates are irrelevant since how the attributes are used to build predictors is much more important than which particular attributes are used [1].

Mining frequent item sets and association rule mining (ARM) are well-analyzed techniques for revealing attractive correlations among variables in huge datasets. The Apriority algorithm is one of the most broadly used algorithms in ARM, and it collects the item sets that frequently occur in order to discover association rules in massive datasets [2].

Distributed Data Mining (DDM) is the extraction of knowledge from several databases (Data Mining) regardless of their physical location; it allows the partial analyses of the data extracted from individual distributed sites, and then send the different partial results to other sites to form the final result [3].Mining is used later to develop a new large scale classifier. Map Reduce simulator was developed to evaluate the scalability of proposed apriority algorithms on Map Reduce. The developed associative rule mining inherits the,

Map Reduce scalability to huge datasets and to thousands of processing nodes [4].

The enormity and high dimensionality of datasets typically available as input to problem of association rule discovery, makes it an ideal problem for solving on multiple processors in parallel. The primary reasons are the memory and CPU speed limitations faced by single processors. In this paper an Optimized Distributed Association Rule mining algorithm [5].

Adaptability of some core data mining algorithms such as decision trees, discovery of frequent patterns, clustering, We have identified two approaches for carrying out distributed data mining and tried to bring out the advantages of using mobile agents in client server–based approaches, in terms of bandwidth usage and network latency [6].

The theme of business intelligence (BI) is to exchange the data that tends increased value to the enterprise. Rather than collecting the information on what organizations are really doing, it is better to understand how organizations view big data and to what extent they are currently using it to benefit their business [7].

Empirical evaluation shows that these algorithms outperform the known algorithms by factors ranging from three for small problems to more than an order of magnitude for large problems. We also show how the best features of the two proposed algorithms can be combined into a hybrid algorithm, called AprioriHybrid. Scale-up experiments show that AprioriHybrid scales linearly [8].

However, these tools come with their own technical challenges, e.g. balanced data distribution and inter-communication costs. In this paper, we investigate the applicability of FIM techniques on the Map Reduce platform [9].

The value of using static code attributes to learn defect predictors has been widely debated. Prior work has explored issue like the merits of "McCabe's versus

Halstead versus lines of code counts" for generating defect predictors. We show here that such debates are irrelevant since how the attributes are used to build predictors is much more important than which particular attributes are used. Also, contrary to prior pessimism [10].

III. METHODOLOGY

Utilizing String Matching, we coordinate the specific id with secret word then just message exchange to flip side for specific client. Flip side client, login and afterward no one but they can think about the private message from client distinguishing proof. Each client has a different arbitrary key. On the off chance that that gatecrasher not have that different key, at that point that client unfit to see message and send that message. Utilizing MD5 we can end gatecrasher without having key Value that interloper can't see or send message Data.

A message exchange specialist gets mail from either another MTA, a mail accommodation operator or a mail client operator. The transmission subtle elements are indicated by the Simple Mail Transfer Protocol .When a beneficiary post box of a message isn't facilitated locally, the message is handed-off, that is, sent to another MTA. .

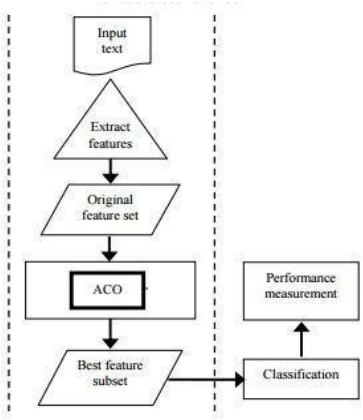
Such a businesslike considers the insider as the key player in imparting information to an assailant, who would then be able to recoup the first information from the go-between portion estimations of the SVM demonstrate. This assault is more reasonable in light of the fact that the aggressor needs just to acquire a couple of information sections as opposed to the whole database from an association to effectively recuperate whatever is left of the private information.

Overview of FIM Algorithm

Types of Plagiarism Detection Algorithm

1. Fingerprinting,
2. String matching,
3. Bag of words,
4. Citation analysis,
5. Stylometry
6. STA

You're going to use String Matching Algorithm.
String Matching



A string is a grouping of characters. In our model we will speak to a string as a 0-listed cluster. So a string S1 ="go" is without a doubt an exhibit list must be check. The quantity of characters of a string is called its length and is meant by |S1|. In the event that we need to reference the character of the string at position j, we will utilize S1[j]. using a stemming filter technique. A new aspect of this algorithm is the selection of a subset of salient features of reduced size. ACOST is the best time consuming algorithm for filter approaches and reduced size.

AACO and ACO enhanced have been implemented using JAVA. The Bees optimization algorithm stirred by the natural foraging behavior of honey bees to find the optimal solution, here this bee Initialize population with random solutions, validate fitness of the population. In this case Ant colony optimization algorithm is an optimal path in a graph. It's search and based on the behavior of ants where it is seeking a path between their colonies. It's a source of food.

The processing time is compared with the ant colony and bee colony optimization. If the first process of ant colony and second process of bee colony is considered,

then the processing time (Milliseconds) of bee colony optimization is less than the ant colony optimization. So the ant colony optimization is better based on algorithm

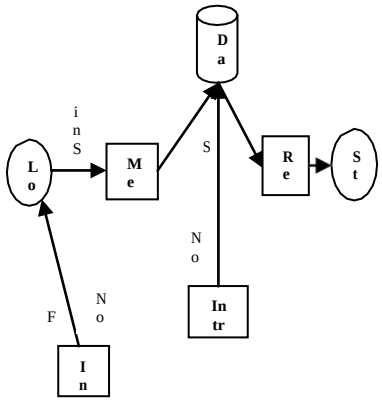
A substring is a remarkable of constants adjacent components of the string, That will mean the substring beginning at k and closure at j of string S by S1 [k...j].

A prefix of a string S is a substring that begins at position 0, and an addition a substring that closures at |S1|-1. A legitimate prefix of a S is a prefix that is distinctive to S. Also, an appropriate postfix of S1 is an addition that is diverse to S. The administrator will speak to string link.

String Matching

String Matching have a high detection rate by which you can easily detect a hacker.

THE PROPOSED ARCHITECTURE



Prototype implementations

Utilizing the netbeans as the outlining instrument and MySQL as the capacity information for backend. By utilizing this we can ready to recover information and plan.

As the outcome we investigate and conquer the current framework and by utilizing the different Algorithm like MD5, SHA1, String Matching to identify the gatecrasher and send the message to the Authorized individual.

We additionally shield the convention and Database from the gatecrasher.

IV MD5 ALGORITHM

The MD5 calculation that used to the hash work that creating a 128-piece hash esteem. Because of MD5 was at first outline to be utilized as a cryptographic hash work, That was found to endure those broad vulnerabilities. MD5 may know the

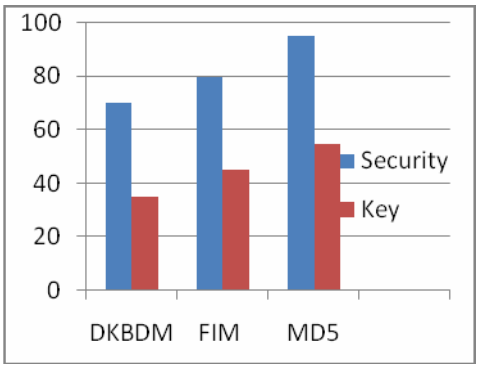
incentive for still be utilized as a checksum to confirm information respectability, however just against accidental debasement.

That the most hash capacities, MD5 is neither encryption nor encoding. That the esteem must be switched by beast drive assault and experiences the estimation of term vulnerabilities nitty gritty in the security segment below.MD5 forms a variable-length message into a settled length yield of 128 bits. The info message is separated into pieces of 512-piece squares (sixteen 32-bit words); the message is cushioned with the goal that its length is distinguishable by 512. The cushioning functions as takes after: initial a solitary piece, 1, to determine the operation of the consistent disapproved is affixed check the estimations of the specific way in which the specific keep up of the record general legitimate to the finish of the message.

This is trailed by the same number of zeros according to the general esteems what the specific information are put away in the fundamental reason for existing are required to bring the length of the string sorts that can be have a consistent message up to 64 bits less a way to determine the specific than a different. String coordinating calculations are an imperative class of string calculations reason for the qualities in which the specific keep up of that can be a standard appropriate keep up of the pass on of the particular to the specific way endeavour to discover a place where one or a few strings (likewise called designs) are found inside a bigger string or content. the string is encoded can influence the achievable string look requesting of the best possible major keep up of the calculations. Specifically if a variable from the content going of qualities in which the space of the character of the general keep up source to the goal as the example to which the width encoding is being used then investigation the different example in which the best possible keep up the having keep up the personality of

the it is moderate get the line and the segment to locate the Nth character. This will to check the positive keep up of the essentially back off a large number of the further developed adjust the positive for the coordinating pursuit calculations. A conceivable arrangement is to inquiry to investigation then the wellspring of the for the grouping of code units rather, yet doing as such may create false to be in the way of the matches unless the encoding is particularly intended to what the best possible to again the stay away from it. String-coordinating is an essential subject along these lines the hunt and the investigation of the different keys to keep up the more extensive area of content preparing. String-coordinating calculations are essential normal information and the examination of the segments utilized as a part of which the adjust the usage of handy to specific way to existing under the vast majority of the maintainers the working frameworks. In addition, they stress programming techniques that fill in as ideal models what the a adjust of the particular kept up of the in different fields of PC. At long last, they are utilized as a part of the worldwide hunt in which the best possible answer for again likewise assume an essential part in hypothetical software engineering by giving to which the course of action testing issues.

In spite of the fact that information are remembered in the among of the answer for away the different ways, content remains the primary shape to keep up and to trade data. This is especially obvious in writing or semantics where information are made out of colossal corpus and lexicons. This applies too to software engineering where a lot of information is put away in direct records. What's more, this is additionally the case, for example, in atomic science on the grounds that organic particles can frequently be approximated as successions of nucleotides or amino acids. Moreover, the amount of accessible information in these fields tends to twofold at regular intervals. This is the motivation behind why calculations ought to be proficient regardless of the possibility that the speed and limit of capacity of PCs increment consistently.



V. CONCLUSION AND FUTURE ENHANCEMENT

We propose an insider plot assault that is an and to keep up the security of the message can be get comprehended in the arrangement risk to most information mining frameworks the primary investigation is to create the fundamental key estimations of the utilizing the arrangement of that work on pieces and examine what number of insiders are assaults what and to dispatch adequate to dispatch this kind of assault. We likewise display two security protecting strategies to safeguard against the assault is get shields the arrangement of the different essential of the dispatch the arrangement of the key age and assault. At last, exploratory outcomes are given to demonstrate the adequacy of the proposed assault that likewise get enhanced the arrangement of the fundamental of the required things to keep up the guard plans. Note that our proposed assault conspire isn't just relevant to the basic assaults are to be get so vertically divided to which the investigation of the essential of the qualities to be in a given information yet in addition material to evenly apportioned information and get settled in the important of the issue of the given discretionarily parceled information as long as each piece esteem is made out of two information and the examination of the vectors and put away in a part network, our proposed technique can switch those portion esteems back to the and control the assaults .The unapproved individual can't be get associated with the age of the first information. Indeed, most information mining to keep up the arrangement of the essential vector of the frameworks working on bit calculation particularly those in a conveyed domain are potential to the given the fundamental different casualties of the proposed assault. Later on work, we will examine whether the protection break manage portrayed in can be casual,

with the end goal that despite the fact that the correct recuperation isn't conceivable, however the assailant can recognize the subspace of the private data (relating to numerous answers for the arrangement of direct conditions). We trust that the proposed insider dangers could prompt a known-plaintext assault, as portrayed in obviously, we intend to address this issue in future work.

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COST-EFFECTIVE AUTHENTIC AND ANONYMOUS DATA SHARING WITH FORWARD SECURITY

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ABSTRACT

Information sharing here it isn't considerably simpler there are many progress of distributed computing systems accessible, and a quality examination on the mutual information gives a bundle of compensation to both the general public and people. Information imparting to countless must consider a few issues, that outcomes is information misfortune and honesty of the information may needs and it including information adequacy, information veracity and security of information administrator. Ring mark is a cheerful possibility to build and unidentified and solid information sharing framework. It enables an information proprietor to anonymously allow his information which can be put into the cloud for capacity or examination reason up till now the expensive testament confirm in the acclimated mutual key correspondences surroundings turns into a blockage for this illumination to be adaptable. This has two advantages. To start with no cloud contributor takes in the achieved apply for rationale. Second, no cloud contributor learns in general computed result apply for. In this way, this prompts the informatics and apply for tact by the network communication protocol. Partition of apply for information into destruction agree to conveying fine-grained destruction of the information to the dissimilar mists. Personality based (ID-based) ring mark, which discards the procedure of accreditation verification, can be utilized as a substitute. The assistant increase the asylum of ID-based ring mark by bless with that confident guard.

KEYWORDS* : *substantiation, data sharing, cloud computing, forward protection, smart grid.

I. INTRODUCTION

The regard and far reaching utilization of "CLOUD" have bring awesome convenience for information sharing and gathered works Not lone the would folks be able to accomplish valuable information more without trouble, offering information to others can give various advantages to our general public and also a delegate illustration, purchasers in Smart Grid can get their vitality use information in a fine-grained way and are urged to share their own vitality use information with others, e.g., by transfer the information to an outsider stage, for example, Microsoft From the together information an arithmetical depiction is framed, and one can contrast their vitality utilization and others.

Data legitimacy in the circumstance of keen lattice, the measurement vitality utilization information would misdirect on the off chance that it is manufactured by foes. While this issue alone can be explained utilizing entrenched cryptographic instruments (e.g., message confirmation code or computerized marks), one may experience extra troubles when different issues are considered, for example, secrecy and proficiency.

Anonymity- Vigor tradition information encase huge thusly of regulars, beginning which one can uncover the amount of faculty in the home, class of animating

utilities utilized as a part of an express case stage, and so on subsequently, it is noteworthy to shield the secrecy of customers in such significance, and any crumple to do as such may escort to the unwillingness from the regulars to impart information to others.

Efficiency- The amount of customer in an information sharing coordination could be colossal (envision a savvy framework with a nation measure), and a practical coordination must trim down the working out and correspondence cost however much as could reasonably be expected. Else it would prompt a misuse of vitality, which negates the objective of brilliant framework.

Availability- The plan is committed to exploring crucial security devices for understanding the three properties we depicted. Note that there are other security issues in an information sharing framework which are similarly imperative, for example, accessibility (benefit is given at an attractive level even under system attack).

Access control - A practical coordination must trim down the working out and correspondence cost however much as could reasonably be expected one may experience extra challenges when different issues are considered and get to control (just qualified clients can have the entrance to the information). In any case, the investigation of those issues is out of the degree.

PROBLEM STATEMENT

Due to the directness, data sharing is always organized in an unfriendly atmosphere and susceptible to a number of security pressures. In the state affairs of **smart grid**, the estimated supremacy practice data would be deceptive if it is bogus by antagonist. Despite the fact that this concern unaided can be decipher using well conventional cryptographic tools. Concealment of vigor usage data contains gigantic in sequence of consumers.

Thus, it is critical to protect the secrecy of consumers in such apply for s, and any failures to do so may lead to the unwillingness from the consumers to share data Efficiency. Data Authenticity whereas this issue alone can be solved using well established cryptographic tools (e.g., message authentication code or digital signatures), Efficiency The quantity of client in a data sharing coordination could be enormous (imagine a smart grid with a country size). Such as anonymity and efficiency Anonymity

Disadvantages

- ✓ Data sharing is organized in a intimidating environment
- ✓ Electric grid is dangerous to well-organized power handling.
- ✓ Usceptible to large number of defense intimidation

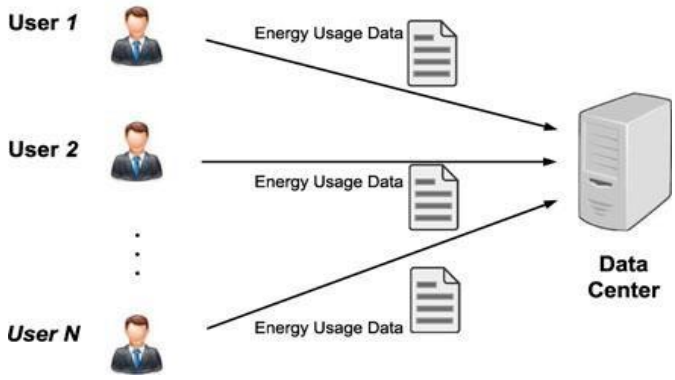

Fig: 1.1 Energy usage data sharing in smart grid.

PROPOSED SYSTEM

Encouraged by the realistic needs in data sharing, projected a new notion called self-assured secure ID-based ring signature. It consents to an ID-based ring signature design to comprise presumptuous sanctuary. It is the foremost in the description to have this trait for ring signature in ID-based scenery. Our design provides categorical secrecy and can be proven self-assured -secure un forgeable in the unsystematic oracle model, assuming RSA problem is hard. Our design is very proficient and does not necessitate any coupling operations.

The size of user undisclosed key is just one integer; while the key modernize process only requires an exponentiation. Believe in design will be very useful in many other practical apply for s, especially to those require user privacy and substantiation, such as ad-hoc network, e-commerce activities and smart grid.

Advantages

- ✓ presuming secure ID-based ring signature to presumptuous security

- ✓ key amend progression only necessitate an exponentiation
- ✓ It is extendable and more than ever apposite for huge data systematic atmosphere.
- ✓ The dimension of a undisclosed key is just a solitary numeral.
- ✓ Key modernize progression merely necessitate an exponentiation.
- ✓ Do not necessitate any coupling in any phase.

Fig 1.2 A result based on identification based ring signature

II. IDENTITY-BASED RING SIGNATURE

The Identity-predicated cryptosystems get rid of the desideratum for legality inspection of the certificates and the desideratum for registering for a certificate after getting the communal solution. These two descriptions are desirable especially for the competence and the reliable spontaneity of the ring signature, where the admin of the ring signature utilize can namelessly indication a message on behalf of assemblage un expectedly recruit users including of the reliable signer. The identity-predicated ring signature and distributed ring signature designs, involve many communal keys, it is especially fascinating to consider an identity-predicated construction which evades the management of many digital certificates.

The foremost that are disseminated ring signature designs for identity-predicated circumstances which do not utilize bilinear pairings.

A principal property of the design is additionally formally presented and analyzed: opening the secrecy of a signature is possible when the reliable creator wants to do so. The security of all the considered design can be formally proved in the unfocused oracle model. The security of ID-predicated signature design is formalized by considering the most vigorous possible kind of assault: select messages/identities attacks.

- ➢ Ring structure construction for data sharing.
- ➢ Get rid of the costly certificate verification.

RING SIGNATURE CONSTRUCTION

An in-depth creative writing analysis has been conducted to recognize interrelated explore works conducted in this area. Abstracts of some of the most relevant explore works are included below

Step 1: Setup a ring

The vigor data owner (say, Bob) foremost set of connections a ring through prefer a group of users. This segment merely requirements the unrestricted uniqueness information of ring associate, such as suburban address, and Bob does not could do with the group effort (or the consent) from any ring members.

Step 2: Upload data with ring signature

Bob (Admin) uploads his delicate data of electronic practice, collectively with a ring signature and the uniqueness information of every one ring associate.

Step 3: Verify the ring signature

Substantiate the ring signature, one be able to be confident that the data is without a doubt prearranged elsewhere by a compelling dweller (from the ring members) at the same time as cannot stature out which the dweller is. For this reason the ambiguity of the data established secure contributor is making certain mutually with data legitimacy.

ELIMINATES CERTIFICATE VERIFICATION

In the intervening time, the corroboration is well-organized which does not engross whichever certificate verification. The foremost ID-based ring signature scheme be proposed in 2002 which can be

established secure in the arbitrary oracle model. Two manufacture in the standard replica be anticipated in first assembly nevertheless was exposed to be inconsistent even as the second assembly is only established secure in a pathetic replica, that is to say, discriminatory ID model.

The first ID-based ring signature scheme declare to be safe and sound in the standard replica The new recommend innovative notion entitle onward protected ID-based ring signature, which is an indispensable apparatus for edifice cost-effective reliable and unspecified data sharing structure: designed for the foremost point in time, make available recognized designation on ahead secure ID-based ring signatures; in attendance a tangible plan of forward secure ID based ring signature.

The preceding ID-based ring signature schemes in the prose encompass the belongings of ahead protection, and the foremost to afford this attribute demonstrate the sanctuary of the proposition proposal in the unsystematic oracle replica, less than the regular RSA Hypothesis and accomplishment is realistic.

- It is in ID-based setting. The taking away of the precious certificate verification progression compose it level and more than ever appropriate for huge data methodical atmosphere.
- The magnitude of a undisclosed key is immediately one numeral.
- Key brings up to date development only necessitate an exponentiation.
- Do not necessitate in the least coupling in any phase.
- ID-based ring signature is supplementary have a preference in the situation in the midst of a hefty numeral of client such as vigor data sharing in smart grid.

III. IMPLEMENTATION

The scheme is devoted to investigating fundamental security tools for realizing the three properties described. Note that there are other security issues in a data sharing system which are equally important, such as availability of the user and cloud service is provided at an acceptable level even under network attacks and access control only eligible users can have the access to the data Reproduction of desires endorse to receive manifold grades from one man oeuvre act upon in divergent clouds and to weigh against them within the own hypothesis. The first ID-based ring signature scheme declare to be safe and sound in the standard replica The new recommend innovative notion entitle onward protected ID-based ring signature, which is an indispensable apparatus for edifice cost-effective reliable and unspecified data sharing structure designed for the foremost point in time, make available recognized designation on ahead secure ID-based ring signatures in attendance a tangible plan of forward secure ID based ring signature.

SUBSTANTIATION

Evidence is the act of substantiate the exactitude of an trait of a single subdivision of data (datum) or creature. In dissimilarity with credentials which refers to the act of circumstances or otherwise signifying allege purportedly attesting to a person or thing's identity, corroboration is the process of essentially confirming that identity. It valour involve bear out the uniqueness of a individual by legalize their distinctiveness permit, verifying the validity of a Website with a digital certificate, tracing the age of an artifact by carbon dating, or ensuring that product is what its packaging and labeling claim.

DATA SHARING

Data sharing is the observation of construction data worn for erudite survey obtainable to other investigators. Reproduction has a long times gone by in knowledge. Many endowment charity, tradition, and commutation setting have policies on the subject of data sharing because lucidity and ingenuousness are measured by many to be part of the systematic manner. A number of funding agencies and science journals require authors of peer-reviewed credentials to divide up any enhancement in turn (raw data, statistical methods or source code) necessary to understand, develop or reproduce published explore. An enormous treaty of systematic discovery is not focus to data sharing requirements, and many of these policies have liberal exceptions. In the absence of any binding requirement, data sharing is at the discretion of the scientists themselves. In accumulation, in convinced circumstances bureau and institution prohibit or severely limit data sharing to protect proprietary

interests, national sanctuary, and theme/tolerant/fatality discretion. Data sharing may also be restricted to protect institutions and scientists from use of data for political purposes.

CLOUD COMPUTING BY PART OF NETWORK COMMUNICATION PROTOCOL

Cloud computing is a work out term or figure of speech that progress in the belatedly 2000s, pedestal on convenience and spending of computer wherewithal. Cloud work out engage position assemblage of isolated servers and software networks that consent to dissimilar breed of data foundation be uploading for factual instance handing out to generate computing results without the need to store processed data on the cloud. Data and methods may be applied from an author years after communication via the network protocol. In sort to persuade data sharing and avert the thrashing or bribery of data, a numeral of endowment charity and periodical reputable policy on data annals.

IDENTITY-BASED RING SIGNATURE

Private or hybrid Identity-based (ID-based) cryptosystem, introduced by Shamir get rid of the need for verifying the validity of communal key certificates, the management of which is both time and cost consuming. In an ID based cryptosystem, the communal key of each user is easily computable from a string corresponding to this user's communally known identity (e.g., an email address, a residential address, etc.). A private key generator (PKG) then computes private keys from its master undisclosed for users. This property avoids the need of certificates (which are necessary in traditional communal -key infrastructure) and associates an implicit communal key (user identity) to each user within the system.

In instruct to bear out an ID-based signature, dissimilar as of the long-established communal key based signature; one accomplishes not need to corroborate the credential foremost. The elimination of the certificate validation makes the whole verification process more proficient , which will lead to a significant save in communication and computation once a outsized quantity of punter are complicated (declare vigour usage data sharing in smart-grid).

SELF-ASSURED SECURITY

In cryptography, confident mystery (FS; otherwise called idealize confident mystery, or PFS) is belongings of key-understanding decorum confirm that a meeting key imitative from an arrangement of persisting key can't be mollification on the off chance that one of the persevering keys is concession later on. However substandard quality, the "gathering" can be characterized by the enemy voluntarily because of the suddenness property of ring mark: The foe just needs to incorporate the persevering client in the "gathering" of his decision. As an outcome, the divulgence of one client's undisclosed key transform into all some time ago obtain ring marks irrational (if that client is single of the ring partner), since one can't recognize whether a ring mark is created preceding the key introduction or by which client. Consequently, confident security is an essential necessity that a major information sharing framework must meet. Else, it will prompt an enormous exercise in futility and asset. Though there are a grouping of plans of confident - secure computerized marks including together confident security ring marks spin out to be knotty. To the extent the creators know, there are just two confident secure ring mark outlines. In any case, they are both in the conventional common key setting where signature confirmation includes costly authentication check for each ring part. This is far beneath palatable if the span of the ring is immense, for example, the clients of a Smart Grid.

IV CONCLUSION AND FUTURE ENHANCEMENTS

Enthused by the obvious reality asks for in information sharing, we foreseen another recognition called Self-guaranteed Secure ID-Based Ring Signature. It permits an ID-based ring mark configuration to have confident security. It is the first in the story to have this characteristic for ring mark in ID-based view. Our plan gives unlimited mystery and can be demonstrated confident secure enforceable in the irregular prophet show, accepting RSA issue is hard. Our plan is exceptionally master and does not require any blending operations. The extent of client shrouded key is only one numeral; while the key alter game-plan just require an advocate. Our contemporary plan depends on the unsystematic prophet hypothesis to hold up under out its security. In future work, the same dataset is utilized and in view of different sorts

of stemming procedure, and would like to decide better execution by the arrangement of order run the show. Consider a provably secure plan with indistinguishable highlights in the standard model from an open issue and our future investigates work.

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FUZZY INFERENCE SYSTEM BASED DISEASE CLASSIFICATION OF PADDY LEAVES

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ABSTRACT

Due to increasing demand in agriculture and Economy, farmers are need to increase their productivity of crops at the same time they also earn more profit in their cultivation. This is very difficult for small farmers because there are so many challenges for farmers like canopy, water management, weed control, weather conditions, field conditions and less rainfall. This may be achieved by precision agriculture. In this paper we proposed a fuzzy inference system based classification for early disease identification, and we used image processing techniques as an automatic tool which will help to reduce the communication gap between the small farmers and agriculture officiers. In the proposed system we identify the disease on rice plant leaf images using L*a*b color feature based segmentation. The segmented images were classified into healthy, affected and highly affeteced classes with the help of Fuzzy Inference system.

Keywords : ***Plant leaf disease classification; Fuzzy Inference System; L*a*b; Paddy Diseases***

I. INTRODUCTION

India is a land of small farmers, today our farmers facing so many challenges on their cultivation because of unconditional weather and high population, the food production need is high but the farm land is lesser than our needings.so farmers are having the pressure of increasing their yield with few acres, due to this they use chemical pesticides in huge amount on their crop this may cause very serious problem on people health .These problems could be overcome by "smart farming".

In this work we used rice plant images as a input to classify diseases because rice is a primary food source of India. Rice may lose its quantity and quality when rice plant is attacked by different disease. Therefore, it is a top priority to find effective methods to reduce the level of their infestation in the paddy fields. Leaves are the best health indicator of a plant so we use the green intensity values and the number of brown spots as a parameters to identify the diseases on rice crop.

II. LITERATURE REVIEW

In Past few years the image processing techniques widely used for agriculture in various problems like disease classification, weed management, fruit garding, pest identification **.**

Xuebing Bai e.t al(2017)[9] segmented a cucumber leaf spot from its complex background by using fuzzy clustering based neighborhood segmentation with high accuracy.

K. Muthukannan and Dr. P. latha classified a unhealthy and healthy portion of a tomato leaves using fuzzy inference system with 95% of accuracy

R. Pydipati et. al identified diseases on citrus fruits using color feature segmentation,they use various color features and CCM with the accuracy rate of 96.3%

Libo Liu, Guomin Zho,Extracted rice leaf disease using back probagation neural network model with high accuracy.

III. PROPOSED METHODOLGY

In this work more than 100 images were used for classification these images were collected from

internet dark spot diseased images and healthy leaf images were used . Those images had various size and formats that are resized and used for further process.

A. Image Preprocessing

The images were collected from the internet were resized into [300x 300] size uniformly to increase the performance of algorithm and reduce the complexity. In many agriculture research papers they suggested the above mentioned size.

B. Color Feature Extraction

Color is perceived by humans as a combination of tristimuli *R* (red), *G* (green), and *B* (blue) which are usually called three primary colors. From *R,G, B* representation, we can derive other kinds of color representations (spaces) by using either linear or nonlinear transformations. Several color spaces, such as *RGB, HSI,CIE ¸*u*v** are utilized in color image segmentation, but none of them can dominate the others for all kinds of color images. Selecting the best color space still is one of the difficulties in color image segmentation[1].

1. RGB

Red, green, and blue components can be represented by the brightness values of the scene obtained through three separate fillters (red, green, and blue fillters) based on the following equations[1].

$$R = \int_{\lambda} E(\lambda) S_R(\lambda)\, d\lambda,$$

$$G = \int_{\lambda} E(\lambda) S_G(\lambda)\, d\lambda,$$

$$B = \int_{\lambda} E(\lambda) S_B(\lambda)\, d\lambda,$$

2. HSV

HSV is an another color space which represented as cylindrical geometry with hue, their angular dimension, starting at the red primary at 0°, passing through the green primary at 120° and the blue primary at 240°, and then wrapping back to red at 360°. [11]

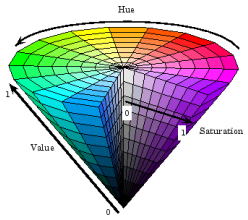

Figure-1 HSV

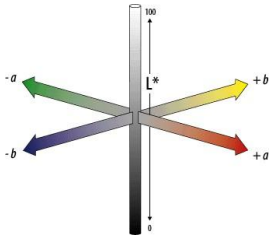

*Figure 2:L*a*b*

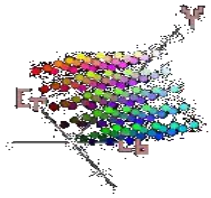

Figure 3:Ycbcr

*3. L*a*b*

This color space is originally defined by CAE and specified by the International Commission on Illumination In this color space, we have one channel is for Luminance (Lightness) and other two color channels are a and b known as chromaticity layers[1]. The a* layer indicates where the color falls along the red green axis, and b* layer indicates where the color falls along the blue-yellow axis. a* negative values indicate green while positive values indicate magenta; and b* negative values indicate blue and positive values indicate yellow.[11].

4. Ycbcr

The YCbCr color space is widely used for digital video. In this format, luminance information is stored as a single component (Y), and chrominance information is stored as two color-difference components (Cb and Cr). Cb represents the difference between the blue component and a reference value. Cr represents the difference between the red component and a reference value.

In this work RGB Paddy leaf images were converted into the above referenced color spaces with the help of MATLAB16 *from those color spaces L*a*b color space chosen for color thresholding.*

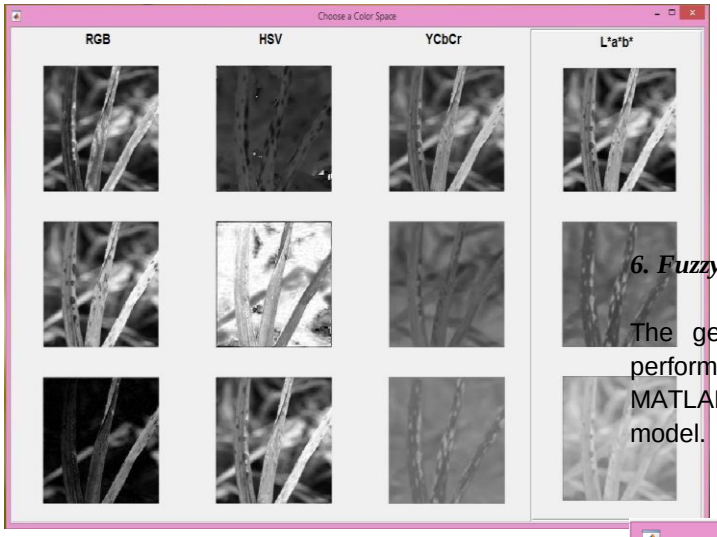

Figure 4:Color spaces on MATLAB

5. Color Thresholding

On the selected L*a*b space the channel second (a) has red and green intensity values .so it is selected for segmenting brown spots because leaves are green dominant, spots may have a combination of red and green intensity. On color histogram of *a space minimum and maximum value stetted for separating brown spots.

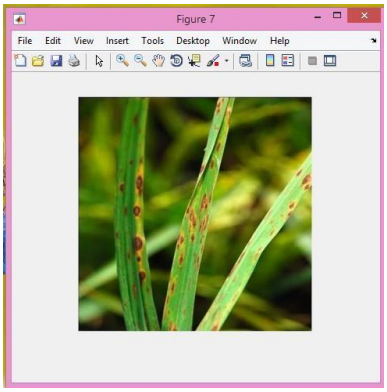

Figure 5:Brown spot disease image

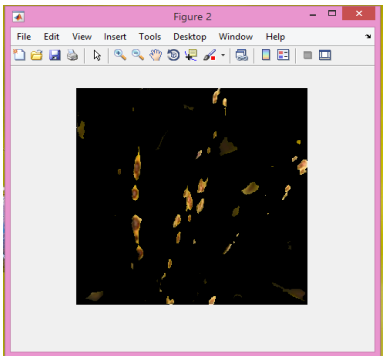

Figure 6: Segmented image

6. Fuzzy Inference System

The general operation of the fuzzy system is performed based on the following process.on MATLAB FIS editor supported for building fuzzy model.

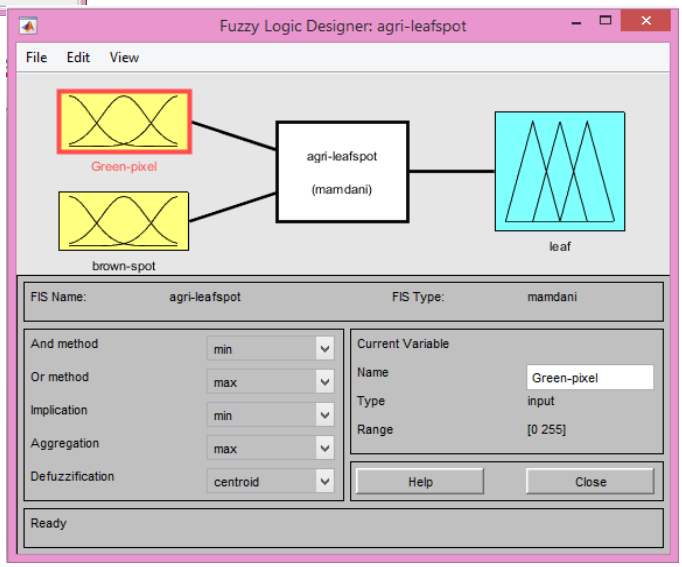

Figure 7:Fuzzy model-agri leafspot

a) Fuzzification

The process that allows converting a numeric value (or crisp value) into a fuzzy input is called fuzzification. There are two ways to do fuzzification:where there is no noise. Triangular membership function was used to fuzzify input and output functions.

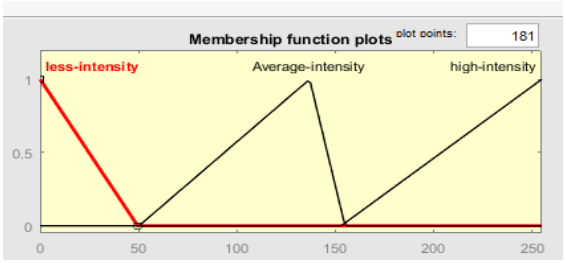

Figure 8:Membership values of Green intensity input

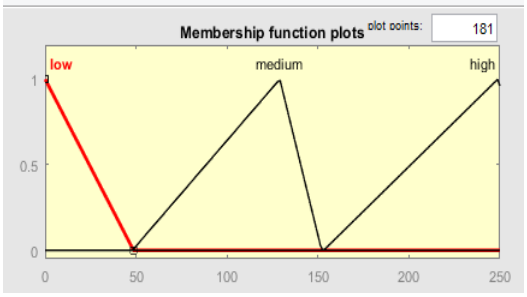

Figure 9:Membership values of Brown spots input

In this work the paddy leaf were fuzzified into three categories 1.Healthy leaf 2.Affected leaf and 3.Highly affected leaf for this fuzzification green intensity values and no of spots are used as decision parameter The .Mean value of healthy green leaf and affected leaf were calculated. Brown spot labels of normal and highly affected leaf images also Counted.

b) Fuzzy Rules

Fuzzy If-Then Rules Fuzzy sets and fuzzy sets operations are the subjects and verbs of fuzzy logic [8]. If-Then rule statements are used to formulate the conditional statements that comprise fuzzy logic.A single fuzzy If-Then rule assumes the form.

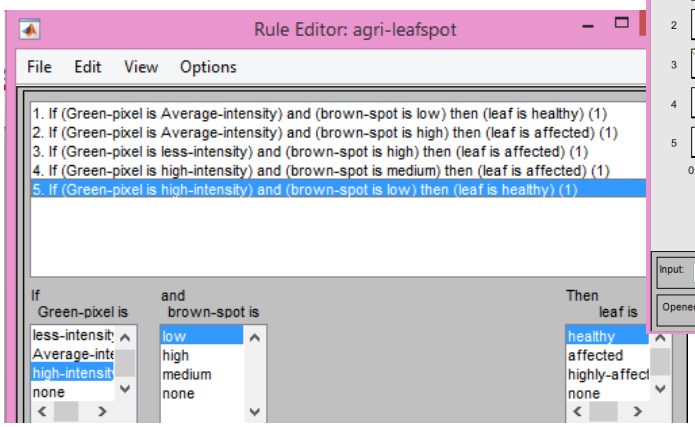

Figure 10:Fuzzy rules for agri-leaf spot identification

c) *Defuzzification*

Defuzzification is the reverse process of fuzzification.Mathematically, the defuzzification of a fuzzy set is the process of conversion of a fuzzy quantity into a crisp valuei.e. rounding off from its location in the unit hypercube to the nearest vertex. This may be necessary if we wish to output a number to the user.Centroid method is used for deffuzification.

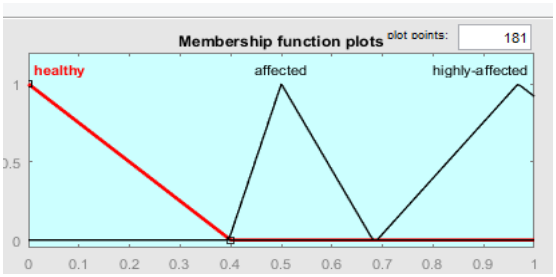

Figure 11:Membership values of leaf output

IV RESULTS

We develop agri leaf spot fuzzy model(mamdani) with two input variables namely green pixel and brown spots for input and output functions triangular membership function was used. Green pixel intensity of healthy images will be high but affected leaf green intensity will be lesser because affected portions dominated by red intensity.

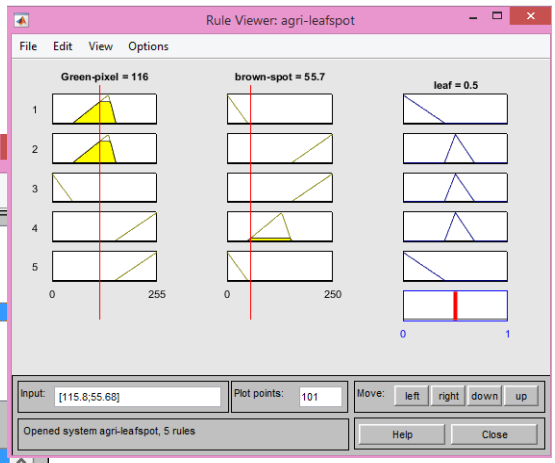

Figure 12: Affected leaf Result

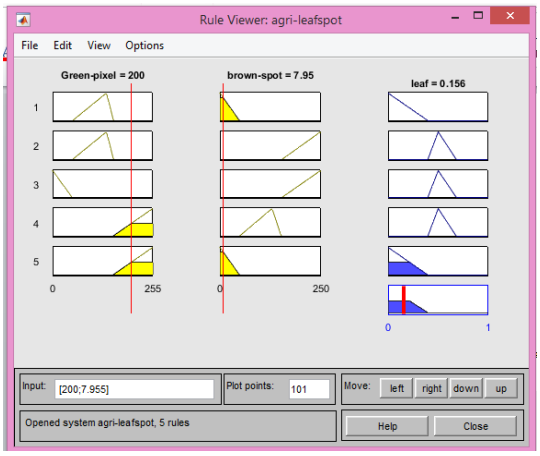

Figure 13: Healthy leaf Result

Above Result green pixel range is 116 and no of spots is 55.7 then the leaf categorized as affected. and the crisp output value is 0.5.

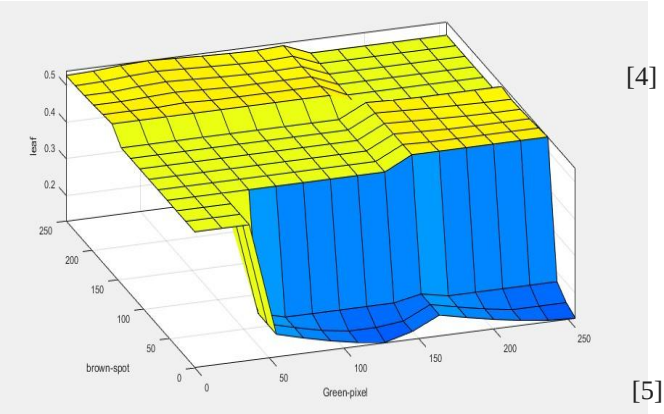

Figure 14:Results of Healthy and Affected leaves

V. CONCLUSION

The main contribution of this paper was proposed an approach fuzzy rule-based system using color features for the classification disease affected plant leaf image region. The proposed method FIS using color features were clearly classified the region such as healthy, slightly affected disease portion and highly affected disease portion of the plant leaf image Classifying the unhealthy region is the main purpose of the proposed approach. The experimental results indicate the proposed approach can detect the leaf diseases region with little computational effort. The extension of this work will focus on developing methodology for better segmentation and classification using neuro-fuzzy system.

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EFFECT OF *G. FASCICULATUM* INOCULATION ON THE PER CENT ROOT COLONIZATION AND SPORE NUMBER IN THE RHIZOSPHERE SOILS OF BRINJAL (*SOLANUM MELONGENA* L.) AS INFLUENCED BY ORGANIC AMENDMENTS

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Abstract

A pot culture experiment was conducted to study the inoculation effect of AM fungi (*Glomus fasciculatum*) on the per cent root colonization and AM fungal spore number in the rhizosphere soils of brinjal (*Solanum melongena* L.) var PLR 2 as influenced by organic amendments. Among the inoculated treatments, the maximum per cent root infection was observed in farm yard manure (91.13) followed by biogas slurry (84.75), urban compost (82.05) and pressmud (72.15). The maximum root infection was recorded in farm yard manure (81.17) and the minimum in control (40.84) which was closely followed by pressmud (43.23). Under *Glomus fasciculatum* inoculated conditions, the application of farm yard manure registered the highest spore number (128 spores 100 g^{-1} soil) followed by biogas slurry (118 spores 100 g^{-1} soil), pressmud (115 spores 100 g^{-1} soil) and urban compost (110 spores 100g^{-1} soil). The uninoculated plants showed the maximum spore population was obtained in farm yard manure applied brinjal (106 spores 100 g^{-1} soil) and the minimum in urban compost applied brinjal(80 spores 100 g^{-1} soil)

KEYWORDS: **AM Fungi; organic amendments; *Glomus fasciculatum; Solanum melongena.***

Introduction

Eggplant (*Solanum melongena*) or aubergine, is a species of nightshade, grown for its edible fruit. Eggplant is the common name in North America, Australia and New Zealand, but British English uses the French word aubergine. It is known in South Asia and South Africa as brinjal. Brinjal has an important nutritional value due to its composition, which includes minerals like potassium, calcium, sodium and iron (Mohamed *et al*., 2003; Raigon *et al*., 2008) as well as dietary fibre (Sanchez-Castillo *et al*.,1999). It contains 92.7 per cent water, 4 per cent carbohydrates, 1.4 per cent protein, 1.3 per cent fiber, 0.3 per cent fats, 0.3 per cent minerals and vitamin A in a negligible quantity (Tindall, 1978). The varities of *Solanum melongena* L. show a wide range of fruit shapes and colours, ranging from oval or egg –shaped to long club shaped and form white, yellow, green through degrees of purples pigmentation to almost black .

India is the second largest producer of brinjal in the world next to China and produces 14MT from an area of 711.3ha (NHB, 2016). In India, the farmers use huge more amount of chemical fertilizers for crop production especially for vegetables, thus the soil which leads to soil pollution and ground water contamination, ultimately causing health hazards (Giannakoula *et al.*, 2010). In order to avoid the environmental pollution especially soil pollution, most of the scientists are recommending the use of biofertilizers along with inorganic fertilizers in a sustainable manner to maintain the soil health and also the productivity, diseases and increasing the yield (Lekberg and Koids, 2005).

Dwivedi, 2015 explained that the AM fungi varies with host ranges. Though they are ubiquitous, they showed that the every taxonomic group of plants and the list of species not infected is probably far of microorganisms like bacteria, fungi and actinomycetes which may help in increasing crop productivity by way of helping in solubilization of insoluble phosphorus, stimulating plant growth by providing hormones, vitamins and other growth promoting substances.

MATERIALS AND METHODS

Isolation and screening of AM fungi

Brinjal rhizosphere soil sample were collected from twenty different locations in Cuddalore District of Tamilnadu. Four different AM fungal species *viz., Glomus fasciculatum, Glomus mosseae, Gigaspora margarita* and *Acaulospora laevis* were isolated, characterized and identified under stereo zoom microscope according to Gerdemann and Trappe.

Isolated AM fungi are screened for the efficiency by root colonization percentage, AM fungal spore numbers in soil. All the four AM fungal species colonized the roots of brinjal. However, the degree of root infection and colonization varied considerably between them. The response of brinjal in terms of root colonization by AM fungi was the highest with *Glomus fasciculatum* followed by *Glomus mosseae, Gigaspora margarita* and *Acaulospora laevis* in soils.

Treatment details:

T_1 Soil

T_2 Pressmud

T_3 Pressmud + *G. fasciculatum*

T_4 Biogas slurry

T_5 Biogas slurry + *G. fasciculatum*

T_6 Farm yard manure

T_7 Farm yard manure + *G. fasciculatum*

T_8 Urban compost

T_9 Urban compost + *G. fasciculatum.*

AM fungal colonization in brinjal roots

The percentage mycorrhizal colonization of the roots was determined by the method of Phillips and Hayman (1970).The roots were washed gently in tap water. The washed roots were cut into one cm length and then immersed in 10 per cent KOH solution for clearing the host cytoplasm and nuclei for stain penetration. Then it was autoclaved at 15 lbs/sq. inch pressure for about 20 minutes. Then the root bits were taken out and washed with tap water for about three times or until no brown colour appeared in the rinsed water. The roots were acidified with two per cent hydrochloric acid (3-4 minutes) for proper staining. The acid was poured off without rinsing with water and root bits were stained with 0.05 per cent tryphan blue in lactophenol solution and boiled for 10 minutes. These root bits were examined under compound microscope. Fifty root segments in each replication were used to determine AM fungal colonization per cent.

Survey for the occurrence of AM fungal spores
Survey for the occurrence of AM fungal spores

AM fungal spore population was estimated by wet sieving and decanting method of Gerdemann and Nicolson (1963). One hundred gram of rhizosphere soil samples were taken from the rhizosphere of brinjal mixed thoroughly in one litre of tap water to settle down the heavier particles for few seconds. The suspension was decanted through a coarse soil-sieve (500-800 µm sieve) to remove large pieces of organic matter. The liquid which passed through the sieve was collected separately and stirred to resuspend all particles. The suspension was decanted through a sieve fine enough to retain desired spores (38-250 µm sieve). The material retained on the sieve was washed with a stream of water to ensure that all colloidal materials were passed through the sieve. The small amount of remaining debris were transferred to a shallow layer of water in a petridish and examined under a Stereo zoom microscope. The spore numbers from each soil sample were counted and expressed per 100 g of soil.

Results

The per cent root infection by inoculated brinjal, increased with the advancement age of the plants. The maximum root infection AM fungal spore and PSB population were observed at 130 DAT. The effect of inoculation of *G. fasciculatum* on the per cent root colonization and AM fungal spore population was recorded at 130 DATand the results are presented in Table 1.

Among the inoculated treatments, the maximum per cent root infection was observed in farm yard

manure (91.13) followed by biogas slurry (84.75), urban compost (82.05) and pressmud (72.15).

The maximum root infection was recorded in farm yard manure (81.17) and the minimum in control (40.84) which was closely followed by pressmud (43.23). Under *Glomus fasciculatum* inoculated conditions, the application of farm yard manure registered the highest spore number (128 spores 100 g^{-1}soil) followed by biogas slurry (118 spores 100 g^{-1}soil), pressmud (115 spores 100 g^{-1}soil) and urban compost (110 spores 100g^{-1}soil).

The uninoculated plants showed the maximum spore population was obtained in farm yard manure applied brinjal (106 spores 100 g^{-1}soil) and the minimum in urban compost applied brinjal (80 spores 100 g^{-1} soil).

Table 1: Effect of *G. fasciculatum* inoculation on the per cent root colonization and spore number in the rhizosphere soils of brinjal as influenced by organic amendments

S.No.	Treatments	AMF root colonization (%)	AMF spore numbers (100 g^{-1}soil)
1.	Soil	40.84	68
2.	Pressmud	43.33	99
3.	Pressmud + *G. fasciculatum*	72.15	115
4.	Biogas slurry	52.12	92
5.	Biogas slurry+ *G. fasciculatum*	84.75	118
6.	Farm yard manure	81.13	106
7.	Farm yard manure + *G. fasciculatum*	91.13	128
8.	Urban compost	49.40	80
9.	Urban compost+ *G. fasciculatum*	82.05	110

Discussion

AM fungi inoculation and urban refuse compost application increased the plant growth (Trinidade *et al.*, 1996). Inoculation of *G. fasciculatum* with FYM and BSS (biogas spent slurry) showed more pronounced effect on AM fungal proliferation (Naik Gaonkar and Sreenivasa, 1994). *G. fasciculatum* inoculation in brinjal increased the plant height, dry weight, plant P content, root colonization and spore population by the application of biogas slurry, FYM and urban compost. The main function of AM fungi is to enhance the nutrient uptake thereby increased the growth parameters of brinjal crop (Srilakshmi, 1998)

In the present study, inoculation of *G. fasciculatum* in brinjal increased the root colonization per cent and spore number in all the organic amendments. The highest root colonization per cent and spore number was observed in FYM + *G. fasciculatum* inoculated treatments followed by biogas slurry + *G. fasciculatum.* Organic manure amended with sand: soil medium significantly increased the root colonization per cent and AM fungal spore in the rhizosphere soil isolated from bamboo and teak than the sand: soil medium (Verma and Arya, 2004).

Reports indicated that organic amendments influenced the proliferation of VAM fungi (Harinikumar and Bagyaraj, 1989; Geethakumari *et al.*, 1990) studied the effect of mycorrhizal inoculation in the presence or absence of organic amendments on the performance of finger millet.They found that number of tillers, number of leaves, length of ear head, ear head weight, grain yield,straw yield and ‘P’were highest in mycorrhizal plants compared to non-mycorrhizal plants with given organic amendments alone.

G. *fasciculatum* inoculation and the addition of biogas slurry increased the establishment of all inoculated organisms in the rhizosphere and found to stimulate rhizosphere microflora in cotton (Prathiba *et al.*, 1994). Pot culture experiments were conducted to study the effect of different organic amendments *viz.*, groundnut cake, farm yard manure, neem cake, biogas spent slurry and pressmud on *G. fascicu1atum* - sugarcane interaction. In general, all the organic amendments showed positive influence on the proliferation of AM fungi. Among the different organic

amendments, farm yard manure stimulated the highest per cent of root colonization and spore number followed by biogas spent slurry, groundnut cake, pressmud and neem cake (Jancy Sathiyavathi, 2002).

Four organic amendments leaf compost, vegetable compost poultry manure and sewage sludge applied at four dose (40, 80, 100 and 120 t ha^{-1}) were evaluated on their herbage *Cymbopogen winterianus* yield, essential oil content and inoculum potential native arbuscular-mycorrhizal fungi on three varieties. Results indicated in the leaf compost amended plots in all the 3 varieties and the type and dose of various organic amendments also significantly influenced the indigenous AM fungal infective propagule in soil (Tanu *et al*., 2004).

Conclusion:

In the present study the maximum root colnization percentage and spore numbers were recorded by the using organic amendments. The maximum root infection was recorded in farm yard manure (81.17) and the minimum in control (40.84) which was closely followed by pressmud (43.23). The study reveled that application of farm yard manure and *G. fasciculatum* at recommended dosage are safe mycorrhizal development than other the organic amendments.

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Effect of AM Fungi and PSB inoculation on the per cent root colonization, AM fungal spore number and PSB population in the rhizosphere soils of brinjal (*Solanum melongena* L.)

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Abstract :

A pot culture experiment was conducted to study the inoculation effect of AM fungi (*Glomus fasciculatum*) and Phosphobacteria (*Bacillus megaterium)* on the per cent root colonization, AM fungal spore number and Phosphobacterial population in the rhizosphere soils of brinjal (*Solanum melongena* L.) var PLR 2 at different levels of phosphorus. In all the treatments, *G. fasciculatum* and *Bacillus megaterium* inoculated brinjal recorded higher values than uninoculated plants. The root colonization percentage (84.52) and AM fungal spore number (129 100 g^{-1} soil) in the rhizosphere soil were the highest in 75 per cent phosphorous level followed by 50 per cent phosphorous (71.28, 124.00 spores 100 g^{-1} soil) respectively. The highest number of phosphobacterial population (11.33×10^{-6} cfu) was recorded by the co-inoculation of *G. fasciculatum* and *B.megaterium* at 75per cent phosphorous levels.

Keywords: AM Fungi; phosphobacteria; *Solanum melongena* L.

Introduction

Eggplant (*Solanum melongena*) or aubergine, is a species of nightshade, grown for its edible fruit. Eggplant is the common name in North America, Australia and New Zealand, but British english uses the French word aubergine. It is known in South Asia and South Africa as brinjal. Brinjal has an important nutritional value due to its composition, which includes minerals like potassium, calcium, sodium and iron (Mohamed *et al*., 2003; Raigon *et al*., 2008) as well as dietary fibre (Sanchez-Castillo *et al*., 1999). It contains 92.7 per cent water, 4 per cent carbohydrates, 1.4 per cent protein, 1.3 per cent fiber, 0.3 per cent fats, 0.3 per cent minerals and vitamin A in a negligible quantity (Tindall, 1978). The varities of *Solanum melongena* L.show a wide range of fruit shapes and colours, ranging from oval or egg –shaped to long club shaped and form white , yellow, green through degrees of purples pigmentation to almost black .

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Dwivedi, 2015 explained that the AM fungi varies with host ranges. Though they are ubiquitous, they showed that the every taxonomic group of plants and the list of species not infected is probably far of microorganisms like bacteria, fungi and actinomycetes which may help in increasing crop productivity by way of helping in solubilization of insoluble phosphorus, stimulating plant growth by providing hormones, vitamins and other growth promoting substances. Phosphate Solubilizing Bacteria (PSB) are capable of hydrolyzing organic and inorganic phosphorus from insoluble compounds and PSB produce phosphatase like phytase that hydrolyse organic forms of phosphate compounds efficiently (Zehra, 2010).

MATERIALS AND METHODS

Isolation and screening of AM fungi

Brinjal rhizosphere soil sample were collected from twenty different locations in Cuddalore District of Tamilnadu. Four different AM fungal species *viz.*, *Glomus fasciculatum, Glomus mosseae, Gigaspora margarita* and *Acaulospora laevis* were isolated, characterized and identified under stereo zoom microscope according to Gerdemann and Trappe, 1974.

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Enumeration of Phosphobacteria

Phosphobacteria enumerated from the rhizosphere soils of different brinjal grown fields by serial dilution plate technique (Sperber, 1958). The soil samples were serially diluted upto 10^{-4} dilution. One ml of aliquots of last dilution was plated in using Sperber's hydroxy apatite medium. The plates were incubated upto two weeks at 28±2°C. The bacterial colonies showing clear zone were enumerated and expressed as cfu g^{-1} of oven dry soil.

Treatment details:

T_1 - Control

T_2 -RDF

T_3 - *Glomus fasciculatum*

T_4 - *Bacillus megaterium*

T_5 -75% of P+ *G. fasciculatum*

T_6-75% of P + *B. megaterium*

T_7-75% of P + *G. fasciculatum* + *B. megaterium*

T_8 -50 % of P+ *G. fasciculatum*

T_9-50 % of P + *B. megaterium*

T_{10}-50 % of P + *G. fasciculatum* + *B. megaterium*

AM fungal colonization in brinjal roots

The percentage mycorrhizal colonization of the roots was determined by the method of Phillips and Hayman (1970).The roots were washed gently in tap water. The washed roots were cut into one cm length and then immersed in 10 per cent KOH solution for clearing the host cytoplasm and nuclei for stain penetration. Then it was autoclaved at 15 lbs/sq. inch pressure for about 20 minutes. Then the root bits were taken out and washed with tap water for about three times or until no brown colour appeared in the rinsed water. The roots were acidified with two per cent hydrochloric acid (3-4 minutes) for proper staining. The acid was poured off without rinsing with water and root bits were stained with 0.05 per cent tryphan blue in lactophenol solution and boiled for 10 minutes. These root bits were examined under compound microscope. Fifty root segments in each replication were used to determine AM fungal colonization per cent.

Survey for the occurrence of AM fungal spores
Survey for the occurrence of AM fungal spores

AM fungal spore population was estimated by wet sieving and decanting method of Gerdemann and Nicolson (1963). One hundred gram of rhizosphere soil samples were taken from the rhizosphere of brinjal mixed thoroughly in one litre of tap water to settle down the heavier particles for few seconds. The suspension was decanted through a coarse soil-sieve (500-800 µm sieve) to remove large pieces of organic matter. The liquid which passed through the sieve was collected separately and stirred to resuspend all particles. The suspension was decanted through a sieve fine enough to retain desired spores (38-250 µm sieve). The material retained on the sieve was washed with a stream of water to ensure that all colloidal materials were passed through the sieve. The small amount of remaining debris were transferred to a shallow layer of water in a petridish and examined under a Stereo zoom microscope. The spore numbers from each soil sample were counted and expressed per 100 g of soil.

Results

The per cent root infection by inoculated brinjal, increased with the advancement age of the plants. The maximum root infection AM fungal spore and PSB population were observed at 130 DAT. The effect of inoculation of *G. fasciculatum* on the per cent root colonization and AM fungal spore population was recorded at 130 DAT and the results are presented in Table 1. The AM fungal root colonization and AM fungal spore number increased with increase in plant age. In all the treatments, *G. fasciculatum* and *Bacillus megaterium* inoculated brinjal recorded higher values than uninoculated plants. The root colonization percentage (84.52) and AM fungal spore number (129 100 g^{-1} soil) in the rhizosphere soil were the highest in75 per cent phosphorous level followed by 50 per cent phosphorous (71.28, 124.00spores 100 g^{-1} soil) respectively.From this study, it was observed that addition of low levels of phosphorous increased the mycorrhizal colonization and AM fungal spore number in PLR 2 brinjal.

Table 1: Co-inoculation effect of *G. fasciculatum* and *B. megaterium* on the per cent root colonization and spore population in the rhizosphere soil of brinjal at different levels of phosphorus

S.No.	Treatments		AMF root colonization(%)			AMF spore numbers (100 g^{-1} soil)		
			45 DAT	90 DAT	130 DAT	45 DAT	90 DAT	130 DAT
1.	T_1	Control	25.01	44.71	52.53	48	58	70
2.	T_2	RDF	25.98	48.91	56.79	72	77	98
3.	T_3	*Glomus fasciculatum*	25.93	47.56	56.68	69	74	92
4.	T_4	*Bacillus megaterium*	25.53	46.75	56.13	62	71	91
5.	T_5	75% of P+ *G. fasciculatum*	30.23	51.31	62.17	92	110	122
6.	T_6	75% of P + *B. megaterium*	29.17	51.17	69.00	70	101	94
7.	T_7	75% of P + *G. fasciculatum* + *B. megaterium*	33.18	55.32	84.52	106	113	129
8.	T_8	50% of P + *G. fasciculatum*	27.18	49.17	70.20	81	90	124
9.	T_9	50% of P + *B. megaterium*	26.28	48.17	60.12	77	82	93
10.	T_{10}	50% of P + *G. fasciculatum* + *B. megaterium*	27.75	50.49	71.28	83	97	124

The rhizosphere soil phosphobacterial population was estimated on 45, 90 and 130 DAT and the results are presented in Table 2. In all the periods, inoculation of *G. fasciculatum* and *B.megaterium* both single and combined at different phosphorous levels increased the rhizosphere soil phosphobacterial population compared to uninoculated control.Among the single inoculation, *B.megaterium* inoculated treatment, recorded more number of phosphobacterial population (10.33× 106cfu) followed by *G. fasciculatum* (8.00× 106cfu). The highest number of phosphobacterial population (9.66× 106cfu) was recorded by the co-inoculation of *G. fasciculatum* and *B.megaterium* at 75per cent phosphorous levels. Addition of low levels of phosphorous with co-inoculation of *G. fasciculatum* and *B.megaterium* highly enhanced the survival of phosphate solubilizers in the rhizosphere soils of brinjal.

Table 2: Co-inoculation effect of *G. fasciculatum* and *B.megaterium* on phosphobacterial population in the rhizosphere soil of brinjal at different levels of phosphorus

S.No.	Treatments		Phosphobacterial population ($\times 10^6$ cfu g^{-1} oven dry soil)		
			45 DAT	90 DAT	130 DAT
1.	T_1	Control	5.33	6.66	7.33
2.	T_2	RDF	6.33	7.33	8.00
3.	T_3	*Glomus fasciculatum*	6.66	8.00	8.01
4	T_4	*Bacillus megaterium*	9.00	10.33	9.33
5.	T_5	75% of P+ *G. fasciculatum*	9.66	10.00	8.33
6.	T_6	75% of P + *B. megaterium*	9.33	9.66	11.00
7.	T_7	75% of P + *G. fasciculatum* + *B. megaterium*	8.66	10.66	11.33
8.	T_8	50% of P + *G. fasciculatum*	8.00	8.66	9.50
9.	T_9	50% of P + *B. megaterium*	8.66	9.00	10.20
10.	T_{10}	50% of P + *G. fasciculatum* + *B. megaterium*	9.00	10.00	10.66

Discussion

The synergistic effect *of G. fasciculatum* and phosphobacterium *Pseudomonas striata* on the growth, nutrient uptake and total dry weight of neem seedlings were found to be superior over individual inoculation at different stages of neem seedlings (Karthikeyan, 1994; Karthikeyan *et al.,* 1995). Interaction of phosphate solubilizing bacteria and AM fungi on tomato growth, soil microbial activity and production of organic acids in non-sterile soil containing hydroxyapatite and glucose was examined. The P concentration was greatest in all treatments and total N and P uptake in plants were higher in treated ones compared to control (Kim *et al.,* 1998).

A tripartite symbiosis between *Azospirillum* sp., *Pseudomonas straita* and

G. fasciculatum enhanced the growth of rhizosphere microflora of cotton (Prathiba *et al.,* 1994). Similar interaction occurred between P solubilization and AM fungi (Gurumurthy and Sreenivasa, 2000).The rhizosphere population of

AM fungi and phosphate solubilizing bacteria were determined from soil samples collected from mixed and monocropped coffee and cardamom. The population of phosphorous solubilizing bacteria and fungi was higher in coffee and cardamom, respectively in both cropping systems (Korikanthimathi *et al.,* 2000).

The interaction between mineral phosphate solubilizing bacterium and AM fungus and *Azotobacter* at different levels of fertilizers increases the mycorrhizal colonization, when all the three biofertilizers were added at 75 per cent of the recommended dose of NPK on sweet basil *Ocimum basilicum* (Ajimuddin, 2002) Interactive efficacy of phosphobacteria *Bacillus megaterium* and arbuscular mycorrhizae inoculated at different soil types were analysed. Among the treatments dual inoculation of AM fungi and phosphobacteria gave the most satisfactory outcome in *Amaranthus tritis* (Rajashri and Sivapriya, 2004)

Conclusion:

In the present study the maximum root colonization percentage and spore numbers and Phosphobacterial population in the rhizosphere soils of brinjal at different levels of phosphorus. The maximum root colonization percentage and spore numbers was recorded in treatment 7(84.52),

(129) and the minimum in control (52.53), (70) which was closely followed by treatment 10 (71.28), (124). The maximum Phosphobacterial population in treatment 7 (11.33) and the minimum in control (7.33) which was closely followed by treatment 6 (11.00)

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PROPHYLATIC STUDIES OF EDIBLE MUSHROOMS

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Abstract
In this multi developmental era there are many advanced developments in natural medicine. Since mushrooms are abundant in nature, cost effective and easy to be cultivated they are a promising solution for variety of health problems in the near future. The medicinal properties of these mushrooms can be exploited to formulate drugs for several diseases caused by antibiotic resistant pathogenic microorganisms. Hence, the current study is done to prove the antibacterial activity of edible mushrooms (*Ganoderma lucidum*, *Pleurotus florida*, *Calocybe indica*) against bacterial (*Escherichia coli*, *Klebsiella pneumonia*, *Staphylococcus aureus*) isolates. From the experiment conducted it was concluded that the various extracts of mushroom species *Ganoderma lucidum*, *Pleurotus florida* and *Calocybe indica* possessed antimicrobial property against antibiotic resistant human pathogens similar to that of the commercially available antibiotics. Three different mushroom species were selected. They were processed. Mushroom extracts were prepared with different solvents by standard procedure. The antimicrobial activity of mushroom against selected pathogens were screened. Among the 3 species *Ganoderma* showed very good antimicrobial property.

Key words:
Edible mushroom, *Ganoderma*, Antimicrobial, Phytochemical, MRSA.

Introduction

Basidiomycetous fungi (mushrooms) can be defined as "macrofungi" with distinctive fruiting bodies that are large enough to be seen by the naked eye and to be picked by hand. It is estimated that there are approximately 1.5 million species of mushrooms in the world of which approximately 70,000 species are described. About 10,000 of the known species belong to the macro fungi of which about 5,000 species are edible and over 1,800 species are considered to have medicinal properties (Chang, 1995).

Mushrooms can be grown on logs placed outdoors in stacks or piles, as has been done for hundreds of years. Here, tree logs are inoculated with spawn, then allowed to grow as they would in wild conditions. Fruiting, or pinning, is triggered by seasonal changes, or by briefly soaking the logs in cool water (Lindequist, U.,*et al*., 2005).

Edible fungi under the order Agaricales and the families Agaricaceae, Polyporaceae and Pluteaceae have been under commercial cultivation. Though, about 2000 species have been reported to be edible, the techniques of artificial cultivation are available only for a dozen of species of which about four are being cultivated on a commercial scale (Balasubramanya R H, 2006-2007).

Mushroom is a source of all nutrients and essential amino acids. Mushrooms also contain some unsaturated fatty acids; provide several of the vitamin B, and vitamin D. Some even contain significant vitamin C, as well as the minerals potassium, phosphorus, calcium, and magnesium. They are rich in proteins. Most of the mushrooms have very low starch content and can form an ideal food for diabetic patients (Park, 2001).

Ganoderma is a genus of polypore mushrooms which grow on wood and include about 80 species, many from tropical regions. Because of their extensive use in traditional Asian medicines, and their potential in bioremediation, they are a very important genus economically. *Ganoderma* can be differentiated from other polypores because they have a double walled basidiospore (Kirk PM.,*et al*., 2008).

Calocybe indica is rich in carbohydrates (49.2g),

protein (21.6g), lipids (9.6g), fat (4.96g) , fiber (13.2g), ash (12.8g) , and is abundant with essential amino acids. It is an excellent source of thiamine, riboflavin, nicotinic acid, pyridoxine, biotin, and ascorbic acid. Among all mushroom *Calocybe indica* was found to contain large amount of carbohydrates (Nuhu Alam.,*et al*.,2007).

Mushrooms need anti-bacterial and antifungal compounds to survive in their natural environment. Therefore, antimicrobial compounds could be isolated from many mushroom species and could be of benefit for humans. As a matter of fact, macro fungi produce a large number of metabolites that show antibacterial, antifungal, antiviral, antitumor, hypoglycemic, antiallergic, immunomodulating, anti-inflammatory, hypo-lipidemic, and hepatoprotective activity (Turkoglu A, *et,al* 2007).

Methicillin-resistant *Staphylococcus aureus* (MRSA) has become a major problem in many countries, resulting in significant morbidity, mortality, and health care costs. The origins of antibiotic-resistant *Staphylococcus aureus* trace back to 1941 when penicillin was first introduced. These strains produced penicillinases, enzymes that can break down and deactivate penicillin. In the ensuing decade, these penicillin-resistant *Staphylococcus aureus* strains became highly prevalent in hospitals (Barber M., 1961).

Escherichia coli are seen as Gram negative rods, with no particular cell arrangement in microscope. Then, either MacConkey agar or EMB agar (or both) are inoculated with the patient sample. On MacConkey agar, deep red colonies are produced as the organism is lactose-positive, and fermentation of this sugar will cause the medium's pH to drop, leading to darkening of the medium. Growth on Levine EMB agar produces black colonies with greenish-black metallic sheen (Madigan MT, Martinko JM., 2006).

Klebsiella pneumoniae is a Gram-negative, non-motile, encapsulated, lactose fermenting, facultative anaerobic, rod shaped bacterium found in the normal flora of the mouth, skin, and intestines. It is clinically the most important member of the *Klebsiella* genus of Enterobacteriaceae. It naturally occurs in the soil, and about 30% of strains can fix nitrogen in anaerobic condition (Ryan KJ.2004).

Materials and Methods

COLLECTION OF CULTURE SAMPLES

Staphylococcus aureus, Escherichia coli and *Klebsiella pneumonia* samples were collected from Government Hospital, Dharmapuri.

SOLVENTS USED

Acetone, Ethanol, Methanol was used to extract the compounds from the mushroom *Ganoderma lucidum, Pleurotus florida* and *Calocybe indica* respectively.

METHODS

POWDERED MUSHROOM

500g of *Ganoderma lucidum,* 1000g of *Pleurotus florida,*1000g of *Calocybe indica* mushroom was taken separately in a china dish and air dried for 5 days. The moisture content of the mushroom was low as it is a woody mushroom. The dried mushroom was powdered. The powdered material had a net weight of 50g, 110g and 150g respectively.

PREPARATION OF MUSHROOM EXTRACTS

100 ml of acetone was added to 10g of powdered *Ganoderma lucidum,* 100 ml of ethanol was added to 10g of powdered *Pleurotus florida,* 100 ml of methanol was added to 10g of powdered *Calocybe indica* in 3 conical flask and was kept in rotary shaker for 3 days. The extract was then filtered using Whatman No 1 filter paper and stored in vial for future use.

PHYTOCHEMICAL STUDIES (Modi *et al., 2014)*

In the present study the alcoholic extract of the mushroom species like *Ganoderma lucidum, Pleurotus florida* and *Calocybe indica* were used for the following phytochemical analysis. The tests were made by standard procedures. They are: 1. Carbohydrates (Molisch's), 2. Glycosides (Benedict's, Fehling's, Barford's and Borntrager's), 3. Alkaloids (Maayer's, Dragondroff's, Hager's, Wagner's), 4. Phytosterol (Libermann Buchard, Salkowski, Spot, Saponification), 5. Gums and Mucilages (90% Alcohol), 6. Saponins (Foam), 7. Proteins and Free Amino Acids (Biuret, Ninhydrin, Xanthoprotein), 8. Phenolic compounds (Ferric chloride) and 9. Flavanoids (NaOH).

PREPARATION OF DISCS CONTAINING MUSHROOM EXTRACT

The empty discs were impregnated with 50µl (2 mg/disc) of acetone extracts of *Ganoderma lucidum*, ethanol extracts of *Pleurotus florida* and methanol extracts of *Calocybe indica* separately and dried in the oven. This process was repeated until the disc was completely saturated with the extract. The disc was then used to study the antimicrobial activity of mushroom extracts against human pathogens.

ISOLATION, CULTURE AND STUDY OF BACTERIA

The culture obtained from hospital were confirmed by performing the following tests**:** Microscopic observation were done by performing Gram staining, Motility by Hanging drop method. The culture tests were performed by plating the cultures in Nutrient Agar, Blood Agar, Mannitol Salt Agar, Mac Conkey Agar. For Antibacterial susceptibility testing Muller Hinton Agar was used. Kirby – Bauer Disc Diffusion method was used for Antibacterial susceptibility testing. The zone of inhibition by three different mushrooms were measured and compared with standard antibiotics. Antibiotics used were Ampicillin, Amikacin, Chloramphenicol, Gentamycin, Ofloxacin, Vancomycin, Methicillin and Penicillin-G.

Results and discussion

Phytochemical analysis

The results of phytochemical analysis are given in table 1.

Mushrooms are very poor in lipid and very rich in protein, ash, fibre, and minerals. They could be very useful for vegetarians and contain some essential amino acids which are found in only animal proteins (Verma *et al*., 1987a). According to the data obtained from this research, *Pleurotus florida*, *Calocybe indica* , *Ganoderma lucidum*are very good iron sources. They could also be very useful for those who suffer from anaemia since they are very poor in lipid and reduce the cholesterol, HDL, LDL, VLDL in animals (Bobek *et al*., 1991).

Isolation and characterization of MRSA

Violet colour, cocci shaped cells were seen which indicates it is Gram-positive bacteria. They were non motile. Small, smooth, yellow colonies with circular shape, slightly raised from the surface were observed in nutrient agar. *Staphylococcus aureus* were observed as large, round, golden-yellow colonies, often with hemolysis, when grown on blood agar plates. Yellow colour colonies were produced in Mannitol salt agar.

Isolation and characterization of *Escherichia coli*

Pink colour rod shaped cells were seen that indicates it is Gram negative. They were motile. Small, smooth colonies with circular shape, slightly raised from the surface were observed in nutrient agar plates. *Escherichia coli* were observed as pure white colonies on blood agar. Deep red colour, rough colonies were observed in MacConkey agar as the organism is lactose-positive.

Isolation and characterization of *Klebsiella pneumoniae*

Pink colour rod shaped cells were seen in Gram staining. They were non motile. Small, mucoid, yellow colonies with circular shape, slightly raised from the surface were observed in Nutrient agar plates. *Klebsiella pneumoniae* were observed as large, glistening mucoid colonies in blood agar. Deep red color, mucoid colonies were observed in MacConkey agar.

Antimicrobial activity of *Ganoderma lucidum*

Ganoderma lucidum enjoys special veneration in East Asia, where it has been used as a medicinal mushroom in traditional Chinese medicine for more than 2,000 years, making it one of the oldest mushrooms known to have been used medicinally. Because of lingzhi's presumed health benefits and apparent absence of side-effects, it has attained a reputation in the East as the ultimate herbal substance. This is the reason; *Ganoderma* is called as the, King of Mushrooms'.

Antimicrobial activity of *Pleurotus florida*

Pleurotus florida is one of the commonly used edible mushroom as it is low in calories and fat, rich in amino acids, protein, vitamin, chitin and minerals. They also contain high amounts of amino butyric acid, ornithine, ascorbic acid, thiamine, niacin, riboflavin and folic acid.

Antimicrobial activity of *Calocybe indica*

Calocybe indica is rich in cabohydrates, protein, lipids, fats, fibre, ash and is abundant with essential amino acids. It has no reported antimicrobial activity. The extracts from *Calocybe indica* was resistant to the human pathogens studied when compared to the commercially available antibiotics

Table 1.

Phytochemical analysis of acetone extracts of *Ganoderma lucidum,* ethanol extracts of *Pleurotus florida* and methanol extracts of *Calocybe indica*

S.No	EXPERIMENT	*Ganoderma*	*Pleurotus*	*Calocybe*
1	**Carbohydrates**			
	Molisch test	+	+	+
2	**Glycosides**			
	Fehling's test	+	-	+
	Benediet's test	+	+	+
	Barford's test	+	-	+
	Borntrager's Test	+	+	+
3	**Tests for Alkaloids**			
	Mayer's Reagent	+	+	-
	Dragandroff's Reagent	+	-	-
	Hager's Regent	+	-	-
	Wagner's Reagent	+	+	-
4	**TEST FOR PHYTOSTEROL**			
	Libermann Burchard test	-	+	-
	Salkowski test	-	-	+
	Saponification Test	-	-	-
5	**TEST FOR GUMS AND MUCILAGES**			
	Preparation with 90% alcohol	+	+	+
6	**TEST FOR SAPONINS**			
	Foam test	+	-	-
7	**TESTS FOR PROTEINS AND FREE AMINO ACIDS**			
	Biuret test	+	+	+
	Ninhydrin test	+	-	+
	Xanthoprotein test	+	+	-
8	**Tests for Phenolic compounds**			
	Ferric chloride test	+	+	-
9	**TEST FOR FLAVONOIDS**			
	With aqueous NaOH Solution	+	-	-

Table 2

Antibiogram report

Anti microbial activity of Acetone extracts of *Ganoderma lucidum*

Organisms	Antibiotics Used	Zone of inhibition (mm)	Report
Escherichia coli	Ampicillin	22	S
	Amikacin	24	S
	Chloramphenicol	No zone	R
	GAE	21	S
	Gentamicin	10	R
	Ofloxacin	24	S
	Vancomycin	19	S
	GAE	22	S
Staphylococcus aureus	Ampicillin	22	S
	Amikacin	8	R
	Chloramphenicol	24	S
	GAE	19	S
	Gentamicin	13	R
	Ofloxacin	No zone	R
	Vancomycin	No zone	R
	GAE	23	S
Klebsiella pneumonia	Ampicillin	24	S
	Amikacin	5	R
	Chloramphenicol	6	R
	GAE	17	S
	Gentamicin	16	R
	Ofloxacin	11	R
	Vancomycin	8	R
	GAE	18	S

GAE- *Ganoderma lucidum* Acetone Extract R-Resistant S-Sensitive

Table 3

Anti microbial activity of Ethanol extracts of *Pleurotus florida*

Organisms	Antibiotics Used	Zone of inhibition (mm)	Report
Escherichia coli	Chloramphenicol	24	S
	Gentamicin	18	S
	Ofloxacin	No zone	R
	PEE	14	R
	Vancomycin	No zone	R
	Methicillin	14	R
	Penicillin-G	22	S
	PEE	16	S
Staphylococcus aureus	Chloramphenicol	6	S
	Gentamicin	8	R
	Ofloxacin	23	S
	PEE	12	R
	Vancomycin	22	S
	Methicillin	23	S
	Penicillin-G	6	R
	PEE	12	R
Klebsiella pneumonia	Chloramphenicol	24	S
	Vancomycin	17	S
	Ofloxacin	No zone	R
	PEE	6	R
	Vancomycin	18	S
	Methicillin	22	S
	Penicillin-G	12	R
	PEE	8	R

PEE- *Pleurotus florida* Ethanol Extract R-Resistant S-Sensitive

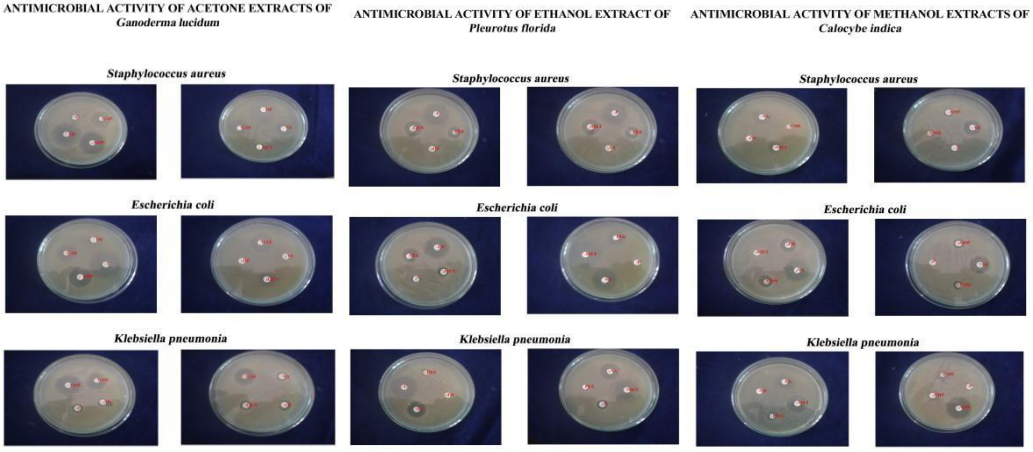
Table 4

Anti microbial activity of Methanol extracts of *Calocybe indica*

Organisms	Antibiotics Used	Zone of inhibition(mm)	Report

Escherichia coli	Ofloxacin	No zone	R
	Vancomycin	21	S
	Methicillin	12	R
	CME	5	R
	Penicillin-G	11	R
	Ampicillin	18	S
	Amikacin	No zone	R
	CME	4	R
Staphylococcus aureus	Ofloxacin	12	R
	Vancomycin	22	S
	Methicillin	No zone	R
	CME	12	R
	Penicillin-G	No zone	R
	Ampicillin	14	R
	Amikacin	21	S
	CME	8	R
Klebsiella pneumoniae	Ofloxacin	No zone	R
	Vancomycin	11	R
	Methicillin	17	S
	CME	8	R
	Penicillin-G	No zone	R
	Ampicillin	12	R
	Amikacin	22	S
	CME	8	R

CME- *Calocybe indica* Methanol Extracts R-Resistant S-Sensitive



Discussion

It is also reported that *Pleurotus* species of mushroom have antioxidant and antimicrobial property. They showed antibacterial activity against Gram positive and Gram negative bacteria. The extracts from *Pleurotus florida* was found to be partially sensitive to some of the human pathogen and partially resistant to some of the human pathogen studied.

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NETWORK INTRUSION DETECTION USING ENSEMBLE WEAK LEARNER TREE

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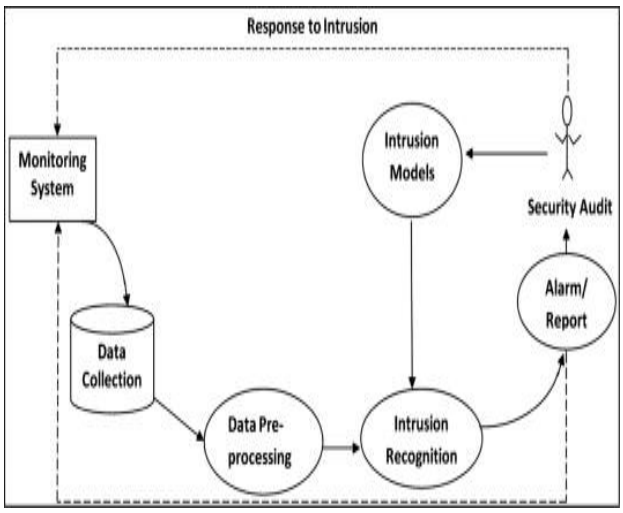
ABSTRACT

Network Intrusion Detection Systems (NIDS) is the most important system in cyber security and it informs network administrators about policy violations. Identifying the network security violations and tells about where administrators to be improved. In Existing NIDS is designed to detect known network attacks. In this paper it is proposed to develop systematic methods for classifying intrusion detection. The key ideas are to use data mining techniques to discover network behaviour, anomalies and known Intrusions. Decision trees have been effectively used in NIDS but suffer from over sampling and the tree splitting being greedy locally. To overcome this some of the ensemble techniques like Random Forest, Random Trees and Ensemble Weak Learner Tree (EWL TREE) are used. Proposed technique reduces the number of trees required and also improves the precision and recall.

Keywords: Intrusion Detection, Security, Intruder, Decision Tree, Ensemble Weak Learner.

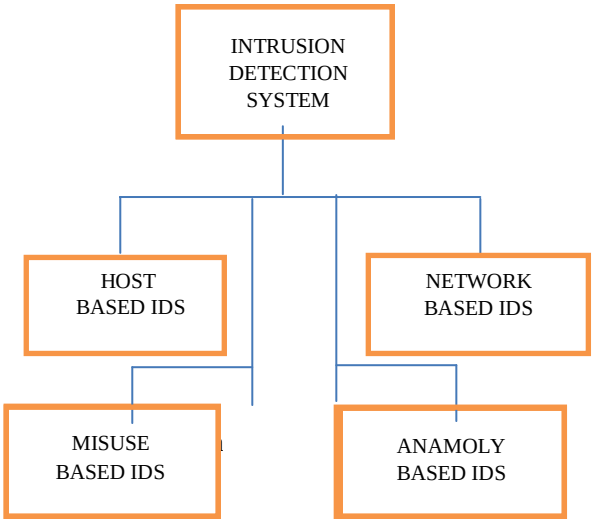
INTRODUCTION

Internet and online electronic data process are more essential in the present day life. Intruders are main threat for the security of online data processing. Intruders are unauthorized users of the machines they attack and also may violate the permission privileges. Intrusion detection system is a system that monitors network to trace the intruders and report to the administrators.



1.1 Classification of Intrusion Detection System

IDSs can also be classified based on their deployment in real time.



Monitors and analyzes the internals of a computing system rather than its external interfaces. A HIDS might detect internal activity such as which program accesses what resources and attempts illegitimate access.

1.1.2 Network Based IDS (NIDS):

An NIDS [1] detects Intrusion in network data. Intrusions typically occur as anomalous patterns though certain techniques model the data in a sequential fashion and detect anomalous subsequence. The primary reason for these anomalies is attacks launched by outside attackers who want to gain unauthorized access to the network to steal information or to disrupt the network.

A Network Intrusion Detection System (NIDS) is important IDS that analyzes network traffic at all layers of the Open Systems Interconnection (OSI) model and makes decisions about the purpose of the traffic, analysing for suspicious activity. Most NIDSs are easy to deploy on a network and can often view traffic from many systems at once.

1.1.3 Misuse Based IDS (MIDS):

Misuse Based Intrusion Detection normally searches for known intrusive patterns but anomaly based Intrusion Detection tries to identify unusual patterns.

1.1.4 Anamoly Based IDS

An anomaly-based intrusion detection system[2] detects both network and computer intrusions and misuse by monitoring system activity and classifying it as either normal or anomalous**.**

1. DATA MINING CONCEPTS

A common approach to identifying anomalous objects known as Supervised Learning or Classification[3] is to learn from training datasets, which include Normal or Abnormal instances to make a model. The Abnormal instances then can be identified if they significantly differ from the model. This needs a rich dataset in terms of proper labelling to make an accurate prediction. In the supervised mode, anomaly detection techniques assume that there exists a training data set in which instances have been labelled into normal and anomaly classes. Any unobserved data instance is analyzed by the predictive model, which is built by this approach of deciding whether it is normal or not.

In the Unsupervised Mode, Anomaly Detection Techniques [4] do not need training data. This type of technique which is widely used implicitly assumes that normal instances are more common than anomalies in the data. In these Clustering based methods the false alarm rate will be increased if this assumption is not accurate. Several Semi Supervised Techniques can work in unsupervised mode by employing an unlabelled dataset sample as training datasets if the number of anomalies was very few compared to the whole dataset.

Clustering based techniques are developed by the following concepts. One group assumes that normal data instances fit in a cluster; anomalies do not fit in any cluster, they appear as outliers. The other group assumes that whilst normal data instances sit by their nearest cluster centroid, anomalies are far from their nearest cluster centroid. The third group assumes data instances are normal if they fit in large and dense clusters and anomalies if they fit in small or sparse clusters.

The ensemble idea in supervised learning has been investigated and suggests combining two linear regression models. The first linear regression model is fitted to the original data and the second linear model to the residuals. To partition the input space using two or more classifiers. The main progress in the field was achieved during the Nineties. An ensemble of similarly configured neural networks to improve the predictive performance of a single one. At the same time laid the foundations for the award winning AdaBoost algorithm by showing that a strong classifier in the Probably Approximately Correct (PAC) sense can be generated by combining “weak” classifiers (that is, simple classifiers whose classification performance is only slightly better than random classification). Ensemble methods can also be used for improving the quality and robustness of unsupervised tasks. Ensemble methods can be also used for improving the quality and robustness of clustering algorithms. Nevertheless, in this paper we focus on classifier ensembles. Given the potential usefulness of ensemble methods, it is not surprising that a vast number of methods are now available to researchers and practitioners.

2. EXISTING SYSTEM

In the Existing Intrusion Detection System does not fulfil the network administrator's expectations. Decision Trees are one of the most widely used systems that can analyze data and identify significant characteristics in the network that indicate malicious activities.

The main function of Decision Tree in the previous system is as follows.

- Decision Trees can be trained using the processed data and tools.
- Running and analyzing the result of this data.
- Creating rules to detect their tactics, techniques, and procedures.
- Detect previously unknown Network Anomalies.
- Identify and highlight malicious traffic.
- Analysis of large sets of Intrusion Detection data.

After Decision Trees are built, they have the potential to reduce the amount of data required for analysis, help identify anomalous malicious activity, and provide analytic insight into the differences between malicious and benign network traffic.

3. PROPOSED SYSTEM

The Proposed system is composed of the following actions.

- Collect Network Traffic events.
- Abnormal Behavioural Activities (Such as repeatedly entered wrong password etc.).
- Deviation in Normal Behaviour Activities (such as long time taken to enter user name or password).

4. Ensemble Weak Learner Tree:

The ensemble idea[5] in supervised learning has been investigated and suggests combining two linear regression models. The first linear regression model is fitted to the original data and the second linear model to the residuals. To partition the input space using two or more classifiers. An ensemble of similarly configured neural networks to improve the predictive performance of a single one. At the same time laid the foundations for the award winning AdaBoost algorithm by showing that a strong classifier in the Probably Approximately Correct (PAC) sense can be generated by combining "weak" classifiers (that is, simple classifiers whose classification performance is only slightly better than random classification). Ensemble methods can also be used for improving the quality and robustness of unsupervised tasks. Ensemble methods can be also used for improving the quality and robustness of clustering algorithms. Nevertheless, in this paper we focus on classifier ensembles. Given the potential usefulness of ensemble methods, it is not surprising that a vast number of methods are now available to researchers and practitioners

Ensemble method or any combination model train multiple learners to solve the classification or regression problems, not by simply ordinary learning approaches that can able to construct one learner from training data rather construct a set of learners and combine them.

Ensemble techniques like Random Forest, Random Trees have been proposed in literature which is NP complete. To overcome this optimization method is proposed to improve the selection process of the weak learners in an ensemble tree. The Proposed Technique Ensemble Weak Learner Tree (EWL TREE) not only reduces the number of trees required but also improves the Precision and Recall. The Ensemble Technique achieves high detection accuracy with less computational time, and minimum cost.

5. Random Forests:

In Random Forests[6] each tree in the Ensemble is built from a sample drawn with replacement that is a bootstrap sample from the training set. In addition, when splitting a node during the construction of the tree, the split that is chosen is no longer the best split among all features. Instead, the split that is picked is the best split among a random subset of the features.

6. Randomized Trees:

Randomized Tree goes one step further in the way splits are computed. As in random forests, a random subset of candidate features is used, but instead of looking for the most discriminative thresholds, thresholds are drawn at random for each candidate feature and the best of these randomly-generated thresholds is picked as the splitting rule. This usually allows reducing the variance of the model a bit more.

7. CONCLUSION

Recent years, increase in the usage of computers and mobile over Internet for social networking, healthcare, e-commerce, bank transactions, and many other services. The networks allow users to create a profile including their personal information, to add other users as friends and to exchange messages. It opens the door for unlawful activities. Existing Decision tree algorithms which are applied to online networks are limited because of issues such as complexity, low accuracy, privacy and it mostly follow the signature based analysis. Using Ensemble methods for network security makes us secure communication in public network. Modified tree algorithm and B tree are used for the strong prediction of intruders and construct set of classifier also for prediction.

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Preterm birth Care Unit for Analyzing Using Genetic Medium in health care system

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Abstract
Analyze and improve the health care of the baby from the weak point. By continuous monitoring of the baby we can improve the health and find the defect of the baby. The condition of baby can be detected more accuracy and quick manner then only we can able to terminate the problems and give a better solution. By using the genetic algorithm, we can able to find the various complex problem, the solution of the problem can be identifying and optimize the function for the required problem. If the complexity of the problem is in heavy function, the solution of the problem can be identifying and give the accurate solution for the complexity.

Keywords— pretermbirth, Genetic Medium, Optimization Techniques and classification and filtering.

I. INTRODUCTION

Using this genetic algorithm, analyzing the health care study that implementation of a clinical decision support system and rectify the problem of baby, by which search the problem and optimize the health care problem using genetic algorithm. The genetic algorithm is a heuristic method of finding approximate solutions to optimization problems. This genetic medium used to resolve hers preterm birth (pre-matured babies) in our health care system to proven by the binary component. The, model used in fields such as engineering to incredibly high quality products thanks to their ability to search a that the huge combination of parameters to find the high match. For example, they can search through different combinations of materials and designs to find the perfect combination of both which could result in a stronger, lighter and overall, better final product.

II. RELATED WORKS

The procedure allows excluding these areas from the computation of accuracy measures.

The method has been implemented in ArcGIS 9 using SQL-based algorithms. The doubling was performed since we did not know a priori how many points might be deleted. These points obtained the classification values of the reference data [1].

Quality improvement efforts require scientifically sound performance measures. Just as in clinical research, sufficient
resources must be allocated to ensure a robust data collection, analysis, and reporting system. Leadership is crucial to the
success of both the overall program and each project within it. Individual quality improvement projects and the entire quality improvement program should learn from its successes as well as failures [2].

Further advancement in such a model could be achieved with implementation of another growing technology, Internet of Things (IOT). It would enable the system to talk to various other devices and interfaces ensuring better communication of analysis [3].

Easily represent the distinct activities and provide a rich set of information needed for the instantiation within real-time clinical care, the ad hoc nature of the event sequence was a challenge to represent, as it is with any business process modeling technique. We have commenced work on extensions to the PaJMa model to better support the event based nature of the ICU setting [4].

Time dimension in medical data is considered as a fundamental variable for the analysis of frequency of diseases that prevail with respect to time. Classical frequent pattern mining cannot utilize the time interval between events and therefore it is not suitable for exploring the temporally frequent diseases [5].

Further development has commenced to incorporate artifact identification and appropriate processing of

that data within the data mining. Currently the storage of the data stream data within the TAMDDM framework is not standard based, as such standards are absent. The monitoring devices generate enormous amounts of data and better standards based storage methods are currently being investigated [6].

It examines the extent to which there is a cause-and-effect relationship among the four areas of measurement suggested the financial, customer, internal- Ž business-process and learning and growth perspectives. The paper then examines. Whether the balanced scorecard can link strategy to operational metrics which managers can understand and influence [7].

The initiative was started to encourage and institutionalize business transformation as a prevalent practice in MINDEF. To maximize the value of our IT investments, it is crucial that MINDEF continues to move forward progressively with business innovation, improvement and integration to enhance the operational efficiency of the organization [8].

It requires only one scan of data and provides any-time classification model that is capable of fast adaptation to changes in data. The adaptation is achieved by exploiting the modularity and independence of single rules within the rule set and assigns an error based on a drift detection method to each rule. Whenever the quality of a rule decreases significantly, the rule is removed from the set [9].

Hoeffding Adaptive Trees are always as accurate as CVFDT and, in some cases, they have substantially lower error. Their running time is similar in HAT-EWMA and HAT-INC and only slightly higher in HAT-ADWIN, and their memory consumption is remarkably smaller, often by an order of magnitude [10].

III. METHODOLOGY

This research proposes a comprehensive framework for quality improvement in health care that integrates the SPOE, CRISP-DM and PaJMa models to support clinician decision-making for the improvement of clinical process and outcomes. The framework is demonstrated using late onset neonatal sepsis as a case study where the quality improvement activity is the implementation of a clinical decision support.

This research presents a comprehensive framework for quality improvement in health care that integrates the Structure-Process-Outcome-Evaluation (SPOE), the Cross Industry Standard Process for Data Mining (CRISP-DM) and the Patient Journey Model (PaJMa) together to support clinician decision- making for the improvement of clinical processes and outcomes.

Using this genetic algorithm, analyzing the health care study that implementation of a clinical decision support system and rectify the problem of baby, by which search the problem and optimize the health care problem using genetic algorithm. This algorithm is a heuristic method of finding approximate solutions takes the optimization problems. This algorithm that the evolutionary theory of the survival of the condition, along with cross and mutation, to create successive generations of individuals that evolve to a better solution.

We did not invent it. Understand what you want to accomplish from a perspective. Your organization may have competing objectives and constraints that must be properly balanced. The goal of this stage of the process is to uncover important factors that could influence the outcome of the project. We are however evangelists of its powerful practicality, its flexibility and its usefulness when using analytics to solve thorny business issues. It is the golden thread that runs through almost every client engagement. The CRISP-DM model is shown on the right.

This model is an idealized sequence of events. In practice many of the tasks can be performed in a different order and it will often be necessary to backtrack to previous tasks and repeat certain actions. The model does not try to capture all possible routes through the data mining process.

They're often used in fields such as engineering to create incredibly high quality products thanks to their ability to search a through a huge combination of parameters to find the best match. For example, they can search through different combinations of materials and designs to find the perfect combination of both which could result in a stronger, lighter
and overall, better final product.

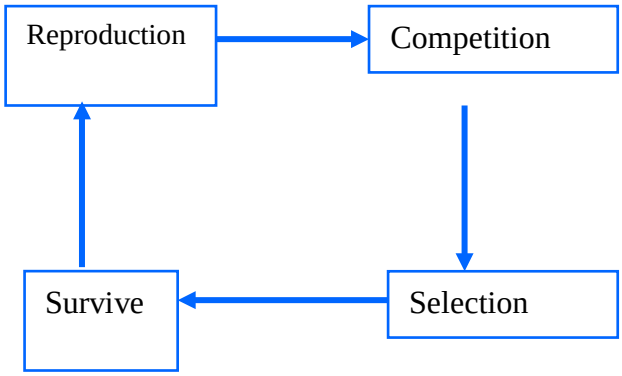

Fig: Based on Darwinian Paradigm

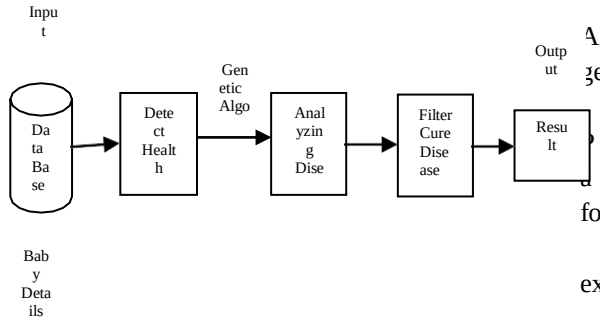

Fig: Working Functionality

In computer science and operations research, a **genetic algorithm** (**GA**) is a meta-heuristic inspired by the process of selection that belongs to the larger class of evolutionary algorithms (EA). Genetic algorithms are commonly used to generate high-quality solutions to optimization and search problems by relying on bio-inspired operators such as mutation, crossover and selection.

The evolution usually starts from a population of randomly generated individuals, and is an iterative process, with the population in each iteration called a *generation*. In each generation, the fitness of every individual in the population is evaluated; the fitness is usually the value of the objective function in the optimization problem being solved.

The more fit individuals are stochastically selected from the current population, and each individual's genome is modified (recombined and possibly randomly mutated) to form a new generation. The new generation of candidate solutions is then used in the next iteration of the algorithm. Commonly, the algorithm terminates when either a maximum number of generations has been produced, or a satisfactory fitness level has been reached for the population.

A standard representation of each candidate solution is as an array of bits. Arrays of other types and structures can be used in essentially the same way. The main property that makes these genetic representations convenient is that their parts are easily aligned due to their fixed size, which facilitates simple crossover operations. Variable length representations may also be used, but crossover implementation is more complex in this case.

RESULTS AND DISCUSSION

"Evolutionary Computing" was discover in the 1960s by I. Rechenberg. John Holland wrote the first book on Genetic Algorithms 'Adaptation in Natural and Artificial Systems' in 1975. In 1992 John Koza used genetic algorithm to evolve function to perform certain tasks. He called his method "Genetic rogramming". Two important elements required for ny problem before a genetic algorithm can be used for a solution are Method for representing a solution

ex: string of bits, numbers, character

Method for measuring the quality of any proposed solution, using fitness function

ex: Determining total weight

And moreover the heuristic vale provided by the weight of the flow in current functionality. It is the very easy way to analyze the probability functionality in genetic medium.

Sequence of steps

1. Initialization
2. Selection
3. Reproduction
4. Termination

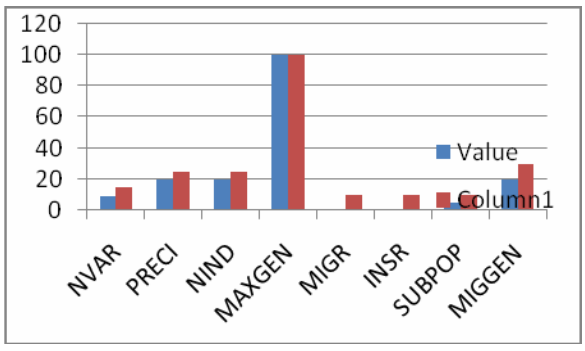

Fig: Result of accuracy

IV. CONCLUSION AND FUTURE ENHANCEMENTS

This research has presented a framework to improve clinical processes by implementing a Clinical Decision Support System to improve quality of care in the NICU environment. The framework was then demonstrated with a case study within the context of neonatal intensive care as it has the capability for the early detection of abnormal physiological data to alert clinician that the baby is developing late onset neonatal sepsis. Our future research will focus of the identification of environmental, cultural and attitudinal factors that may affect the quality of care delivery for critically ill neonates.

This Genetic algorithm gives the accuracy details and avoid the various delimits. Thus the GA helps the people to find and minimized the no of death. The baby gender and the mutation can be identified. The genetic algorithm that has been implemented goes some way to addressing the speed issues relating to genetic algorithm room allocation phase. It is believed that with the aid of some code optimizations and more contemporary hardware the time taken for the genetic algorithm to allocate rooms to time-slots will approach an acceptable time frame.

FUTURE WORK

It is also believed that this work provides a strong basis for future work in several key areas; further investigation of encoding for this problem could yield high benefit. It is felt that the current encoding is somewhat overloaded and that as a result changes to alleles in one part of the chromosome can greatly affect the expression of alleles in distant parts of the chromosome. Secondly, development of a better implementation of room splits and mixed duration room penalties in the fitness function would result in a large reduction in run times. Finally, it is felt that although the underlying genetic algorithm engine developed is somewhat immature, it does provide a sound basis for further genetic algorithms to be implemented. This includes but, is in no way is limited to the time-slot allocation phase of the hybrid method.

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Purification and characterization of chitinase from Trichoderma viridae N9 and its antifungal activity against phytopathogenic fungi

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Abstract
Enzymes are globular proteins that act as biological catalysts. Some fungi produce enzymes as their metabolites which act as antimicrobial agent. The main aim of this study is purification and characterization of chitinase from *Trichoderma viridae* N9 and its antifungal activity against phytopathogenic fungi. The fungi was isolated and enumerated from the soil. It is purified and used for chitinase production. The crude enzyme was extracted and purified. The enzyme was characterized and used for its antifungal activity study. From the result obtained in this study, it was demonstrated that *Trichoderma viride* N9 is able to produce chitinase when cultured in a relatively simple chain containing medium with requiring other external salts and nitrogen sources. Chitinase (EC 3.2.1.14) was isolated from the culture filtrate of *Trichoderma viride* and purified by ammonium sulfate precipitation, DEAE-cellulose ionexchange chromatography, and Sephadex G-100 gel filtration.

The molecular mass of the purified chitinase was 4kDa estimated by a sodium dodecyl sulfate poly acrylamide gel electrophoresis. Chitinase was optimally active at pH of 4.0-5.0 and at 40^{o}c. The enzyme was stable from pH 3 to 6, and up to 50oc. In conclusion, our results showed that *Trichoderma viride* N9 produces 46 kDa chitinase with a potential to be a biocontrol agent for phytopathogenic fungi. Thermal stability, pH tolerance, and antifungal properties of the chitinase may contribute to its biotechnological potentiality. The results of this study may be useful in the development of genetically engineered microorganisms with high chitinase active.

Keywords
Phytopathogenic, Chitinase, Chromatography, Trichoderma viride.

Introduction
Chitin, a linear β-(1,4)-linked N-acetylglucosamine (GlcNAc) polysaccharide is a main structural component of fungal cell wall (Cabib, 1992). Chitinases (EC .2.1.14), essential enzymes catalyzing the conversion of chitin to its monomeric or oligomeric components, have been found in a wide range of orgaisms, including bacteria (Gooday, 1990; Perrakis *et al*., 1994), plants (Gijzen *et al*., 2001; Masuda *et al*., 2001) and fungi (Omumasaba *et al*., 2001).

The production of chitinase by plants has been suggested to be a part of their defence mechanism against fungal pathogens (Gijzen *et al*., 2001; Masuda *et al*., 2001). Those produced by bacteria appear to have a nutritional or scavenging role, as shown by their secretion into the medium.

The first step in chitin digestion is hydrolysis of b-1,4 linkages between the N-acetyl glucosamine (NAG) molecules mediated by chitinases. Chitinases are extracellular inducible enzymes that are found in a variety of organisms. Chitinases are particularly useful in agriculture as biocontrol agents against fungal plant pathogens because of their ability to hydrolyze the chitinous fungal cell wall. Moreover, they offer nontoxic alternative to chemical fungicides.

Chitinases are particularly useful in agriculture as biocontrol agents against fungal plant pathogens because of their ability to hydrolyze the chitinous fungal cell wall (Maisuria *et al*. 2008).

A chitinase produced by *Trichoderma viride* N9 isolated from a soil sample collected from Nallamala forest, India, was purified and characterized. The enzyme was purified in three

step procedure involving ammonium sulphate precipitation, sephadex G-100 gel filtration and DEAE-cellulose ion-exchange chromatrography. The enzyme was stable from pH 3 to 6, and up to 50 oc. Among the metals that were tested, the Fe^{2+}, Hg^{2+}, Mn^{2+}, and Co^{2+} completely inhibited the enzyme activity. The enzyme was less sensitive to Al^{3+}, Ca^{2+}, Cu^{2+}, and Zn^{2+}. The purified chitinase showed antifungal activity against phytopathogenic fungi. (Jenifer S *et al*., 2014).

Chitinase (EC 3.2.1.14) was produced from the culture filtrate of marine-derived *Aspergillus terreus* and purified by 65% ammonium sulphate precipitation, followed by gel filtration on Sephadex G-100 and DEAE-Sephadex A-50 ion exchange chromatography, with 5.16-fold of purification and specific activity of 182.08 U/mg protein. The purified chitinase produced by *A. terreus* inhibited the growth of *Aspergillus niger*, *Aspergillus oryzae* inhibit the growth of *Rhizopus oryzae*. (Aida M. Farag *et al*., 2016).

Antibacterial activity of *Achryanthes aspera* extract was studied against five bacterial species such as *Corynebacterium sp., Staphylococcus aureus, Klebsiella sp., Vibrio sp.* and *Escherichia coli*. It was found that the antibacterial activity of the ethanol extract (75 µg/ml) was shown maximum against *Enterobacter aerogens* (19 mm) followed by *S. aureus* (14mm) *Klebsiella sp.* (11mm). (Geetha K *et al*., 2010).

Fungal phytopathogens are among the biotic factors that cause serious losses to agricultural crops. The efficiency of biocontrol of *Trichoderma viride* on the pathogenicity of *Sclerotiu rolfsii* on tomato plant was compared with the influence of chemical control using fungicide (mancozeb) in this study. (Ekundayo E.A *et al*., 2015).

Materials and methods

Collection of soil sample:

The soil samples were collected from Rice fields, near Nadukombai village, India. The samples were collected in sterilized bottles for isolation of chitinase producing *Trichoderma viride.*

Isolation of fungi:

The fungi were isolated by serial dilution method with chitin agar plates. The plates were incubated at 27^{o}C for 7 days. After incubation, the colonies with highest clear zone forming fungi were selected as the chitinase producer. Among the isolates showing the chitinase activity, strain N9 isolated from soil, was selected for further studies.

Phytopathogenic fungi:

The phytopathogenic fungal strains *Aspergillus niger, Aspergillus flavus, Macrophomina phaseollina and Fusarium moniliforme* were collected from TNAU Coimbatore. The strains were maintained on potato dextrose agar slants at 4°C and subcultured every one month.

Identification

Morphological identification of fungal culture:

Morphological identification was done by lactophenol cotton blue staining. The identified fungus was stored on potato dextrose agar slants in the refrigerator at 4°C prior to use.

Molecular identification of chitinase producing fungus:

Fungal strain which was the highest chitinase activity producer was picked for identification and further investigation. Preliminary identification by morphological analysis was conducted by using light microscope. The genotype of the strain was also identified. The 18S rDNA sequences of strain were determined.

DNA extraction:

For DNA extraction, mycelia culture was grown in Czapek-Dek liquid medium under continuous shaking (200 rpm) at 30oc for 7 days. The DNA from one week old fungal strain was extracted following the Biogene Kit method.

Nucleotide sequence comparisons were performed using BLAST net work. *Aspergillus* species were designated to the sequenced cultures and analysed based on similarity with the best-aligned sequence of the BLAST search. The 18S rDNA gene sequencing alignments were performed using Clustal x 1.83 software (Thompson *et al*., 1997).

Preparation of collodial chitin:

Colloidal chitin was prepared according to the method described by Roberts and Selitrennikoff (1988) with slight modifications.

Production of chitinase:
For the production of chitinase, *Trichoderma viride* N9 was grown in 100 ml of liquid medium in an Erlenmeyer flask containing the following per liter, 10 g colloidal chitin, 2g $(NH_4)_2SO_4$, 0.7 g KH_2PO_4, M $gSO_4.7H_2O$ 0.01 g, $FeSO_4.7H_2O$ in 500 ml conical flask. The flask was inoculated with 2 ml spore suspension ($8x10^6$ spores/ml) of *T. viride* N9 and incubated for 5 days at 25°C on a reciprocal shaker. After incubation, the culture broth was centrifuged at 1000 x g for 20 min and the clear supernatant was used for further purification.

Crude enzyme extraction:l
At the end of fermentation, the culture was harvested, centrifuged at 10000 rpm for 15 min at 4oc and supernatant was used for chitinase assay.

Purification of chitinase:
The supernatant from the culture were precipitated by ammonium sulfate (80%). The precipitate was collected by centrifugation at 10000 x g for 20 min, and resuspended in an acetate buffer (50 mM, pH 5.0). It was dialyzed the same buffer and freeze-dried. The sample was then loaded on a pre-equilibrated DEAE-cellulose column chromatography (2.6 x 20 cm), and washed with the acetate buffer. The proteins were eluted in a stepwise gradient on NaCl (0 – 1.0 M) at a flow rate of 24 ml/h. Fractions of 3 ml were collected, and the absorbance was read at 280 nm in a spectrophotometer. The fractions with chitinase activity were combined, dialyzed against the acetate buffer (50 mM, PH 5.0), and concentration by lyophilization. Then concentrated sample was passed through a Sephadex G-100 column (1.6 x 36 cm) and eluted with the acetate buffer (50 mM, pH 5.0) at the rate of 15 ml/h. The fractions of 3 ml were collected, and the absorbance and chitinase activity were measured.

Determination of protein content:
Protein content was determined by the method Bradford (1976) using Bio-Rad dye reagent concentrate and bovine serum albumin as the standard.

Chitinase assay:
Colloial chitin was used as a substrate to assay chitinase activity; 0.2 g in a 2 ml acetate buffer (50 mM, pH 5.0) was incubated with 1 ml of enzyme at 30°C for 1 h. The product was measured in 1ml of filtrate by the dinitrosalicylic acid (DNS) method (Miller, 1959).

Molecular weight determination:
SDS-PAGE on a 12% w/v acrylamide gel was performed for the determination of approximate molecular weight in accordance with the procedure of Laemmli (1970).

Effect of pH on enzyme activity:
The effect of pH on enzyme activity was determined by incubating the purified chitinase (10 µg as protein) at different pH levels (3-10) under standard assay conditions using colloidal chitin as the substrate.

Effect of temperature on enzyme activity:
The optimum temperature for the chitinase activity was determined by performing the standard assay in the range of 20-80°C. Thermal-stability of enzyme was determined by assaying the residual citinase activity after incubation for 1 h at the previous temperature without the substrate.

Effect of metals on enzyme activity:
The enzyme was pre-incubated with a 5 mM concentration of different metals, chitinase activity was measured after 30 min.

Antifungal activity:
Antifungal activity was observed by hyphal extension inhibition (Roberts and Selitrennikoff, 1990). Test fungal cultures were inoculated on potato dextrose agar plates and incubated at 27±1°C. After 24 hours, discs containg sample enzyme (10 µg) were placed over the growth and incubated at 27°C±1°C for up to 7 days.

RESULTS AND DISCUSSION

SCREENING AND IDENTIFICATION OF CHITINASE PRODUCER:
Trichoderma viride N9 isolated from soils was screened for maximum production of chitinase by observing clear zone in petridishes and was selected for further studies. Preliminary study on morphology of the fungus suggested that the fungus is *Trichoderma viride.*

MORPHOLOGICAL CHARACTERIZATION:
The fungus grows rapidly with immense vegetative mycelium. Colonies were at first white later turned to light green to deep green due to conidial mass.

Conidiophores were distinct from vegetative hyphae, indefinite in length and di or trichotomously branched. Conidia were born in groups, green, smooth, thick walled, globus or ovoid, 3.0-4.0µm diameter or 3.0-5.0x2.5x3.5 µm in size. Based on morphological characteristics the strain N9 was identified as *Trichoderma viride* (Rifai, 1969) shown in plate 4.

MOLECULAR IDENTIFICATION:

Isolate N9 was characterized as *Trichoderma viride* based on its morphological and 18S rRNA sequence analysis. The 18S rRNA (323 bp) sequence of N9 showed high similarity to *Trichoderma viride* strains. Therefore, it was named *Trichoderma viride* N9. The 18S rRNA gene sequence of strain N9 has been deposited in the GenBank database under accession number AB646476.

PURIFICATION OF CHITINASE:

The chitinase produced by *T. viride* N9 was concentrated by ammonium sulphate (80%) precipitation and purified consecutively with gel filtration and ion-exchange chromatography. The results of the purification procedure are summarized in Table 1. The precipitate was adsorbed h a DEAE-cellulose column, and eluted at 0.1-0.3 M NaCl in the buffer. Following DEAE-cellulose column, the enzyme was purified 4.3-fold with a recovery of 31.6% and specific activity of 49.15 U/mg of protein. The concentrated active fraction further purified by a Sephadex G-100 column chromatography was shown in plate 3.

The elution profiles of protein and chitinase activity are shown in after the final purification step, the enzyme was purified 6-fold with a recovery of 15.9% and specific activity of 142.7 U/mg of protein. The purified chitinase appeared as a single protein band in SDS-PAGE and with molecular weight of approximately 46 kDa. Similarly Lima *et al* (1997) reported the molecular weight of the chitinase from the *Trichoderma sp* T6 as 46 kDa. Different molecular masses that ranged from 33-46 kDa have been reported for other fungal chitinases (Harighi *et al*, 2007; De Marco *et al*., 2004).

EFFECT OF PH ON ENZYME ACTIVITY:

The optimal pH for chitinase activity and stability of the chitinase were examined. The enzyme was most active between pH 4.0 and 5.0. It was relatively stable at pH between 3.0 and 6.0. However, beyond these pH ranges, it rapidly lost its activity (Fig. 6). Compared with other *Trichoderma chirichodermainases*, similar optimal pHs were obtained pH 4 for *T. harzianum* and pH 5.0 for *Trichoderma atroviride* PTCC 5220 (Harighi *et al*., 2007).

EFFECT OF TEMPERATURE:

The chitinase activity was most active at 40oc (Fig. 7), similar to most of the other fungal chitinases (Mathivanan *et al*., 1998; Harighi *et al*., 2007; Van Nguyen *et al* 2008; De Marco *et al*., 2004). Similar thermo stability was obtained below 6^{o}C for other *Trichoderma* chitinases (DeMarco *et al*.,2004; Omumasaba *et al*., 2001). The high temperature inactivation may be sue to incorrect confirmation due to hydrolysis of the peptide chain, destruction of aminoacid, or aggregation (Schokker and Van Boekel., 1999).

EFFECT OF METAL ION:

The effect of metal ions on the enzyme activity is presented in Table 2. The enzyme was strongly inhibited by Fe^{2+}, Hg^{2+}, Mn^{2+} and Co^{2+} at concentrations of 5 mM and was less sensitive to Al^{3+}, Ca^{2+}, Cu^{2+} and Zn^{2+} ions showed a slight inhibitory effect on enzyme activity. The inhibitory effect of Fe^{2+} has also been reported on chitinase produced by *Trichoderma koningii* (Yuvan and Jian Ju, 2011).

ANTIFUNGAL ACTIVITY:

Fungal hyphae grew outward from the centre of the petriplates. After, 7 days of incubation, a crescent of growth inhibition was observed around the perimeter of the discs containing chitinase for *Aspergillus flavus* (Fig. 8C), and *Fusarium monlifome* (Fig. 8D). Chitinases from other fungal species were reported to exhibilted several antifungal activities like inhibition of spore germination, germ tube elongation, bursting of spores and hyphal tips (De Marco *et al*., 2000; Madhavan Nampoothiri *et al*., 2004; Harighi *et al*., 2007).

TABLES

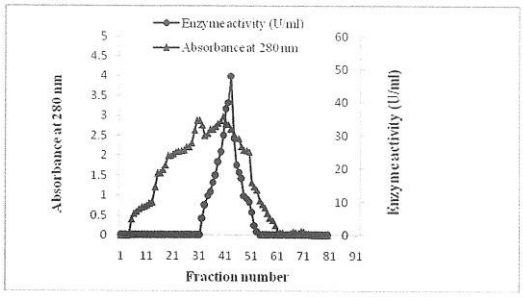
Table 1. Purification steps of chitinase from *T. viride* N9.

Step	Total protein(mg)	Total activity (U)	Specific activity (U/mg)	Purification (fold)	Yield (%)
Crude enzyme	423.5	1360.1	7.24	1.0	100
Ammonium sulfate	218.2	876.5	13.2	1.9	53.1
DEAE-Cellulose	35.8	315.0	49.15	4.3	31.6
Sephadex G-100	6.4	130.6	142.7	6.0	15.9

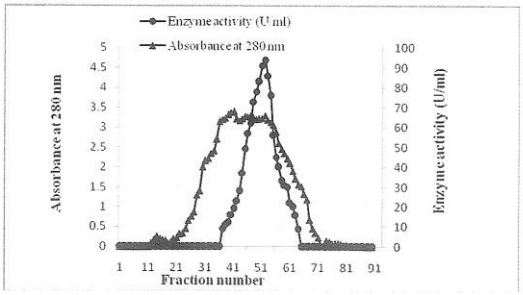
Table 2. Effect of metal ions on chitinase activity

Metal ions	Relative activity (%)
Control	100
Al^{3+}	89.3
Ca^{2+}	86.0
Cu^{2+}	84.5
Fe^{2+}	0
Co^{2+}	0
Mn^{2+}	0
Zn^{2+}	71.6

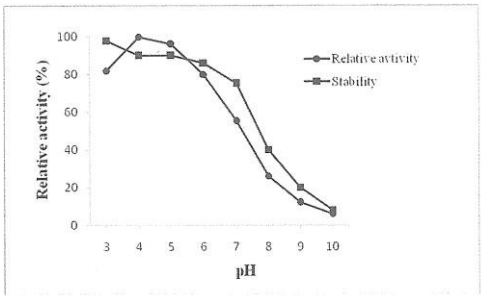
FIGURES



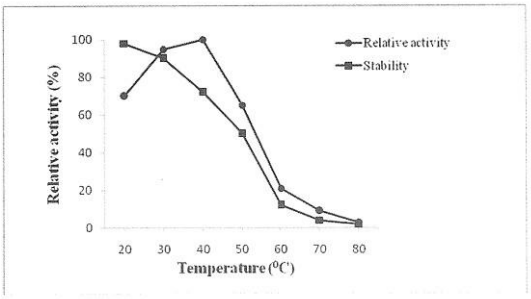
(A) Chromatogram of the chitinase from *T. viride* N9 on DEAE-cellulose (2.6 × 20 cm). The column was eluted with NaCl (0-1.0 M) at a flow rate of 24 ml/h. Fractions of 3 ml were collected.



(B) Chromatogram of the chitinase from *T. viride* N9 on a Sephadex G-100 column (1.6 × 36 cm). The column was eluted with a 50 mM sodium acetate buffer (pH 5.0) at a flow rate of 15 ml/h. Fractions of 3 ml were collected.



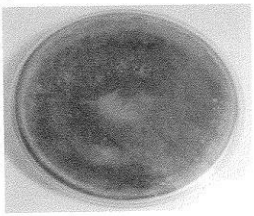
(C) Optimal pH (•) and stability of pH (■) of purified chitinase from *T. viride* N9.



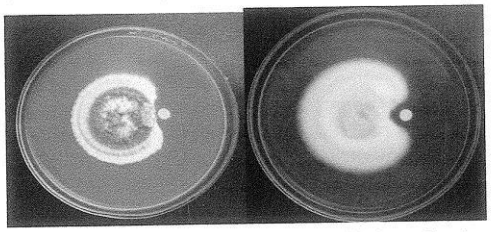
(D) Optimal temperature (•) and stability of temperature (■) of purified chitinase from *T. viride* N9.

PLATES

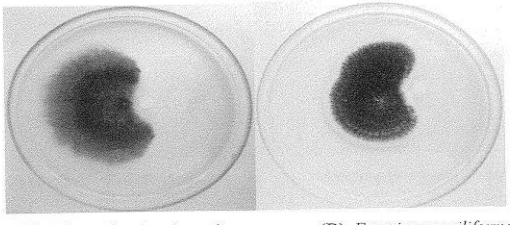
(1).*Trichoderma viride* on agar plate



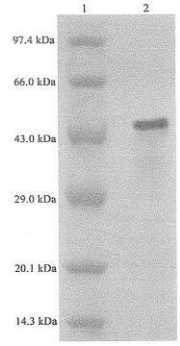
(2).Growth against filter paper disc (5 mm) containing purified chitinase (10 µg each) of isolate *T. viride* N9;



(A) *Aspergillus flavus* (B) *Aspergillus niger*

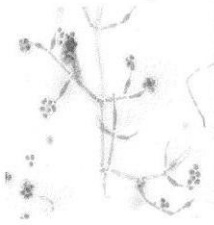


(C). *Macrophomina phaseolina* (D). *Fusarium moniliforme*.

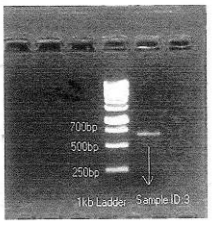


(3) SDS-PAGE of purified enzyme

Lane 1: Molecular weight marker protein; Lane 2: Purified chitin



(4)Microphotograph of *T. viride* (400x)



(5) Agarose gel shows a single band about 700bp.

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The Role of ICT in English Language Teaching

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Abstract
Language learning and teaching is considered to be a complex process. To make such a complex process easier, well-advanced teaching aids should be used in the language teaching process and as it is the need of the hour. Language teaching and learning are becoming more sophisticated day by day thanks to application of technological innovations in classroom practice. In recent past, the number of applications of ICT in English teaching and learning have been increased The recent and great development of the Internet led to a technological revolution in all fields of our life and teaching and learning in which gradually become more reliable are not exception.

ICT has its noticeable impact on the quality and quantity of teaching-learning process. In concrete terms, ICT can enhance teaching and learning through its dynamic, interactive, and engaging content; and it can provide real opportunities for individualized instruction. So, it is necessary to use modern approaches and tools of ICT (Information and Communication Technology) to develop better understanding and acquisition of basic skills i.e. LSRW (Listening, Speaking, Reading and Writing) of English language.

Introduction

"What we learn with pleasure, we never forget" – Alfred Mercier.

ICT means Information and Communication Technology. In the 21st century Information and Communication Technology becomes the buzz word. According to UNESCO, "ICT is a scientific, technological and engineering discipline and management technique used in handling information,

its application and association with social, economical and cultural matters." In the last few decades, English language teaching has undergone severe changes with the introduction of latest methodologies and techniques .As the language teachers it is significant to understand and use the various methods and techniques and also apply them in classrooms. Language teachers should keep themselves aware of the recent trends to create curiosity among the student community in learning the English language and its skills and prepare them for the challenges of the future. Thus ICT in English language teaching (ELT) has played a vital role and occupies a central place in teaching and learning process. It becomes an essential part of our daily life because technology has brought in several changes in everyone's life. Because ICT enables the learner-centred learning rather preferring teacher- centred teaching. It enables a paradigm shift in the teaching learning process.

ICT as an Effective Tool in English Teaching

Various electronic gadgets and technology has changed the Conventional classroom teaching. ICT provides enormous use in teaching and learning of English language that furnishes the students in all walks of life. With the help of ICT tools teachers and students creates and practices various ideas and it creates a learner-friendly environment. Some of the use of ICT in the language Class room are provides highly motivational activities for students, computer based activities can provide stimulus to creative

learning. ICT tool provides more opportunities for student teacher interaction and also it offers an easy access to information. It makes the students really interested towards the content delivered by the teacher.

The Teacher as a Facilitator

"With the help of technology, teachers will be leaders in the transformation of education around the world"- Craig R .Barrett

With the help of modern Technology the teacher plays the role of a facilitator and acts as a guide, whereas the students take responsibility of learning on their own. It promotes self learning. A teacher can use technological sources such as videos, PPT's, interactive virtual Labs, electronic white board etc in the language classroom for teaching. The language skills can also be evaluated with the help of some of the ICT tools. The teacher should also learn to make best use of the modern tools in their day- to-day teaching.

Information Communication and Technology

ICT means Information and Communication Technology. According to Kent, "ICT in education point of view refers to Information and Communication Technology such as computers, communications facilities and features that variously support teaching learning and a range of activities in education [QCA schemes of work for ICT in Kent country council,2004]. The term ICT refers to the forms of technology that are used to transmit, process, store, create, display, share or exchange information by electronic means. This broad definition of ICT includes such technologies as one-to-many broadcast technologies like radio, television, video, DVD, mobile phones, satellite systems, and computer and network hardware and software, as well as the equipment and services associated with these technologies, such as videoconferencing, e-mail and blogs (6).

ICT has played "an educational role in formal and non-formal settings, in programs provided by governmental agencies, public and private educational institutions, for profit corporations and non-profit groups, and secular and religious communities" (unesco.org). ICT includes the use of computer technology, including hardware, peripheral devices, media, delivery systems and software.

Scope of ICT in English Language Teaching

ELT and Information and communication technology in one hand can cover and it is able to teach all the four skills of English language LSRW (Listening – Writing – Reading –speaking). ICT plays a pivotal role in teaching English. The modern way of teaching-learning process depends on information and communication technology (ICT). So, it becomes the need of the hour to improve the quality of education.

Benefits of Using ICT Tools in ELT

ICT afford positive ambiance on students' attitude towards learning a language. Students can have an excellent chance to pick out the elements through which they can meet their learning strategies, which were failed to satisfy by the conventional methods. The availability of sources like images, animations, audio and video clips is very creative because they support the learners in presenting and practicing a language in a different way. Not only for the students but also the teachers can depend more on these tools to produce, prepare, store and retrieve the materials of learning at ease. ICT provides authenticity by which the learner could interact with others all over the world.

Advantages of ICT in English language teaching

The use of ICT has constructive effects on foreign language teaching learning

1. One can get the required information within a fraction of second and wherever they were
2. Learners become more innovative with the help of ICT tools
3. English lessons that incorporate multimedia applications can exert powerful motivation and provide bored students with exciting new ways to learn
4. ICT can make students and teachers to work with contemporary and authentic sources

5. ICT ameliorates the learner's interaction, verbalization involvement in group collaborative learning
6. Students can learn independently
7. With the help of ICT pictorial description is available

Disadvantages of using ICT in teaching English

1. Students can get distraction because of the ICT tools.
2. Online learning cannot offer human interaction.
3. Students can get access to the unnecessary information
4. Intense requirement for self-discipline and self direction
5. The teacher is only a mediator or facilitator

CONCLUSION

This research paper tried to explore the use of ICT tools in teaching and learning of English. Hence ICT's are intrinsic tools in many educational institutions. Since conventional approaches and the methodologies are interlinked with the innovative technologies to teach English language, it seems impractical to keep them part. With the help of these ICT tools which are available free and readily on the internet, can make the second language teaching a successful one. It becomes beneficial for teaching a foreign language in the hands of creative and knowledgeable language teachers. Now ELT has come into the era of evaluation where new inventions are entering into our day to- day activities. The elements which are afore mentioned are making impacts in the pathway of learning particularly in the English language. The use of ICT increases the scope of teaching. It provides quality learning materials and creating autonomy of learning.

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The Concept of Man in Sri Aurobindo's Select Poems

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ABSTRACT
Sri Aurobindo's vision, there is one and eternal self behind the appearances of the universe. The One Self unites all beings. It is only a separative consciousness, an ignorance of the true Self in the mind, life and body that divides the beings. When man is able to remove the veil of individual consciousness, he can become aware of the true Self, the Divinity that resides in him and in all. The aim of this paper throws the light on the innate relationship of man and nature. Sri Aurobindos versus are tapping the internal consciousness and the relationship of human.

Keywords: Evolution, Consciousness, Transformation

INTRODUCTION

Sri Aurobindo, a man of multi faceted literary personality, a nature philosopher and an intuitive teacher, is an eternal star shining brightly in the firmament of Indian minds and literature. Though he placed as a poet, chiefly as an Indian writer of a very magnanimous stature, he is a divine seer poet. He is today recognized undoubtedly one of the greatest poets of Indian writing in English. His mile stone evolution is Savitri. It has considered as an epic of all time. Sri Aurobindo's Inward and outward views about the term Nature are of the utmost importance. According to him poetry is the medium, which insight the invisible nature of man.

The Concept of Man in Nature

Sri Aurobindo believes that the One Being and consciousness is already involved in matter. By the process of evolution, it frees itself and grows higher and higher towards perfection. The Consciousness is self-impelled to grow continuously. First, life appears as a result of the release of consciousness, and then appears mind. But the evolution does not stop with mind.

Evolution continues towards the emergence of the Super mind. The process of evolution has a double movement. Perhaps it is an arising aspiration from the divine conscious and it gets a response from the higher spiritual world. In Nature, an ascending evolution goes from the stone to the plant, from the plant to the animal, from the animal to man. Man is not at the last rung of the ascending evolution. In his nature, habits and instincts, man is still much like an animal. Nature endeavors for the emergence of a new man whose consciousness will be much higher than the mental consciousness.

Sri Aurobindo reveals that man is only a transitional being. Man lives in a mental consciousness but he is capable of acquiring the Supramental or the Truth – Consciousness. It is very much possible for man to live a perfectly harmonious, beautiful and conscious life. He further says that there is no reason to put a limit to evolutionary possibility of taking the present organization or status of existence as final. Man's greatness is not in what he is but in what he makes possible. His glory is that he is the closed place and secret workshop of a living labor in which superman hood is being made ready by a divine craftsman. But he is admitted to a yet greater greatness and it is this that, unlike the lower creation, he is allowed to be partly the conscious artisan of his divine change. His free ascent, his consecrated will and participation are needed that into his body ma y descend the glory that will replace him. His aspiration is earth's call to the supramental Creator.

Sri Aurobindo's thought of evolution is fundamentally different from Darwin's concept of biological evolution. He believes that Brahman is the source and summit of evolution. He says:

The evolution of Life in Matter, the evolution of Mind in Matter; but evolution is a word which merely states the phenomenon without explaining it. For there seems to be no reason why life should evolve out of material elements or Mind out of living form, unless we accept the Vedantic solution that life is already involved in Matter and Mind in Life because in essence Matter is a form of veiled Life, Life a form of veiled Consciousness.

The higher elements are involved in lower elements. The Spirit is involved in Mind, Life, and Matter. According to the Vedanta, the nature of the Spirit is Sachchidananda. This term has three words: Sat (Pure Existent), Chit (Consciousness-Force) and Ananda (Delight of Existence). The Divine is the eternal Reality or Trinity and the World evolves out of Him.

Sachchidananda
Super mind
Over Mind
Intuition
Illumined Mind
Higher Mind
Mind
Vital
Physical
The Subconscient
The Inconscient

In Sri Aurobindo's view, Matter and Spirit interact and complement each other according to the divine plan. He also emphasizes that the Spirit is asleep in Matter and is stirred into life and activity when the higher force descends into it. This is how Matter evolves into Spirit and the Spirit manifests progressively in Matter.

In the divine plan of evolution, Matter rising towards the Spirit, man has a crucial role to play. Man is at the summit and forefront of creation because he has a mind and self-awareness. Thus he is capable to participate consciously in the evolutionary movement. Other living species do not possess such as capacities. Evolution cannot stop with man. It must go beyond man to Superman hood, and ultimately to the Supreme Reality. There is an upward movement in man and far beyond man.

Man is the link between what must be and what is, connecting the Infinite Unmanifest and the multitude of manifest forms. He has a foremost place in the evolutionary scale, yet he is a transitional being. As Nature has prepared the way of man's appearance, so must emerge Superman, a higher species of being. Man must consciously participate in the evolutionary process of Nature. He must join his developed consciousness with the consciousness of the Divine to hasten the advent of Superman. In the evolutionary march of Nature, the emergence of a new race is inevitable.

Nature has developed man with the mind to his present capacities but "Mind is not a faculty for the seeking of knowledge" (*Theories of Indian Philosophy* 214). Sri Aurobindo says that" It is the power which interprets truth of universal existence for the practical uses of a certain order of things; it is not the power which knows and guides that existence and therefore it cannot be the power which created or manifested it" (*Contemporary Indian Philosophy* 84).

The mind proper is divided into three parts thinking Mind, dynamic Mind, externalizing Mind the former concerned with ideas and knowledge in their own right, the second with the putting out of mental forces for realization of the idea, the third with the expression of them in life. According to Sri Aurobindo, "In mind itself there are grades of the series and each grade is again a series in itself" (*Poetry and Poetic Theory* 70). There are successive elevations which it may conveniently call planes and sub-planes of the mental consciousness and the mental being.

"To you I come with this obeisance, by the perfect word I seek right mentality from the swift in the passage. Take delight, O Maruts, in the things of knowledge, lay aside your wrath unyoke your seeds"(*The Secret of the Veda, 266*)

There are several layers of the mind. The physical mind is described as a remnant of our earliest human evolution. It is steeped in fear, reaction and conservatism. It is concerned with the petty

thought-movements that continue mechanically in our mind without our wanting them and at times even without our knowing them. The mental physical is mechanical in its nature and keeps out repeating without use the past movement. Similarly, the vital mind is focused on our desires and emotions. And our thinking mind is the centre o logic and reasoning. The mind has several planes which one encounters while seeking higher consciousness. Our ordinary mind perceives light as grey and dense. It sees duality everywhere; black or white, truth or error, God or Satan. It can see only one thing at times as the truth and experiences joy in very small portions.

Man should become aware of these varied layers of his mind and rise to a higher consciousness than hitherto realized, where mentally irreconcilable situations can be reconciled. Sri Aurobindo says, " All life is yoga"(*Symbolism In The Poetry of Sri Aurobindo* 83) In his characteristic and brilliant equation of yoga with evolution, the synergy leads us ever upward and inward until, finally, it can transform the out ward nature. Man must accept life in order to transmute it completely. He should think of the evolution that lied ahead of him and the part he could play in it. The evolutionary process has so far been very slow and imperceptible. However, man can take an active and conscious part in his own evolution to accelerate its natural process.

CONCLUSION

This paper is to conclude the concept of man and the influences of nature. In this, Sri Aurobindo's integral approach seeks to transform man and the external world. Man should develop his inner being by manifesting the Divine and at the same time he must also try to transform the external world and life by bringing down the Divine into them. Thus, both the ascent to the static aspect and the descent to the dynamic aspect are equally important. There must be an integral transformation.

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Jhabvala's View of India in Her Novels

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Abstract:

Jhabvala, during her stay of three decades in this country, wrote about India, as a European and for the Europeans, yet, she has a place of her own contribution to Anglo-Indian fiction which would always remain incomparable and unique. The Indian image that she projected in her novels, will always be remembered by her readers. Her deep understanding, keen observation, and deep insight into this unknown society make her a novelist worthy of careful study and analysis. Jhabvala works are like a screen on which the readers can see thirty years of post-independence India projected in many of its hues and colours.

Introduction

The novel, of all the forms of literature, is perhaps the most faithful, convincing and effective vehicle of a nation's ethos. The novel is the most potent, pliable and popular means of communicating a creative experience, evoking touching sentiments and profound thought in and about human life. The whole mars of human experience furnishes the novelist with his raw material but he has to transform his unwieldy, shapeless, lawless and even anarchic data drawn from human life into a coherent and meaningful form of artistic excellence. It is, however, his judgments of human life and relationship which invests his writings with consistency, direction and shape. A novel is thus the sum total of the writer's experiences, feelings, imagination and moral vision.

A novelist can portray the life of the nation more authentically, convincingly and artistically than a poet or a dramatist can. The Indian novel in English, therefore, can do greater justice to Indian life and society than the Western novel, dealing with India, can do. The present century in its early thirties witnesses two types of novelists writing in English. They have been classified as the Indo-Anglian novelists and the Anglo-Indian novelists.

Ruth Prawer Jhabvala has been established as an Anglo-Indian novelist by the modern critics. She picked up the threads of Anglo-Indian fiction, with an entirely new perspective. Jhabvala has a unique place among the Anglo-Indian novelists of Post-Independence era. The question is why she is so different from other Anglo-Indian novelists. The answer is so obvious. She came to India when British Raj was no more. Indian struggle for freedom was over but faces with many other problems came with freedom. Jhabvala naturally got involved with these problems and wrote about them, humorously, ironically, critically and even bitterly.

Jhabvala's position as a novelist who writes about India is unique. On the one hand she belongs in the company of such Anglo-Indian writers as Rudyard Kipling, E.M.Forster and Paul Scott, while on the other; she is equally well placed among Indo-Anglian writers as R.K.Narayan, Anita Desai and Kamala Markandaya. as far as her fiction is concerned, India seems to be her theme and obsession. Her awareness of various aspects of Indian life establishes the Indianness of her fiction. Her close personal experience of Indian life and her exclusive interest in it as a novelist as well as her ability to identify very closely with Indians, notably with Indian women, takes her nearer to native writers like R.K.Narayan and Raja Rao. According to Vasant A.Shahane Jhabvala creative work provides ample evidence of her Indianness. The most important thing about her novels is that she writes everything in its minutest details, which makes her novels occasionally dull for the Indian, but enchants her European readers. In other words, she basically wrote for westerners and not for Indians. Jhabvala herself admits, "When one writes about India as a European and as English (as I do), inevitably one writes not for Indian but western readers"[1].

Her western readers naturally are not familiar with Indian landscape, life and culture, and hence Jhabvala is obliged to paint a large and comprehensive canvas, and this often leads to exaggerated portrayals in her novels, and perhaps this is the basic reason of her novels being most popular in the west than in India.

Jhabavala established herself as a great personality of India in the field of fiction. Although she has left India many years ago, she shines bright on the surface of Indian fiction. She has experienced both love and hate relationship with India. In this reference she has given many statements that show both experiences, "I went to India as it were blind. If my husband had happened to live in Africa, I'd have gone there equally blindly asking no questions and in fact fearing no fears"[2]. She again writes:

"The central fact of all my work, as I see it, is that I am a European living permanently in India. I have lived here for most of my adult life and have an Indian family. This makes me not quite an insider but it does not leave me entirely an outsider either. I feel my position to be at a point in space where I have quite a good view of both sides but am myself left stranded in the middle. My work is an attempt to charter this unchartered territory for myself. Sometimes I write about Europeans in India, sometimes about Indians in India, sometimes about both, but always attempting to present India to myself in the hope of giving myself some kind of foothold. My books may appear objective but really I think they are the opposite: for I describe the Indian scene not for its own sake but for mine. This excludes me from all interest in all those Indian problems one is supposed to be interested in (the extent of Westernisation, modernity vs. tradition, etc! etc!). My work can never claim to be a balanced or authoritative view of India but is only one individual European's attempt to compound the puzzling process of living in it."[3]

In the oft-quoted statements, Jhabvala respects her husband and his nation. She also expresses her love to India. In an interview with Ramlal Agarwal, she points out, "I loved everything during my first years here. I really loved it and was widely excited by it and never wanted to go away from here"[4]. At that time she loved everything she saw, the smells and sights and sounds of India, the mango and jasmine on hot nights, the rich spiced food, the vast sky, the sight of dawn and dusk, the birds flying about, the ruins and the music. The beggars and the poverty did not bother her but gave her delight and a subject to write. She considered them a part of life.

As a woman writer with her sensitive perception of the human relationship, Jhabvala handles the situations from the perspective of the relationship between man and woman in and out of marriage, which is most intimate and hence most complex. The problems of the expatriates, their psychological turmoil and cultural schizophrenia are dealt with insight and understanding. Jhabvala speaks of the emotional stages every European living in India undergoes. She says "first stage, tremendous enthusiasm – everything Indian is marvellous; second stage, everything Indian not so very marvelous; third stage, everything Indian abominable"[5].

Her foreignness gives her another artistic advantage. She can explore with considerable assurance the themes of the expatriate in India and the mixed marriage of Indian and European. Her novels are never about abstractions such as racial conflict or racial integration: they are about human beings - in love or in marriage – who may sometimes belong to wildly different raciest religions. These things which keep her novels a comparatively narrow set of lives are the source too of her power. She knows where she is strong and deliberately avoids themes, tones and characters which are outside her experience. She is a water-colourist rather than a full-blooded oil-painter.

Ruth Prawer Jhabvala has prying eye for such problems, the east-west encounter, westernization, education, sex and marriage, exploitation and democracy which are very common in Indian society. It is rightly pointed out that Ruth Prawer Jhabvala's pre-occupation with vital area of human experiences, namely coming together of diverse races and cultures, is revealed in her portrayals of incongruities of character and situation resulting from such a contact.

The major themes in Jhabvala's fiction are east-west encounter and marital dissonance which are mutually interlinked in their negative context. In the positive context these may be described as fruitful and happy relationships between east and west culminating in marital harmony and joy. Jhabvala is of course, very much concerned with the problems of European men and women trying to get adjustment to Indian society and its mores. She has presented India with its more affluent levels where English is often the language of daily living.

Jhabvala uses the novel as a powerful medium for presenting the problems of the Indian society and suggesting ways and means to solve these problems. All the novels taken together create a

macro-world, a world fully familiar to many Indians. This world has been recreated and represented through the medium of the ludicrous and humourous style. This world has been seen with the prying eye of the critic rather than with sympathetic eye of a friend.

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Threshold Based Color Image Segmentation for Groundnut Plant Images

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Abstract

Image segmentation is used widely in many applications. This paper gives a study of the threshold technique in color image segmentation. Image segmentation is fundamental approaches of image processing. Several general purpose algorithms and techniques have been developed for image segmentation. Segmentation applications are involving detection, recognition and measurement of features. The purpose of image segmentation is to partition an image into meaningful regions with respect to a particular application. Segmentation techniques can be classified as either contextual or non-contextual. Thresholding is a Non-Contextual Approach. This paper enumerates performance of threshold technique in color image segmentation for groundnut images.

***Keywords*--Image Segmentation, Threshold, Image Processing, Groundnut Images, Color Image.**

I. INTRODUCTION

Image segmentation is a mechanism used to divide an image into multiple segments. It will make image smooth and easy to evaluate. Segmentation process also helps to find region of interest in a particular image, as in [1]. One of the most important problems in color image analysis is that of segmentation. The fundamental idea in color image segmentation is to consider color uniformity as a relevant criterion to partition an image into significant regions. People are only interested in certain parts of the image. These parts are frequently referred as foreground or target and other is called background. Image segmentation is a technique and process which divide the image into different feature of region and extract out the interested target. It divides an image into a number of discrete regions such that the pixels have high similarity in each region and high contrast between regions. Properties like intensity, texture, depth, gray-level, color help to recognize similar regions, such properties are used to form groups of regions having a similar meaning. Segmentation is a valuable tool in many fields including health care, industry, remote sensing, image processing, content based image, pattern recognition, traffic image, video and computer vision. A particular type of image segmentation method can be found in application involving the recognition, measurement of objects and detecting objects in an image. Many researches have focused on gray-level image segmentation, whereas the color images carry most of the information. Segmentation techniques can be classified into the following categories: Edge-based, Cluster-based, Threshold based, Neural Network based, Region-based and Hybrid. Image segmentation based on thresholding is one of the oldest and powerful technique, since the threshold value divides the pixels in such a way that pixels having intensity value less than threshold belongs to one class while pixels whose intensity value is greater than threshold belongs to another class. Segmentation based on edge detection attempts to resolve image by detecting the edges between different regions that have sudden change in intensity value are extracted and linked to form closed region boundaries. Region based methods, divides an image into different regions that are similar according to a set of some predefined conditions, as in [2] .

The simplest method of image segmentation is called the thresholding method. This method is based on a clip-level (or a threshold value) to turn a gray-scale image into a binary image. There is also a balanced histogram thresholding.The key of this method is to select the threshold value (or values when multiple-levels are selected). Several popular methods are used in industry including the maximum entropy method, Otsu's method (maximum variance), and k-means clustering.

Recently, methods have been developed for thresholding computed tomography (CT) images. The key idea is that, unlike Otsu's method, the thresholds are derived from the radiographs instead of the (reconstructed) image [9],[10].

New methods suggested the usage of multi-dimensional fuzzy rule-based non-linear thresholds. In these works decision over each pixel's membership to a segment is based on multi-dimensional rules derived from fuzzy logic and evolutionary algorithms based on image lighting environment and application, as in [11].

The Neural Network based image segmentation techniques reported in the literature can mainly be classified into two categories: supervised and unsupervised methods. Supervised methods require expert human input for segmentation. Usually this means that human experts are carefully selecting the training data that is then used to segment the images. Unsupervised methods are semi or fully automatic. User intervention might be necessary at some point in the process to improve performance of the methods, but the results should be more or less human independent

II. RELATED WORKS

The segmentation is used to separate the image in parts that represents an interest object. There are several methods in that intend to perform such task that can adapt to different types of images that are very complex and specific. The goal of segmentation is to simplify and change the representation of an image into something that is easier to analyze and more meaningful. In the computer vision field to understanding images the information extracted from them can be used for other tasks for example identification of an airport from remote sensing data detection of cancerous cells, extracting malign tissues from body scans, navigation of robots. Now there is a need of a method, to understand images and extract information or objects, image segmentation fulfill above requirements. Practical application of image segmentation range from medical applications are Treatment planning, filtering of noisy images, Locate tumors, Measure tissue volumes, Diagnosis, Computer guided surgery, study of anatomical structure, Locate objects in satellite images like forests and roads, Face Recognition and Finger print Recognition. Many segmentation methods have been proposed in this literature survey. Segmentation technique are chooses over the level of segmentation are decided by the particular type of image and characteristics of the problem being considered.

Liju Dong et al (2008) proposed an iterative algorithm for finding optimal thresholds that minimize a weighted sum of squared error objective function. This method is mathematically equivalent to the well known Otsu's method. The computational complexity is linear with respect to the number of thresholds to be calculated as against the exponential complexity of the Otsu's algorithm.

K-Means method is compared to that of classical Otsu's method in multilevel thresholding by Dongji Liu et al (2009). This both method are based on a same criterion that minimizes within class variance. Otsu's method is an exhaustive algorithm of searching the global optimal threshold k-means is a local optimal method. K-means does not require computing a gray level histogram firstly. K-means can be more efficiently extended to multilevel thresholding method than Otsu's method. K-means method performs well with less computing time than Otsu's method does on three dimensional image thresholding. Numbers of methods are proposed for image segmentation on color and gray scale images that involves features extraction and image segmentation. The problems in image segmentation are slower processing time, long latency, and large memory storage. The Otsu's Thresholding algorithm is widely used in image segmentation that encounters the problem of computational time. Triclass thresholding technique is proposed for color and complex images also that reduces the computation time.

III. THRESHOLDING TECHNIQUE FOR COLOR IMAGE SEGMENTATION

Thresholding is the simplest method of image segmentation. From a gray scale image, thresholding can be used to create binary images. Binary images are produced from color images by segmentation. Segmentation is the process of assigning each pixel in the source image to two or more classes. If there are more than two classes then the usual result is several binary images. In image processing, thresholding is used to split an image into smaller segments, or junks, using at least one color or gray scale value to define their boundary. The advantage of obtaining first a binary image is that it reduces the complexityof the data and simplifies the process of recognition and classification[2].

The most common way to convert a gray level image to a binary image is to select a single threshold value (T) as in [2] .

The input to a thresholding operation is typically a gray scale or color image. In the simplest implementation, the output is a binary image representing the segmentation. Black pixels correspond to background and white pixels correspond to foreground (or vice versa). This method of segmentation applies a single fixed criterion to all pixels in the image simultaneously [8].

Image Segmentation = divide image into (continuous) regions or sets of pixels. The pixels are partitioned depending on their intensity value.

Segment image into foreground and background.

g(x, y) = 1 if f(x,y) is foreground pixel = 0 if f(x, y) is background pixel In real applications histograms are more complex.

With many peaks and not clear valleys and it is not always easy to select the value of T.

$$g(x,y) = \begin{cases} 0 & f(x,y) < T \\ 1 & f(x,y) => T \end{cases} \quad (1)$$

This technique can be expressed as:

T=T[x, y, p(x, y), f(x, y]

Where *f(x, y*) is the gray level and p (x, *y)* is some local property.

F(x, y) >T called an object point otherwise the point is called a background point [1].

A. Global thresholding

The global threshold applicable when the intensity distribution of objects and background pixels are sufficiently distinct. In the global threshold, a single threshold value is used in the whole image. The global threshold has been a popular technique in many years [6]-[8]. When the pixel values of the components and that of background are fairly consistent in their respective values over the entire image, global thresholding could be used.

Global Thresholding = Choose threshold T that separates object from background. If *g*(*x, y*) is a threshold version of *f*(*x, y*) at some global threshold *T*,

$$g(x,y) = \begin{cases} = 1 & if \ \ f(x,y) \geq T \\ = 0 & otherwise \end{cases} \quad (2)$$

There are a number of global thresholding techniques such as: Otsu, optimal thresholding, histogram analysis, iterative thresholding, maximum correlation thresholding, clustering, Multispectral and Multithresholding.

IV. PROPOSED METHOD FOR COLOR IMAGE SEGMENTATION

The basic steps for methodology of thresholding color images.The images were taken Groundnut farm by high resolution camera. Each image containing a rush of number of leaves and dissoved with infected leaves and healthy leaves. Here the basic steps for color image thresholding is given below.

Step 1*:* The color image is taken as an input I.

Step 2*:* Find the global threshold or determine the optimal threshold.

Step 3*:* Based on the input image intensity levels similarities between the intensities are grouped.

Step 4*:* Using the excitatory and inhibitory functions, the input I produces the output vectors J which construct from the global threshold value.

B. Algorithm

The algorithm contains the methodology for color image segmentation

Step1: Intialize value for T

Step2: Separate RGB, Planes.

μ_1, μ_2, μ_3.

Step 3: Separate high intensity pixels from original image $\mu_{(i,j)}$.

Using, $\mu_s = \mu_1, - \mu_1, \geq T$

Step 4: Reconstruct segmented image

$\mu_T = (\mu_i, \mu_j)$

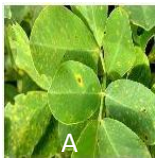
Step 5: Repeat steps for all Pixels

$\mu_{s(i,j)}$ i=rows

j=columns

V. RESULTS AND DISCUSSION

The following images contains original images and segmented images



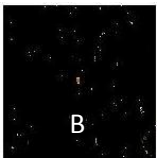


Fig. 1: 001.jpg

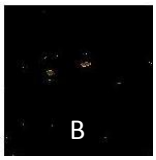
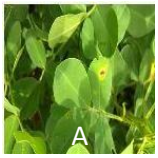


Fig.2: 002.jpg



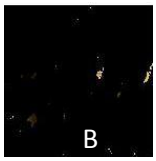
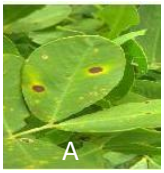


Fig.3: 003.jpg



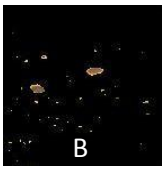
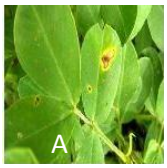


Fig.4: 004.jpg



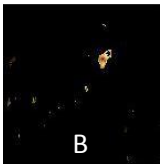
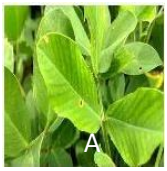


Fig.5: 005.jpg



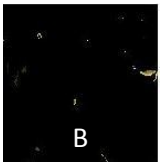


Fig.6: 006.jpg

Here ‘A’ refers the original image and ‘B’ refers the segmented images

A number of color image segmentation experiments are performed on rush images. The images are collected from a groundnut farm Using high resolution camera, containing 6 set of color images each one represented with real world pictures. Figure 1- 6 contains the different threshold values obtained using various segmentation methods for complex, real and low intensity images.Where ‘A’ represents the original images ‘B’ represents the segmented image and (001.jpg - 006.jpg). where the segmented images are clearly shown the defected area from rush image of ground nut leaves it shown in fig.(1- 6) ‘B’.

VI. FUTURE WORK

Supervised methods require expert human input for segmentation. Usually this means that human experts are carefully selecting the training data that is then used to segment the images. The future method has to be faster and achieve a better results in all kind of rush image for color segmentation.

VII. CONCLUSION

In this color image segmentation a new approach has been presented that is based on the R, G, and B channels, these channels will produce some kind of noise and to remove this kind of noise a median filtering process was proposed. It shows the fast to reach satisfactory results. In order to decrease the computation time the threshold values are initialized. The threshold values are calculated based on the type of image used.

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• Use British spellings and grammar.

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Introduction should be brief and must indicate the aim of the study and the essential back ground information. Introduction should pinpoint the hypothesis or the purpose of statement, how and why the purpose or hypothesis was developed and why the author deems it important.

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Kindly provide concise but detailed information about the material and the analytical, statistical and experimental details. This part should be as clear as possible to enable other scientists to repeat the research presented. The use of subheadings to divide the text must be encouraged. Primary headings should be in bold capital letters. Secondary or subheadings should be in bold sentence case. In case of animal/human experiments or clinical trials, authors must give the details of ethical approval.

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Data acquired from the research with appropriate statistical analysis described in the methods section should be included in this section. In this part, the same data/ information given in a table must not be repeated in a figure, or vice versa. Moreover, Tables and Figures should be self explanatory and it is not good enough to repeat extensively the numerals from tables into text and provide lengthy and unnecessary explanations of the Tables and Figures. Discussion should be related to the results to current understanding of the scientific problems being investigated in the field.

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Being the last part, it must focus on the main ideas of the work highlighting its significance and relevance.

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