GOODS & SERVICES TAX (GST) & CUSTOMS LAW

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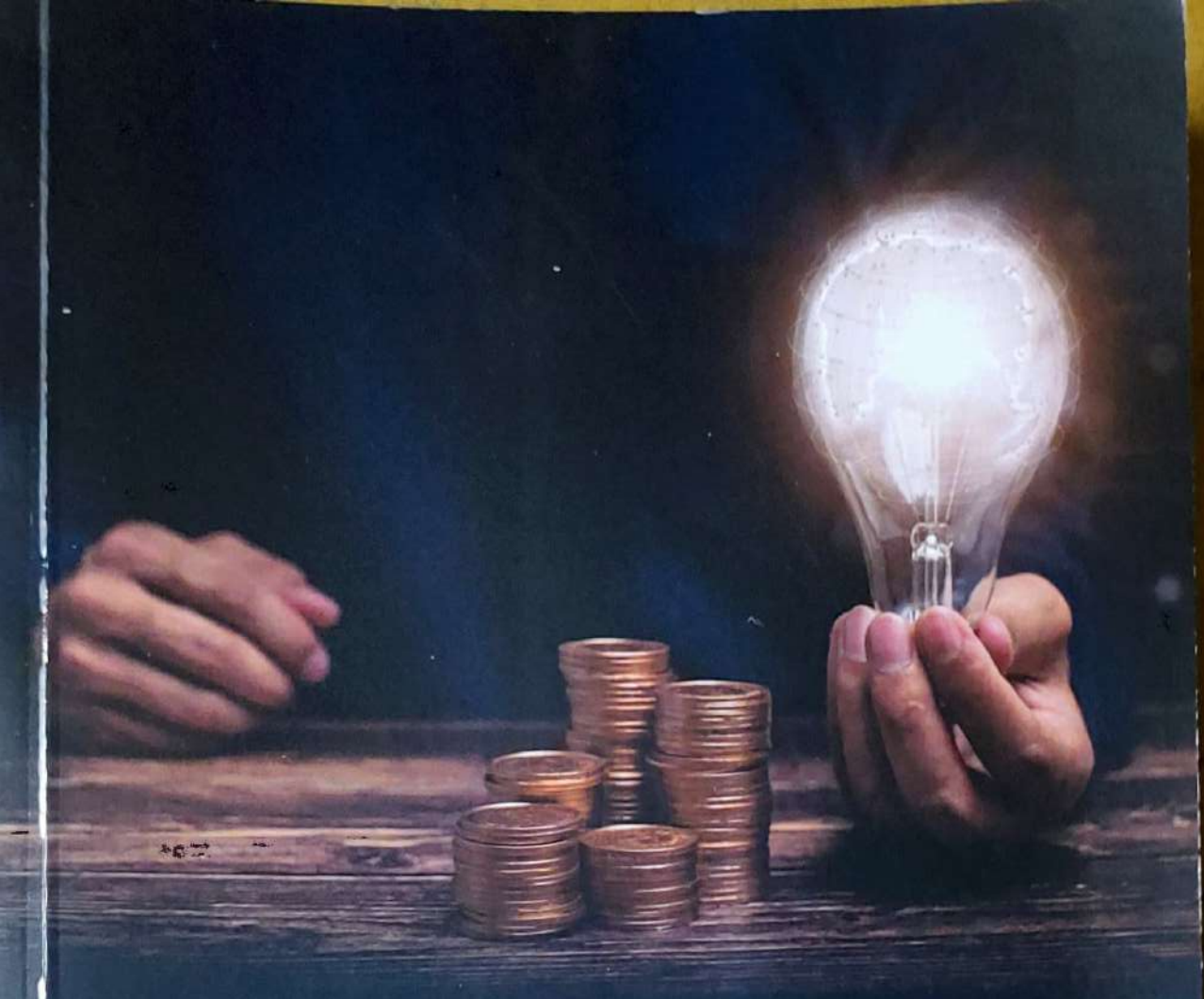

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Dr. S. Saravanan., M.Com., M.B.A., M.Phil., Ph.D., is working as Assistant professor of Commerce & Research Guide, Dr. Ambedkar Government Arts College, Vyasarpadi, Chennai-600039, Tamilnadu and he was produced 6 Ph.Dcandidate Awarded and 4 Ph.D candidate under my guidance in University of Madras. Prior to join the Government college, he has served as Professor & Head and Principal for over 25 years in Arts and Science college, Engineering College, Marine College in Chennai. He has so far written 10 books, 85 patents, 10 Indian design patent published and more than 50 research paper published in the journal of National and International level and the area of interest in teaching and research include HRM, Finance and Marketing field. He is the recipient of 8 Awards in different trust education and publication, Tamilnadu.

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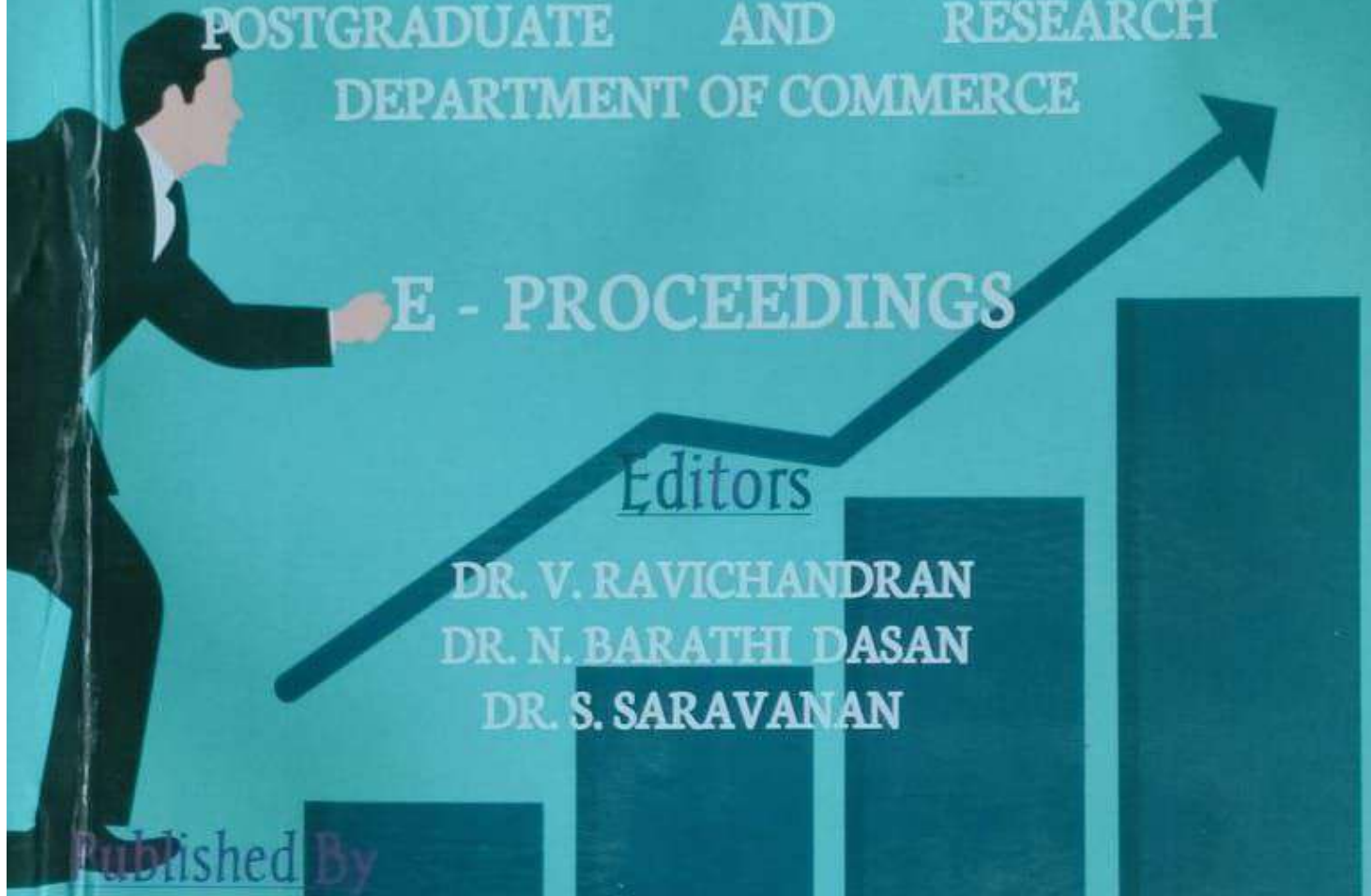

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A STUDY ON CUSTOMER PREFERENCE TOWARDS SELECTIVE FAST-MOVING CONSUMER GOODS WITH SPECIAL REFERENCE TO CHENNAI CITY

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ABSTRACT

The aim of this study was to identify the factors influencing consumer buying preferences and satisfaction with selective fast-moving consumer goods. The data was collected from four different select FMCG retail companies in Chennai. The study was based on structure questionnaires & questions covers service quality, physical facilities, employee prospective only. The primary data was gathered through structured and unstructured interviews and discussions with these respondents. Data was collected through the Google forms form the various respondents. The results showed that 55% of the respondents are purchasing selective fast-moving consumer goods from retail shops. The majority 54% of respondents are consuming Surf Excel detergent powder Brands. 45% of respondents were attracted by the price of the selected brands. The level of customer preference for FMCG products is highly satisfied. This study will help to highlight the consumer's satisfaction with online advertising.

Keywords: Consumer preference, Selective Fast-moving consumer goods, awareness

ANALYSIS OF SOCIAL MEDIA ADVERTISING AND ITS IMPACT ON IMPULSIVE BUYING BEHAVIOUR WITH RESPECT TO COSMETIC PRODUCTS IN CHENNAI

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ABSTRACT

Social media has pervaded the lives of all type of persons with messaging, content, and connectivity in ways never before imagined. There are many benefits of social media advertising such as increasing brand awareness, better return on investment, positive buying behaviour, etc. The social media advertising through its various attractive media such as photos, videos, stories, messages, etc. influence the impulsive buying behaviour of consumers to buy the products. The present study is conducted to analyse the aspects of social media advertising and their impact on impulsive buying behaviour of consumers towards cosmetic products in Chennai district.

The study is exploratory and descriptive in nature. By adopting Convenience Sampling method, the primary data was collected through questionnaire from 150 consumers who are buyingand using cosmetic products with the influence of various social media advertising in Chennai district. The researcher applied descriptive and inferential statistical tools for data analysis. The research reveals that female consumers have more perception on the various aspects of Social Media Advertising adopted by the cosmetic stores and have more impulsive buying behaviour towards cosmetic products than the male consumers. The study found that out of four aspect of Social Media Advertising, "Content Sharing" has more impact on the Impulsive buying behaviourof consumers than others. The study suggests that the management of Cosmetic stores (both online and offline) should formulate, amend and implement appropriate communication strategies for improving and enhancing positive impulsive buying behaviour of the consumers.

Keywords: Social Media Advertising, Information Quality, Convenience, Content Sharing,Credibility, Cosmetic Products, Impulsive buying behaviour.

A COMPARATIVE REVIEW ON STUDENTS SATISFACTION OF TEACHING IN GOVERNMENT AND PRIVATE COLLEGES – A STUDY WITH SPECIAL REFERENCE TO NORTH CHENNAI

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ABSTRACT

This study is conducted to compared Government and Private Colleges and also to investigate quality of a University. This study focuses on the context where teaching and satisfaction of students are the primary topic. Quality of education is important in universities as it helps students to be satisfied with their education. Student's satisfaction is often analysed based on the quality of education they receive in colleges. This study analysed the opinion and recommendation of the consumer towards quality of teaching in government and private colleges. 50 sample size is taken for the questionnaire. Sample should be representative so that the researches can make accurate estimate of the thoughts and behaviours of the large population. Totally, 50 consumers have been selected on the basis of convenience sampling, which is a non- probability sampling method.

Keywords Comparative study, Student's satisfaction, Government and Private College.

A STUDY ON VARIOUS FACTORS AFFECTING CONSUMER BUYING INTEREST TOWARDS NESTLE AND CADBURY CHOCOLATE PRODUCTS IN CHENNAI CITY

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ABSTRACT

Cadbury and Nestle are two of the most popular chocolate brands in India. The purpose of this research is to analyse various factors affecting consumer buying interest towards Nestle and Cadbury chocolate products in Chennai city. This study will assess the impact of price, quality, brand loyalty and promotional activities on consumer buying behaviour. The results from this study can be used to improve marketing strategies for both companies as well as provide insights into how consumers perceive different brands within the same product category. To conduct this research, a survey questionnaire was distributed among 100 respondents who have purchased either Nestle or Cadbury chocolates in the past one year in Chennai City. The findings from this research can help marketers understand which factors are important for driving sales of these two leading chocolate brands in Chennai city.

Keywords: Consumer buying interest, Chocolate, Brand loyalty, Cadbury, Nestle

A STUDY ON CUSTOMER SATISFACTION LEVEL TOWARDS THE QUALITY SERVICE RENDERED BY AGARWAL PACKERS AND MOVERS IN CHENNAI REGION

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ABSTRACT

The main aim of the study is to find out customer satisfaction towards the quality of servic rendered by "AGARWAL PACKERS AND MOVERS PVT LTD" Business opportunities ca take many forms and marketers have to be good at spotting them. A company can customize service that was formally offered only in a standard form and it can introduce a new capabilit by delivering the Service at a faster rate. Customers are the king of every business. A study o customer satisfaction helps the marketers to know how the individual, Group of organizatio select, by use and dispose of goods, services or idea. It has enabled the researcher to conduct general survey to know about their taste and the preference and to know what they want as earl as possible. Satisfaction is a person's feeling of pleasure and disappointments resulting fro comparing a product presented and performances in relation to his (or) her expectations.

Keywords: Customer satisfaction, Quality services, Agarwal packers and movers.

A STUDY ON EMOTIONAL INTELLIGENCE AMONG YOUNG WOMEN IN TIRUVALLUR DISTRICT, TAMILNADU

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ABSTRACT:

Young women experience issues in a variety of life domains, including educational, social, familial, and emotional ones, in today's fast-paced, competitive society. Their emotional and mental health are negatively impacted by these issues. Young adults' emotional well-being is influenced by a variety of emotional intelligence abilities, including self-awareness, emotional regulation, empathy, social skills, motivation, and self-esteem. Numerous studies in the field of positive psychology have been undertaken with a particular emphasis on the function that emotional intelligence and positive affect play in the prevention of physical illness and mental disorders. Thus, the current study's objective was to investigate young women's emotional intelligence. 80 teenage girls from Tiruvallur District, made up the samples. The data analysis method employed was descriptive statistics, such as frequencies and percentages. According to the findings of the current study, the majority of young women had emotional intelligence scores that fell into one of four categories: average, below average, low, and severely low. Only a small percentage of them had scores that were above average. The results of the current study also showed that none of the young ladies had high or extremely high emotional intelligence. Due to their hectic work and family lives and overburdened lifestyles, women were shown to have worse emotional intelligence skills than men.

Keywords: Emotional Intelligence, Young women, Self-esteem, Regulation, Empathy, Social skills, Self-esteem, Stressful.

A STUDY ON CONSUMER BEHAVIOUR TOWARDS FMCG PRODUCTS

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ABSTRACT

The FMCGs sector is an exceptionally powerful area in India. A significant objective is to fulfil the requirements and needs of purchasers. This article features the purchaser conduct towards quick buyer merchandise. Making mindfulness with respect to items is crucial for get the market in the serious world. As we probably are aware that when client fulfilled the buying level of the client would continuously increment by that the deals of the organization will increment. This study accentuated that shoppers have more significance to the nature of quick purchaser merchandise buying ways of behaving of clients on chose brands. As of late, these items are typically consumed by all social orders of people groups despite the fact that the provincial purchasers are likewise involving their demandable marked items in all item classifications and furthermore impressive part of their pay spent on these products.

Keywords: Customer Satisfaction, Customer Awareness, Customer Intension towards Fast Moving Consumer Goods.

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A Review of Frameworks to Protect Cloud Files Storage

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Abstract

The cloud computing file storage is the storage of using the network of remote hosted file servers on the Internet. The cloud store or manage or processing enormous number of files without use the local server or personal computers. In this paper we discuss about protected cloud file storage in remote hosted servers and some of the techniques used to prevent our individual data files from unauthorized users. In this study we need make a secure file storage using file encryption & decryption algorithm, strong password management using a real password not mention anywhere to the server, hash file names maintained in servers not original file names. Best suited methods are going to prefer in framework for a cloud may possible to adapting techniques. Preferred algorithm is to secure file to transfer over the servers. Unused administrative ports are locked due to unauthorized access. Complete secure file storage might able to give this framework. Security framework is providing high file security, accessibility and integrity for the user files.

Keywords: cloud computing, encryption, proxy, security risk, security challenges.

1. Introduction

Cloud computing is the well organized and quick developing technology as well as their popularity. A method for storing and retrieving data in the cloud that gives servers and apps access to data through shared file systems is known as cloud file storage. The merits of cloud storage are well liked storage, on-demand resources, low-cost, uncomplicated storage management and simple maintenance of the users [3]. The data are stored in the cloud are differently located data centers, in which are geographically scattered, so the user's file will not be under their control in cloud. Adequate policies and techniques of access control are needed for controlling the user's permission over their data stored in the cloud. Only authorized users of the file must be allowed to access their information and these limitations are provided by the cloud service provider. The heavy secured access control and protection protocols are needed with respect to the confidential level of the file that is stored in the cloud.

In 2009, some heavy security issues occurred in many IT concerns that include Amazon, Google and Microsoft. Millions of cloud user was affected due to these circumstances so serious congregation is required to improve the security of the cloud user files. Providers have complete authority to the data and are free to carry out any authorized actions including copying, destroying, altering, etc. [3]. Control over the virtual machines is, to some extent, maintained by cloud computing. This provides unrestricted access to the data significant security risks compared to the general cloud computing model depicted in figure 1.

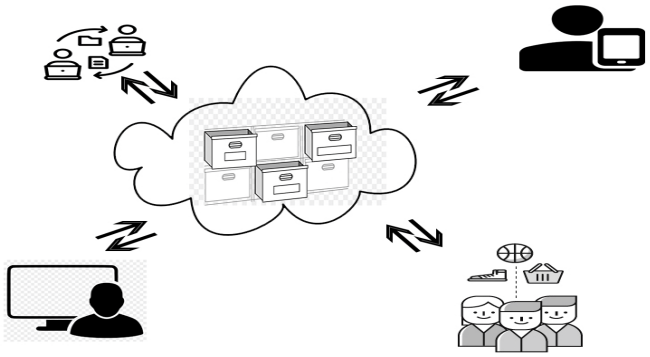

Figure 1: Different types of users on the drive

The only cryptographic methods provide a little more security than raw data, but they do not grant complete control over the data that is stored. Virtualization and multi-tenancy are two aspects of cloud computing that also present different attack opportunities from the basic cloud architecture [5].

2. Cloud Security Risks

Uncontrollable data companies now have to deal with contemporary security risks including losing control over sensitive data as cloud services like Google Drive, Dropbox, and Microsoft Azure become a well-organized component of company processes. The issue here is that, when using third-party file sharing services, the information is typically taken outside of the organization's IT environment, which means that the privacy settings for the information are outside of the industry's control [10].

2.1 Data leak is the most of businesses that have held back from take on the cloud have done so in the panic of having their data leak. This achievement comes from the fact that the cloud is a multi-user domain, in which all the resources are shared. It is also a third-party service, which means that data is possibility at risk of being viewed or mislead

Framework for Stock Price Forecasting Using Data Mining Techniques

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Abstract

The main objective of any stock market analyst is predicting stock prices since a reasonably accurate prediction has the possibility to yield high financial benefits and hedge against market risks. Historical data on stock prices were collected from BSE and pre-processed. This work has applied Holt-Winters technique and Autoregressive Moving Average (ARIMA) model for forecasting future stock prices using the same set of data. The future stock prices were predicted using the ARIMA model using arithmetic mean in the first phase. In the second phase results of ARIMA model have been improved by using geometric mean. The accuracy of both ARIMA models has been determined using RMSE. Finally, a hybrid ensemble model has been developed using five different algorithms and the accuracy has been measured using voting classifier.

Keywords: ARIMA, Arithmetic Mean, Geometric Mean, Holt-Winters, Time Series, Prediction

Introduction

Key objective of any stock market analyst is predicting stock prices since a reasonably accurate prediction has the possibility to yield high financial benefits and hedge against market risks. Many researchers from different areas have proposed various methods for forecasting stock prices. **Time series modelling** which deals with time-based data is one such method. Time series is a set of observations or data points taken at a particular time usually at equal intervals and it's used to predict future values based on the preceding observed values. Time series based forecasting is a key concept in data science, which finds wide application in multiple areas of business. Time series are implemented in statistics, stock market forecasting, signal processing, pattern recognition, weather forecasting, earthquake prediction, astronomy, and largely in any domain of applied science and engineering which involves the calculations should be in equal intervals like a day, a week, a month and a year.

While there are multiple forecasting techniques, exponential smoothing and moving average are the two primary techniques. Both these techniques help to remove noise of the data and smoothen the time series. However, they differ in the approach adopted to smoothen the data. While exponential smoothing gives more weightage to recent data, moving average assigns equal weightage to all data points and calculates their average. Thus, exponential smoothing removes noise from the data according to the smoothing factor and the moving average is removing noise using the mean value of data points.

This work has applied Holt-Winters technique and Autoregressive Moving Average (ARIMA) model for forecasting future stock prices using the same set of data. Further, the work also compares the results produced by the two models to identify the efficient model for prediction of future prices for the stocks under consideration.

Then the study has used geometric mean instead of arithmetic mean in the ARIMA model for forecasting stock prices. The prediction results have been compared with the predictions made by the AM-based ARIMA model in the previous section. The comparison shows that prediction accuracy of the GM-based ARIMA model is higher than the output of the AM-based ARIMA model. Finally, ensemble learning to measure the prediction accuracy of the geometric mean [GM] based ARIMA model implemented in the previous section for prediction of stock prices.

Literature Survey

A study conducted by authors of [1] found that Holt's method performs better for short-term prediction of stock prices than a longer timeframe. According to Weinstein [2], stock prices move in 4 stages and the Holt-Winters technique can be deployed to predict these stages which would, in turn, help investors to make profits in stock trading.

Ariyo Adebivi et al. in [3] explored the extensive process of building ARIMA models and their model did a satisfactory job in predicting the stock prices of Nokia and Zenith Bank. Studies conducted by the authors of [4] concluded that ARIMA as an algorithmic methodology to transform the series is better than predicting directly, and also it yields more absolute results.

While many previous studies had used the ARIMA model for forecasting, most of these studies had used arithmetic mean [AM] for averaging data sets. With the need to improve the accuracy of forecasts, researchers and academicians have started using the geometric mean [GM] for forecasting. Investment managers usually consider the GM a more accurate measure of returns than the AM [5] because the effect of outliers on the GM is mild while the AM has a severe effect of outliers. With stock prices being highly volatile, the outlier effect needs to be moderated to arrive at accurate results. Furthermore, the longer time horizon of investments makes the effect of compounding more critical and hence also the use of geometric mean.

Evaluation of divergent diabetes prediction models through comparative analysis

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Abstract

One of the largest health issues affecting millions of people worldwide is diabetes. Diabetes that is not under control increases the risk of cancer, renal damage, heart attack, blindness, and other diseases. Healthcare providers must use diverging algorithms if they are to be more successful at diagnosing diseases. This research compared multiple algorithms that can detect diabetes risk early in order to enhance the medical diagnosis of diabetes. A clinical dataset from an authorised dataset is one of the real datasets that were analysed for this study. Here, numerous diabetes disease prediction systems that have been put into practise were discussed. Six proposed algorithms have been successfully used in the experimental study such as Decision Tree (DT), Optimized Support Vector Machine (OSVM), Point- Based Algorithm (PBA), Euclidean Distance with Manhattan Metric Measures (EDMM), Hybrid Pruning with MD Measures (HPMMM), Enhanced Sunflower Algorithm (ESA). The obtained results showed that the proposed method based on the ESA technique provides great performances with an accuracy of 98.8%. ESA is the most accurate Methodology with the uppermost accuracy rate with the balanced data set Finally, this research makes it possible for us to accurately determine the level of prevalence and prognosis of diabetes.

Keywords: Diabetes, Decision Tree, HPMMM, Enhanced Sunflower

1.Introduction

High blood sugar levels are one of the main causes of diabetes. The body needs glucose to function properly. In people with type 2 diabetes, the lack of exercise and unhealthy lifestyles are also contributing factors. A large amount of sugar in the blood can lead to diabetes. The body cannot properly convert food into insulin, which results in the sugar remaining unabsorbed. This condition can affect various organs and blood vessels. Type 1 diabetes is a type of disease that affects children [1]. It can be caused by the destruction of the cells that produce insulin in the body. Also known as juvenile diabetes, this condition usually occurs after the age of 40. With proper diet and regular exercise, people with diabetes can manage their condition. A type 2 diabetes is referred to as insulin-dependent or insulin-free diabetes. This condition occurs when the body does not produce enough insulin to properly convert glucose into energy [2]. On the other hand, in type 1 diabetes, the body makes enough insulin to treat the condition. Gestational diabetes is a type of disease that occurs when the body does not produce enough insulin to properly convert glucose into energy. This condition can be triggered by the changes in hormones during pregnancy[3]. Moreover here, analysed the effectiveness of the DT, OSVM, PBA, EDMM, HPMMM, and ESA. The various steps involved in this process given below.

(i) Six Various Algorithms were used, namely, DT, OSVM, EDMM, PBA, HPMMM, and ESA

(ii) The goal of feature selection is to determine the most important variables.

(iii) For the purpose of finding the highest level of accuracy, data balancing is used.

(iv) Proposed a Methodology for Enhanced Sunflower Algorithm for Risk Prediction

2. Literature Review

The techniques used in this study are geared toward improving the accuracy of the diagnosis and categorizing the data. Machine learning is mainly focused on learning about the patterns in the data collected from the diabetes patient. In order to help individuals with diabetes manage their condition, healthcare systems offer various services. These include treatment plans, education, and support services.

One of the most common issues that the medical profession faces is diabetes. The goal of this study is to use divergent techniques to identify people with diabetes based on their clinical and personal information. The following section summarizes the various studies that were conducted on the use of machine learning in the diagnosis of diabetes. It is useful to note the areas of weakness and potential improvement in the treatment regimens of diabetic patients with machine learning.

In the previous section, Sun and Zhang et.al methodology about the various types of deep learning techniques that can be used to classify and improve the accuracy of the diagnosis of diabetes.[4-6]. Qawqzeh et al. analysed the data collected from 459 individuals with diabetes. They found that the classification accuracy of the model was 92%, but it could not be validated due to its lack of comparison with other models.[7]

Survey on Various Algorithms of Machine Learning and Deep Learning That Can Be Used for Real Estate Price Prediction

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Abstract – Real estate price prediction will pay an important role in this current economy. Machine is going to play a major role in future analysis and prediction. Various machine learning and deep learning methods can be used to predict the pricing, so that the customer gets the maximum advantage of the market. This paper is used to study the various machine learning and deep learning methods and algorithms that can be used to predict the real estate pricing in Chennai.

***Key Words*:** Artificial Intelligence, Machine Learning, Algorithms, Neural Networks, Deep Learning.

1. INTRODUCTION

A constant paradigm of purchasing and selling homes and property has persisted from the beginning of time. The type of home a guy purchases is frequently indicative of his wealth, but in this case, there were several intermediaries. However, this barter system has also altered significantly with the advancement of technology. Using technology to complete the procedures has made purchasing real estate incredibly straightforward.

There are numerous websites in India that gather information about homes that are for sale, however there are instances where prices for the same flat alter on multiple websites, creating a lot of confusion. Machine learning and Deep Learning can be used in to forecast housing costs.

A subset of Artificial Intelligence (AI) is Machine Learning (ML). We can make programmes learn from experience in the same manner that people do by using machine learning. These programmes learn, develop, and alter based on experience when data is supplied into them. Algorithms that learn iteratively from data are used for this. Applications utilise pattern recognition to react to different types of data. Machine learning is the capacity of an application to respond to fresh input through iterations. Machine learning algorithms learn how to predict outcomes based on prior examples of correlations between input data and outcomes, or training data. A model of the link between inputs and outcomes is continually developed by testing its hypotheses and making corrections as necessary. Machine learning is a group of automated methods for identifying patterns in data. It is a technique for creating something akin to the line of best fit. When the data is really complicated and contains many aspects, it is useful to automate this process.

The classic machine learning algorithms typically only use a single period of data as a sample, ignoring a lot of implicit information that accumulates over time (Baek and Kim, 2018). In order to overcome this issue, deep learning capable of processing time-series data as well as data from many periods can be used for predicting pricing in real estate. Deep learning models stand for a new learning paradigm in artificial intelligence (AI) and machine learning. Recent breakthrough results in image analysis and speech recognition have generated a massive interest in this field because also applications in many other domains providing big data seem possible. On a downside, the mathematical and computational methodology underlying deep learning models is very challenging, especially for interdisciplinary scientists. Hence, a basic understanding and availability of various algorithms and methods in machine learning and deep learning is important to be prepared for future developments in AI based price prediction in real estate.

2. TYPES OF MACHINE LEARNING

2.1 Supervised Learning

A training data set comprising labelled data or data with a known output value (such as rural/not rural or house price) is necessary for supervised learning. Through supervised learning, difficulties with classification and regression are resolved.

2.2 Unsupervised Learning

Strategies for unsupervised learning Don't look for patterns or organisation in the data on your own without using a training set. Unsupervised methods can be used to tackle clustering issues.

2.3 Semi-Supervised Learning

Mostly unlabeled and a minor quantity of labelled input data are used in semi-supervised learning. Unsupervised learning tasks can be carried out far more effectively when only a modest amount of labelled data is used. In order to arrange the data and produce predictions, the model needs to learn its structure.

2.4 Reinforcement Learning

The environment's input data is used as a stimulus to determine how the model should respond in reinforcement learning. Feedback is created by the environment rather than a training procedure like supervised learning. Robot control uses this kind of procedure.

COMPOUND WORD FORMATION USING SANDHI RULES IN TAMIL LANGUAGE

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ABSTRACT:

Tamil language, a member of the Dravidian Language family, is spoken primarily in the Southern part of India. It has the oldest literature among the other Dravidian languages like Malayalam, Telugu, Kannada which also contributes to the Dravidian languages. In Tamil language, grammar representation is classified into various divisions, the major divisions include: ezuthu (Letter), sol (Word), Porul (Meaning), Yaappu (poetic structure) and aNi (Poetic decoration). For any language, grammar is used to explain the rules and regulations of understanding the language while speaking and writing. Punarcchi rule (புணர்ச்சி விதி) in Tamil grammar explains the change in pronunciation of words when two words come together. For some languages, this change naturally occurs and for some, the change does not occur. The proposed work reads two words in Tamil language and combines them based on the Sandhi rules. The first word, defined as prepositional word combines with second word, termed as derived word, based on the Sandhi Rules. This process is also known as Compound word formation. The Sandhi Rules define many variations like appearing of a letter, or the final character changing to another letter etc. depending on the words being combined. In this paper, an algorithm for Compound Word Formation using Sandhi Rules (CWFSR) has been proposed. Relevant rules are applied by analysing the characters of input words.

Keywords: Natural Language Processing, Rule based approach, word level rules, Tamil Unicode, Sandhi analyser, coining of words.

1. INTRODUCTION:

Tamil language belongs to a branch of the Southern Dravidian Family, is the oldest classical language spoken primarily in India. It is one of the conventional language available in the Dravidian family and is spoken predominantly in Tamil Nadu, Sri Lanka, Malaysia and Singapore. Unlike other languages of India, Tamil is independent of Sanskrit. Tamil is one of the oldest languages which holds a wider grammar base and great literature collection. Among all the literature works in Tamil, Tholkappiyam is considered the oldest work in Tamil, which gives the knowledge about Grammar in Tamil language.

Tamil language is of agglutinative nature, which suffixes the root word with marking for noun case and number, verb tense and other grammatical representations. Tamil languages has word representation in five parts namely, eluthu, sol, porul, yappu and ani. The last two representations are generally with poetic representation.

The language has 12 vowels and 18 consonants. They combine to form 216 compound characters. There is one special character in tamil language represented as "ஃ", termed as Ayutha ezuthu (ஆய்த எழுத்து), which is neither vowel nor consonant including which it gives a total of 247 characters (*uyirmeyyeḻuttu)*. The vowels are called uyir ezhuthu and the consonants are classified into three, vallinam - hard, mellinam - soft, and idayinam – medium.

In Tamil, words are characterised as lexical root with suffixes attached to it which represents an inflectional change undergone by the word or change the meaning of the word or tagging of words [1]. The inflectional suffixes represent the change of word to represent person, mood, number and case. Noun and Verb terms, both undergo inflectional changes.

1.1 SANDHI RULES - PUṆARCCHI ILAKKAṆAM:

Grammar is a collection of rules which helps one to understand the ways to write, talk and use the language properly. A word can give a meaning as a single word or when combined with more words. In Tamil Grammar, when two words are combined together, rules are applied for proper combination of the words. When words are combined together, they are termed as a phrase, which is explained by Punarcchi Illakanam. When two words are combined, they result in one word, this combining of words takes place by Tamil Punarcchi Vidhi (Sandhi rule). The last letter of the first word (நிலைமொழி) and the first letter of the second word (வருமொழி) undergoes a change. This change can be occurrence of a new letter, replacement of letter or disappearance of letter. Punarcchi Illakanam are categorised as Vigarap Punarcchi (விகார புணர்ச்சி) and Iyalbu Punarcchi (இயல்பு புணர்ச்சி). Within these, there are many sub categories which define more rules applied during the combination of words.

2. LITERATURE SURVEY

The agglutinative nature of Tamil language, allows generation of new phrase when more than one words are combined together. Sandhi rules define the different changes that are undergone by a morpheme when combined with another morpheme. Not much of work is done in this area of languages. Some scholars have attempted to design compound word generators for some languages.

Jeena Kleenankandy has designed a Sandhi-rule based Compound word generator for Malayalam language [3]. The implementation includes four major sandhi rules for Malayalam language and the concatenation is limited to two

Modified Adaptive Boost Algorithms for Prediction of Air Pollutants in various Seasons

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Abstract

Seasonal variations in air pollution are related to the diversity of the seasons and particularity of the months that make up the so-called summer and winter seasons. The occurrence of greater air pollution levels in specific months of the year is related to the kind of climate and therefore to the various atmospheric conditions in those months, the varying weather conditions on any given day and anthropogenic activities. Due to cyclical fluctuations in energy usage (the burning of biomass) and atmospheric stability, the pollutants were found in much higher quantities during summer season and in lesser concentration during winter season. The major objective of this work is to understand the variation among the pollutants RSPM, SO2, NO2 in various seasons such as summer, autumn, spring and winter. The Pollutant data set for four year duration 2017-2021 was taken from Chennai suburbs such as Adyar, Anna Nagar, Kilpauk, Nugambakkam and T.Nagar and analyzed. A Novel algorithm Modified Ada Boost Algorithm (MABA) was developed in this work to forecast the seasonal variations of air pollutants RSPM, SO2, NO2 for the year 2021.The algorithm Modified Ada Boost Algorithm (MABA) was compared with Ada Boost Algorithm(ABA) and Modified Ada Boost Algorithm(MABA) shows improved prediction accuracy and lesser execution times.

Keyword: Pollutants, Ada boost, MABA, Seasonal variation.

1. Introduction:

Air is one of the most essential natural resources for the existence and survival of the entire life on this planet. All forms of life including plants and animals depends on air for their basic survival [2]. Nearly everywhere in the world, the urban environment is plagued by excessive levels of air pollution. Different cities and suburbs have different levels of poor urban air quality, which is largely due to regional sources such as anthropogenic pollutants. Understanding the variance in air pollution concentrations and distributions requires an extensive study of meteorological conditions. Dial-level air pollution concentrations are influenced by meteorological driving factors, which also affect the makeup of aerosols. This study attempts to identify seasonal and long-term variations in main air pollutant concentrations at a subset of Chennai air quality monitoring sites [1].

Various factors, including temperature and climate, as well as human activity, have been linked to seasonal variations in air pollution, which show an increase in some pollutants:

Spring

Due to agricultural activity, ammonia (NH3) concentrations rise in the spring. The secondary particulate matter is released from the fertilizer and manure applied to fields prior to planting, which then interacts with other substances already present in the atmosphere to form further airborne particles ($PM_{2.5}$). In actuality, the source of up to 58% of the particulate matter in different cities is agricultural ammonia.

Summer

Ground-level ozone levels can reach a high in the summer due to emission of Volatile Organic Compounds (VOCs) as a result of heat and sunlight reacting to form Nitrogen Oxides (NO_2) and Volatile Organic Molecules to generate Ozone (O_3). This is especially concerning in terms of how ozone affects health, given that more than 98% of people are exposed to levels of ozone that are higher than those advised by the World Health Organization (WHO).

Autumn

Deciduous trees release some Volatile Organic Compounds (VOC) like acetaldehyde and methanol as a result of dropping and decomposing leaves. Plants produce VOCs for a variety of reasons, such as to communicate with other plants, to adjust to environmental stress, and to defend themselves against insects. Because of their capacity to combine with nitrogen oxides in the face of sunlight to produce ground-level ozone, VOCs are a danger to human health [3].

Winter

The phenomenon known as a temperature inversion makes smog a serious problem in the winter. In most cases, the temperature of the air drops as one ascends. But during the winter, the air nearest to the ground may be colder than the air over it. The presence of cold air results in high atmospheric pressure. It makes it possible for solar radiation to warm the earth. Due to the absence of cloud cover at night, the collected heat is dissipated, forcing it to ascend and then trapping the now-cool airflow at the surface. Pollutants such as Carbon Monoxide (CO), nitrogen oxides, particulate matter, and Volatile Organic Compounds are consequently held at ground level until the temperature changes. It was

A SURVEY OF DATA MINING TECHNIQUES APPLIED TO WATER QUALITY PREDICTION

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ABSTRACT:

The world today facing the problem of ever increasing level of pollution of water bodies. The seriousness of this problem calls for handling huge amount of data. The variety and size of information to be processed for proper trend analysis towards water quality management makes use of all Data Mining concepts all the more relevant. There are many classification algorithms used in data mining. The appropriate use of classification algorithm will enhance the prediction of water quality. This paper conducts a survey on recent researches in this field up to date. The study reviews on the techniques of analyzing water data to develop proper model for improving water quality prediction.

Keywords: Water Quality Prediction, Data Mining, Classification.

INTRODUCTION

Data mining is an approach for information extraction from huge amount of data stored in the database. Data mining can be considered as an approach to determine the valid, novel, useful, and ultimately understandable data patterns in a large database. Valid - extracted pattern can be used for new dataset. Novel- the patterns are non-trivial. Useful - extracted pattern used for future activities. [1] Understandable – discovered pattern should be simple and interpretable**.** one of the areas were data mining could provide potential support is in water quality prediction.

Water is a valuable natural resource for all living beings since the quality of water is a vital concern for mankind since it is directly linked with human welfare. Only tiny fraction of the planets abundant water is available to us as freshwater. Water [2] is the most vital element among the natural resources, and is critical for the survival of all the living organisms including human, food production, and economic development. Today there are many cities worldwide facing an acute shortage of water and nearly 40 percent of the world's food supply is grown under irrigation and a wide variety of industrial processes depends on water.

Water quality is predicted using the parameters like DO, Temperature, pH, conductivity, Biochemical Oxygen Demand (BOD), Nitrate, Fecal Coliform, Total coliform. All these factors were needed to analyze the water quality.

The Objectives of this work are:

- Review different papers in Water Quality Prediction
- Review the Data Mining techniques applied Water Quality Prediction

II. LITERATURE SURVEY

Kamakshiah.kolli et al. [3] have emphasized the ground water quality, sources of ground water contamination, variation of ground water quality and its spatial distribution using several Data mining stages including Data cleaning, Data selection, Data reduction, Information, Extraction, Interpretation and reporting. The process of analyzing India's river water can take long period of time to achieve the desired accuracy such that the author has decided to speed up the analysis using only the Krishna river water, on the southern bank Tadepalli, which has average elevation of 22metres (72 feet). The villages in Tadepalle at Guntur district include Chirravur, Gundimeda, Ippatam, Kolanukonda, Krishnanagar, Kunchanapalli, Mellampudi, Penumaka, Prathuru, Tadepalli, Undavalli and Vaddeswaram. Total area consists of 19618.87 acres, the maximum humidity is in summer and early winter is the period of minimum humidity.

The Annual rainfall of the study area is1040 mm The maximum temperature is 38°C, while the minimum is 18 °C and the Population is 80,887. The dataset selected to measure the water quality is pH, Electrical conductivity, chlorides, sulphate, nitrates, total hardness, total dissolved solids, fluorides, alkalinity, sodium, potassium and phosphate. A total of 45 water samples of Krishna river were collected. The Author focused on water quality index to reduce the large amount of water quality to a single numerical value that expresses the overall water quality to certain location based on water quality parameters. The main aim of Water Quality Index (WQI) is to turn complex data into information which is understandable and useable by the public.

A SECURED ENERGY EFFICIENT CLUSTERING ROUTING PROTOCOL USING SWARM INTELLIGENCE BASED LOAD BALANCING APPROACH FOR WIRELESS SENSOR NETWORK (WSN)

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ABSTRACT: A unique subset of adhoc networks known as a Wireless Sensor Network (WSN) is a developing tech that is finding growing success in the military, and scientific fields. Because the battery needs to be very small, the size of the sensors is a significant barrier, especially when it comes of energy independence and lifespan. The data load of the sensor nodes should be balanced in order to spread the energy expended throughout the wireless sensor network. One of the main strategies for load balancing is clustering. This paper suggests a brand-new clustering method that uses less energy and extends network lifetime, which is crucial for networks operating in inhospitable locations. By selecting CH(Cluster-Head) well-established the nodes residual energy, this research improved the CH selection technique and created the Energy Efficient Sleep Awake Aware (EESAA) load balancing protocol. The overall distance among nodes, base station and the amount of data that is sent serve as indicators of WSN efficiency. The efficiency of the cluster may be impacted by Cluster-Head, which is solely responsible for generating the cluster and cluster nodes.In this, the cluster head selection is complete by Enhanced Whale Optimization Algorithm (EWOA) for improving the performance in the network.Finally, the single hop detection based security model is presented for detection of clone node.The efficiency of the method is assessed and contrasted with other clustering protocols in a simulation using NS-2 to verify the benefits offered by the proposed technique.

KEYWORDS: Energy Efficient Sleep Awake Aware (EESAA) protocol, CHs selection technique, Enhanced Whale Optimization Algorithm (EWOA) and single hop detection based security model.

1. INTRODUCTION

An infrastructure that combines sensing, processing, and communication is known as a wireless sensor network (WSN). WSN is created by a sizable number of sensor nodes that are arranged in a limited space to form a network [1]. The sensitive data is conveyed to the base station by these nodes, which detect the locations accessible data. The data is verified by the Base Station (BS) and deposited for further use. A WSN offers the capability of sensing numerous environmental and physical phenomena. In both militaryand civil applications, including such healthcare monitoring, smart home, and intelligent transportation, the WSN incorporates the excessive capability [2,3].Each node in the systemhas its individualmemory,power sources,processing capability, etc.

The enormous scalability of WSNs and the accessibility of resource-constrained sensor devices deployed in hostile environments call for novel routing strategies [4]. Connecting a huge number of sensors in a practical and secure network is major the issues. This necessitates creating a routing protocol that increases network longevity [5]. In a Wireless Sensor Network, there are various ways to route sensed data from sensor nodes to base stations. The traditional methods, such as multihop routing, Direct Transmission (DT) are prone to severe attacks and do not provide an even allocation of energy across the sensor nodes.Each sensor independently transmits the data it has collected using DT to a distant receiver. This method is prone to channel fading and has an inherent scalability issue.

To expand energy efficacy, WSN operates data transmission among nodes. Homogeneous and heterogeneous sensor networks are the two main categories into which clustered sensor networks may be divided [6]. In a homogeneous sensor network, the hardware complexity and energy requirements of every sensor node are the same. This kind of network only uses static clustering, which makes the head node vulnerable [7]. The cluster head requires the additional processing for data aggregation and protocol coordination. It is preferable to make sure that all the nodes batteries run out simultaneously.When aggregated data is transmitted to the sink node for cluster-based repetition attack detection, amatching copy of the data is also sent [8]. The replication attack approach helps the mobile agents in the WSN locate the simulated nodes. An aggregator sensor node aggregates the data packets gatheredfrom various sensor nodes.

Furthermore, when the nodes are dispersed in an unverified environment, the networks lifetime can be prolonged by offering privacyand security opposed tonetwork layer attacks. A few routing protocols, such as Path Redundancy Based Security Algorithm (PRSA) for homogenous based Wireless Sensor Networks and Sensor Protocols for Information through Negotiation (SPINS) [9], handle the security device and authentication against numerous threats. Some protected routing techniques for heterogeneous sensor networks can identify rogue nodes and effectively delivering packs to the sink [10]. In the presence of compromised nodes, the secured routing mechanism's network performance is evaluated and contrasted with the heterogeneous network model in regards to latency, delivery, and ratioenergy use.Nevertheless, these routing methods increase the amount of overhead, delay, and buffering needed. In order to improve the CH selection technique, this research effort established a load balancing protocol called Energy Efficient Sleep Awake Aware (EESAA). The overall distance among nodes and the base station and the amount of data that is sent serve as indicators of WSN efficiency. The residue of the research is organised as follows: Section 2 discusses secure routing protocols and energy-efficient for clone node identification. The steps of the suggested methodology are presented in Section 3. The performance evaluation of the suggested strategy is shown in Section 4. Conclusion and upcoming work are discussed in Section 5.

2. LITERATURE REVIEW

PHISHING ATTACKS USING MACHINE LEARNING TECHNIQUES - A SURVEY

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ABSTRACT

In the current era, Technology has become an integral part of our lives, as it provides us with many services and its advancement become faster and has made our work easier than before. We are now able to complete multiple tasks simultaneously and in a faster manner. However, this advancement in technology has also led to many threats to humans. One such threat which has caused severe stealing of data is phishing. Phishing is a type of fraudulent attack where the attacker attempts to obtain sensitive information by impersonating a trustworthy source. This study summarizes the various phishing attacks and the ways by which it could be detected by means of machine learning and deep learning algorithm.

KEYWORDS: Phishing, Machine learning, Deep learning, Algorithm

INTRODUCTION

Phishing is a type of cybersecurity which use to steal user details more than the system. In a typical phishing assault, the victim clicks on a compromised link that appears to be from a reliable source. The victim is then asked for their login information, but because it is a fake website, the sensitive information is sent to the hacker and the victim is compromised. Several meanings of the term "phishing" have been put out and mentioned by professionals, researchers, and cyber security organizations. Due to the term's constant evolution, there's not a single definition for it, but depending on its usage and circumstances, it has been described in a variety of ways. Phishing is currently regarded as one of the most serious cyber security risks for all internet users, regardless of their technical proficiency or level of caution. These attacks are becoming more sophisticated every day and can cause significant damage to the victims. Focuses on phishing, a type of attack in which perpetrators use spoof (phishing) emails to trick victims into visiting fraudulent (phishing).

websites and disclosing personal information there. These websites are intentionally created to seem like and act like legitimate, reputable websites.

The feasibility of heuristic-based techniques (also known as feature-based strategies) depends on the selection of a set of distinctive features that help distinguish between site types. We have released a web search tool-based technique for accurately identifying phishing website pages, paying little attention to the language used on the website pages. The proposed web search tool-based technique uses lightweight, reliable, and language-neutral tracking queries to identify the legitimacy of suspicious URLs. We propose a machine-learning-based strategy for detecting whether a website is capable of responding to phishing activity. In this situation, some web clients communicate with (apparently unknown at the time) phishing websites. The only purpose of this structure is to detect phishing websites and notify the client.

LITERATURE SURVEY

Jain A. K. et al. [1] proposed an effective method to identify phishing cyberattacks which examines a user's exposure to malicious content leading to a breach of security. This approach involves using a web search tool to match the domain name of the website under examination with the results that come up from the search query. The query is comprised of various features such as domain name and keywords including title, body text, and meta description information. They first evaluate how normal TF-IDF "Term Frequency-Inverse Document Frequency" performs in classifying websites as phishing or genuine. Then, they implement a weighted heuristic proposed in their paper by assigning different weights to different label data and further fine-tuning the TF-IDF result to improve the performance of their phishing indicator.

Rao R. S. et al. [2] the world of online security and safety had changed significantly over the years, as more and more malicious websites emerged. To combat this new threat, Rao R. S. et al. proposed a heuristic strategy utilizing TWSVM (Twin Support Vector Machine) classifier to identify malignant enrolled phishing websites and furthermore websites that are facilitated on arrangement servers. The TWSVM classifier works by looking at the sign-in page and the main page of the visited website. It then looks for hyperlinks and URL-based features that can be used to identify potential phishing websites. For the arrangement of phishing websites, the classifier utilizes various support vector machines (SVMs). After extensive testing, the researchers found that the TWSVM classifier outperformed all other versions and was able to identify and block malicious websites more effectively. The team was proud of their success and their strategy was quickly adopted by many companies looking to protect their users from malicious websites. However, the fight against malicious websites was far from over and the team was determined to develop new methods to further improve the effectiveness of their strategy. In this section, we conducted experiments to show the efficiency of the LightTwinSVM program and compared it with the implementation of SVM in sci-kit-learn on the UCI benchmark datasets.

'மனோகரா' கலைஞரின் மகத்தான திரைக்காவியம்

முனைவர் மு.தேவேந்திரன்,
உதவிப்பேராசிரியர், காட்சி வழித் தகவல் தொடர்பியல் துறை
டாக்டர் அம்பேத்கர் அரசுக் கலைக்கல்லூரி,
சென்னை - 600 039.

மனோகரா திரைப்படத்தின் தொடக்கப் பின்புல வரலாற்றையும் வெற்றிக்கு காரணமான காரணிகளையும் பட்டியலிட்டு எடுத்துரைக்கும் கட்டுரை.

முன்னுரை

தனது திரை மொழியால் தமிழ்த் திரைப்பட உலகின் போக்கையே மாற்றிக் காட்டியவர் கலைஞர் கருணாநிதி. ராஜகுமாரியில் தொடங்கிய அவரது திரைப் பயணம் மந்திரிகுமாரி, தேவகி, மனமகள் எனப் பயணித்து 1952 இல் வெளிவந்த பராசக்தி மூலம் வெற்றிச் சாதனை படைத்தது. கலைஞர், சிவாஜியை மனத்தில் கொண்டு மனோகராவில் நீண்டநெடிய அனல் பறக்கும் வசனங்களை எழுதினார். 'பராசக்தி' வெற்றிக்குப் பிறகு கலைஞரையும் சிவாஜியையும் ஒன்று சேர்த்த படம் 'மனோகரா' என்பது காலப்பதிவு.

நாடக வடிவமாக இருந்த மனோகராவைத் திரை வடிவமாக மாற்றிய பொழுது கலைஞர் செய்த மாற்றங்கள், வெற்றிக்கு வழிவகுத்த கலைஞரின் வசனங்களில் மிளிரும் இலக்கியச் சுவை, சமூக, அரசியல் பார்வை, படத் தயாரிப்பு, இயக்கம் ஆகியவற்றை வரலாற்றுப் பார்வை கொண்டு உள்ளடக்க ஆய்வின் மூலம் விளக்குவதே ஆய்வின் நோக்கமாகும்.

மனோகரா நாடகம்

தமிழ் நாடகத் தந்தை பம்மல் சம்பந்த முதலியார் எழுதிய மேடை நாடகம் தான் 'மனோகரா'. பம்மல் சம்பந்த முதலியாரே தமது நாடகத்தில் மனோகரனாக நடித்துள்ளார். பின்னாட்களில் நடிப்பிசை புலவர் கே.ஆர்.இராமசாமியைத் தொடர்ந்து நாடக நடிகராக நடித்து வந்த சிவாஜிகணேசனும் மனோகரனாக நடித்துள்ளார். மட்டுமன்றி மனோகரனின் தாய் பத்மாவதியாகவும், மனோகரனின் நண்பன் ராஜ பிரியனாகவும் நடித்துள்ளார்.

மனோகரா திரைப்படம் (1936)

'மனோகரா' 1936 ஆம் ஆண்டு திரை வடிவம் பெற்றது. படத்திற்கான

வசனத்தைச் சம்பந்த முதலியாரே எழுதியதோடு மட்டுமல்லாமல் மன்னர் புருசோத்தமன் வேடத்திலும் நடித்திருக்கிறார். படத்தில் யு.டி.ஏ.செல்லம், பி.ஜி.வெங்கடேசன், கே.ஆர்.சாரதாம்பாள், கே.டி.ருக்குமணி ஆகியோர் நடித்துள்ளனர். இயக்கம் காபூலி சாகிப். படம் எதிர்பார்த்த வெற்றி பெறவில்லை.

மனோகரா (1954)

'மனோகர் பிக்சர்ஸ்' என்ற நிறுவனத்தைத் தொடங்கிய ஜுபிடர் சோமசுந்தரம் படத்திற்குத் திரைக்கதை வசனம் எழுதும் வாய்ப்பைக் கலைஞருக்கு வழங்கினார். 'மனோகராவுக்குத் திரைக்கதை வசனம் எழுத ஒப்பந்தமான நேரத்தில், அன்றைய அரசியல் சூழ்நிலை காரணமாகக் கைது செய்யப்பட்டுச் சிறையில் அடைக்கப்பட்டிருந்தார் கலைஞர். சிறையில் இருந்தவாறே 'மனோகரா' படத்திற்குத் திரைக்கதை வசனம் எழுதிக் கொடுத்திருக்கிறார்' என்று பாலபாரதி தாம் எழுதிய கலைஞரின் திரைப்பயணம் என்ற நூலில் குறிப்பிட்டுள்ளார். மனோகரன் வேடத்தில் சிவாஜிகணேசனும், மனோகரனின் தாய் பத்மாவதியாகக் கண்ணாம்பாவும் நடிக்க ஒப்பந்தம் செய்யப்பட்டனர். 'படம் தொடக்க நிலையில் நடிப்பிசைப் புலவர் கே.ஆர்.இராமசாமியை தான் மனோகரன் வேடத்தில் நடிக்க முடிவு செய்திருந்தது ஜுபிடர்நிறுவனம்' என்று பதிவிடும் கலைஞர், பின்னர் பராசக்தியில் சிவாஜியின் நடிப்பைப் பார்த்து ஜுபிடர் சோமசுந்தரமே, சிவாஜியையே மனோகரனாக நடிக்க ஒப்பந்தம் செய்தார்' என வண்ணத்திரைக்கு அளித்த பேட்டியில் தெரிவிக்கிறார். வசந்த சேனையாக அன்றைய திரை ரசிகர்களின் கனவுக் கன்னியாகத் திகழ்ந்த டி.ஆர். இராஜகுமாரியும், மன்னர் புருசோத்தமனாகத் தெலுங்கு நடிகர் சதாசிவராவும், மனோகரன் நண்பன் இராஜ பிரியனாக எஸ்.எஸ்.ராஜேந்திரனும் நடித்தனர். மனோகரனின் மனைவி விஜயாவாகத் தெலுங்கு நடிகை கிரிஜாவும், வசந்த சேனையின் முதல் கணவன் கேசரிவர்மனாக முஸ்தாபாவும், மகனாகக் காக்கா ராதாகிருஷ்ணனும், மந்திரி சத்திய சிலராக ஜாவர் சீத்தாராமனும், வில்லனாக எஸ்.ஏ.நடராசனும் நடித்தனர். இயக்கம் எல்.வி.பிரசாத். படத்திற்கு இசை அமைத்தவர் எஸ்.வி.வெங்கட்ராமன். 1954 ஆம் ஆண்டு மார்ச் மூன்றாம் தேதி 'மனோகரா' திரைக்கு வந்தது. தமிழ் தெலுங்கு என்று ஒரே நேரத்தில் எடுக்கப்பட்ட இப்படம், தெலுங்கில் 'மனோகர்' என்ற பெயரில் வெளியிடப்பட்டது. அரங்கு நிறைந்த காட்சிகளாகப் பல ஊர்களில் நூறு நாட்களைக் கடந்து ஓடிய படம் 'மனோகரா' என்பது காலப்பதிவு.

கதை

சோழ மன்னன் புருசோத்தமன் மகாராணி பத்மாவதியின் மகன்

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- பாபா மற்றும் அவரது அற்புதமான ஆவேசங்கள்
- சாஹா மற்றும் அவரது சூத்திரம்

மும்பை பாபா அணு ஆராய்ச்சி மையத்தில் ஐம்பதுகளில் தனது வாழ்க்கையைத் தொடங்கிய ஆசிரியர் டாக்டர் ஜி.வெங்கட்ராமன், கல்பாக்கத்தில் உள்ள இந்திரா காந்தி அணு ஆராய்ச்சி மையத்தில் ஒரு தசாப்தத்திற்கும் மேலாக கழித்துள்ளார். அவர், சமீப காலம் வரை, ஹைதராபாத்தில் உள்ள பாதுகாப்பு ஆராய்ச்சி மற்றும் மேம்பாட்டு அமைப்பில் இருந்தார். இவர் ஒரு ஒருங்குநிலைப்பட்ட பொருள் இயற்பியலாளர், முன்பு சர் சி.வி. ராமன் பின்பற்றிய சில பகுதிகளில் பணிபுரிந்தார். அவர் இந்திய அறிவியல் அகாடமியின் சக உறுப்பினர், மற்றும் இந்திய இயற்பியல் சங்கத்தின் தலைவராக இருந்தார். 1979 இல் பல்கலைக்கழக மானியக் குழுவால் அவருக்கு சர் சி.வி. ராமன் விருது வழங்கப்பட்டது. மேலும் 1984 முதல் 1986 வரை ஜவஹர்லால் நேரு சக உறுப்பினராக இருந்தார். 1991 இல் அவருக்கு பத்மஸ்ரீ விருது வழங்கப்பட்டது. அறிவியலை பிரபலப்படுத்துவதில் அவர் ஆற்றிய பங்களிப்புகளுக்காக, இந்திய தேசிய அறிவியல் அகாடமி அவருக்கு 1994 இல் இந்திரா காந்தி விருதை வழங்கியது. (மோனோகிராஃப்கள் டைனமிக்ஸ் ஆஃப் பெர்ஃபெக்ட் கிரிஸ்டல்ஸ்) சரியான படிகங்கள் இயக்கவியலின் தனிவுரைவு நூல் மற்றும் (பியோண்ட் தி கிரிஸ்டலின் ஸ்டேட்) படிக நிலைக்கு அப்பால் ஆகியவற்றுடன், பரவலாகப் பாராட்டப்பட்ட வெளிச்சத்துக்கான பயணம்: சி.வி. ராமனின் வாழ்க்கை மற்றும் அறிவியல் புத்தகங்களின் ஆசிரியரும் டாக்டர் வெங்கட்ராமன் ஆவார். டாக்டர். வெங்கட்ராமன் தற்போது ஸ்ரீ சத்ய சாய் உயர்கல்வி நிறுவனமான பிரசாந்தி நிலையத்தின் துணைவேந்தராக உள்ளார்.

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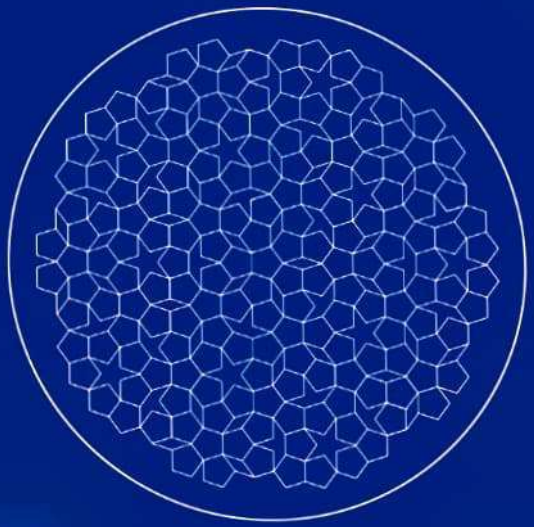

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Course Code: BMSS-31
Course Title: Integral Calculus

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INTEGRAL CALCULUS

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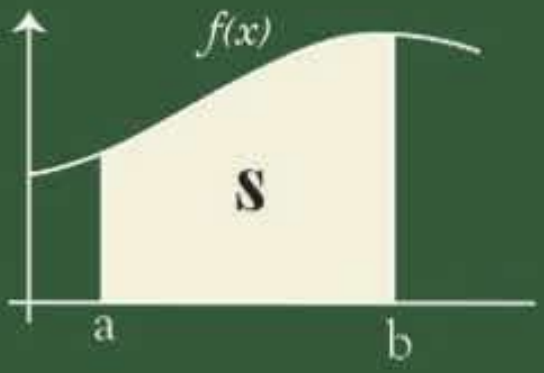

$$S = \int_a^b f(x)\,dx$$

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