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## Modeling and Forecasting of Producer Price Index (PPI) of Cheese Manufacturing Industries

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**Abstract:** Modeling and forecasting of complex time series data has grown as an attractive field thanks to machine learning. The PPI (Producer Price Index) of cheese manufacturing businesses was examined in this study utilizing a machine learning technique. Training and testing data sets were created for the goal of creating and validating a model. After that, we built deep learning models such as LSTM, BILSTM, and GRU and tested them on a training data set using metrics such as ME, RMSE, MAE, MPE, MAPE, and ACF1. These deep learning models were compared on the basis of RMSE for the testing data set. On this set of data, the LSTM model outperforms the BILSTM and GRU models in terms of machine learning performance. These three models' forecasting abilities are nearly identical. Policymakers and academics may find this study useful in building a body of knowledge about PPI in the cheese manufacturing industry. As a result, we feel that this work can be used as a textbook on how to apply machine learning techniques to complex time series.

**Keywords:** Producer Price Index (PPI); LSTM ;BILSTM; Forecasting.

### 1. Introduction

Cheese is a dairy product derived from the coagulation of casein, a milk protein derived mostly from cow, buffalo, goat, or sheep milk. It is available in a wide range of flavors, textures, and shapes. For millennia, cheese has been prized for its mobility and extended

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## Extraction, Screening and Identification of the Medicinally Active Substances Found In Plants

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### Abstract: -

This research paper describes how to extract galactomannan from *Leucaena leucocephala* plant seeds. A process for extracting the seed extract from the *Leucaena leucocephala* plant involves crushing five seeds, followed by solvent extraction.

*Leucaena leucocephala* was used to isolate a water-soluble galactomannan that contains D-galactose (1 part) and D-mannose (3 parts). Three methylated sugars, in the molar ratios of 1.00:1.07:2.19, were produced by hydrolysis of methylated seed gum: 2, 3, 4, 6, tetra-o-methyl-D-galactose, 2, 3, 6, tri-o-methyl-D-mannose, and 2, 3 di-o-methyl-D-mannose. The seed gum was partially hydrolyzed by acid, releasing four oligosaccharides: mannotriose, galactosyl manno-epimelebiose, and manno-epimelebiose. Studies on periodate methylation and oxidation both revealed 25% of end groups. Recent investigations have shown that galactose units exclusively occur in terminal positions in galactomannans.

**Key words:** Acidic hydrolysis, Methylation, periodate oxidation enzymatic hydrolysis, mucilage, end group analysis.

### 1. Introduction:-

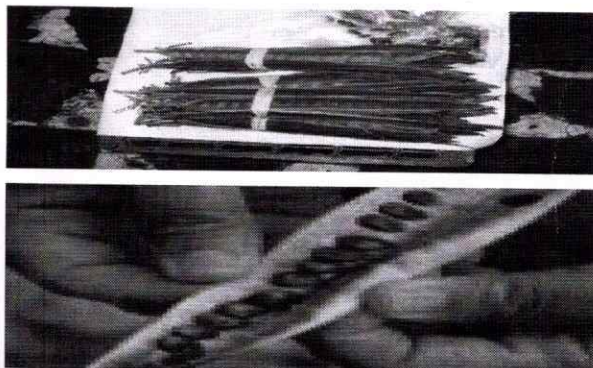
Phytochemical refers to the extraction, screening and identification of the medicinally active substances found in plants. Some of the bioactive substances that can be derived from plants are flavonoids, alkaloids, carotenoids, tannin, antioxidants and phenolic compounds. Self-fertile – Yes

In single word **“Biologically active compound found in plants.**

The plants of *Leucaena leucocephala* (Family Leguminasae) have an evergreen shrub or tree with a fairly open, rounded crown; it can grow from 5 - 20

meters tall. The bole(trunk of tree) is generally short and can be 10 - 50cm in diameter.

### Image and seeds of Plant *Leucaena leucocephala*



Known Hazards:- The plant is classified as 'Least Concern' in the IUCN Red List of Threatened Species. The leaves of most forms of this plant contain the unusual amino acid mimosene. In large quantities this can be harmful. There are low-mimosene cultivars.

Its range from Central America - northern Panama, north to central Mexico and found in Dry coastal regions, waste ground.

There are some more properties, due to these reasons; it is very much using i.e.

Weed Potential – Yes

Conservation Status- Least Concern

Edibility Rating \*\*\*\*

Medicinal Rating - \*\*

Other Uses Rating - \*\*\*\*

Habit-

Evergreen Tree Height-10.00m

Growth Rate – Fast

Pollinators-Insects, Self

Cultivation Status - Cultivated, Ornamental, Wild

That's why it is very much uses in different areas i.e.

**Medicinal used-** The roasted seeds are emollient. A decoction of the root and bark is abortifacient. Different parts of *Leucaena leucocephala* plants have been found

Article

# Nowcasting India Economic Growth Using a Mixed-Data Sampling (MIDAS) Model (Empirical Study with Economic Policy Uncertainty–Consumer Prices Index)

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**Abstract:** Economics suffers from a blurred view of the economy due to the delay in the official publication of macroeconomic variables and, essentially, of the most important variable of real GDP. Therefore, this paper aimed at nowcasting GDP in India based on high-frequency data released early. Instead of using a large set of data thus increasing statistical complexity, two main indicators of the Indian economy (economic policy uncertainty and consumer price index) were relied on. The paper followed the MIDAS–Almon (PDL) weighting approach, which allowed us to successfully capture structural breaks and predict Indian GDP for the second quarter of 2021, after evaluating the accuracy of the nowcasting and out-of-sample prediction. Our results indicated low values of the RMSE in the sample and when predicting the out-of-sample 1- and 4-quarter horizon, but RMSE increased when predicting the 10-quarter horizon. Due to the effect of the short-term structural break, we found that RMSE values decreased for the last prediction point.

**Keywords:** nowcasting real GDP; economic policy uncertainty; consumer prices index; mixed-data sampling; almon weighting; structural break

## 1. Introduction

The official publication of many macroeconomic indicators (such as GDP) has been delayed, especially in developing countries, by Central Statistics Offices. This is a prob-

## Self-Workout Trainer System Using Ai and MI

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### Abstract

Exercises for fitness are quite good for one's health and fitness. If used improperly by the user, they may also be ineffectual and even harmful. When the user does not adopt the appropriate stance, exercise errors are made. In our work, we provide a software program that recognizes the user's exercise stance and offers customized, in-depth suggestions on how the user can correct their form. People now more often exercise by themselves and without supervision as self-management for the

treatment of musculoskeletal ailments becomes more popular. Without feedback, it might be challenging to identify when an exercise is being done properly, hence it is unsafe to try certain exercises. This might result in further harm. We draw attention to these issues and work to provide the best possible solution using an application that detects the user's stance using the most advanced pose estimation technology, then assesses the vector geometry of the pose using an exercise to deliver helpful feedback.

their work available in the form of Unity, C++, and Python code.

### 1. INTRODUCTION

As we get closer to the future, we are observing numerous firms' strategies in the fields of artificial intelligence, machine learning, the Internet of things, data analytics, etc. The use of artificial intelligence and machine learning algorithms makes it possible to quickly and simply handle numerous problems that arise in daily life. One of these issues is estimating posture during exercise, which was brought to light during the lockdown among those who exercised at home without the guidance of a professional trainer. It became extremely difficult for them, and it can also be challenging to recognize when one is performing an exercise incorrectly.

When compared to people who are not physically active, those who engage in moderate to vigorous levels of exercise have a lower death risk. By lowering the possibility of inflammation, moderate amounts of exercise have been linked to delaying the aging process.

#### Existing Technologies/Tools/Software

**1.2.1 Open pose:** It is the first multi-person real-time system that jointly identifies key places on the human body, hands, facial expressions, and feet on a single image. Researchers from Carnegie Mellon University made the suggestion. They have made

**1.2.2 Open CV:** OpenCV (Open-Source Computer Vision Library) is an open-source computer vision and machine learning software library. A standard infrastructure for computer vision applications was created with OpenCV to speed up the incorporation of artificial intelligence into products. OpenCV makes it simple for businesses to consume and alter the code because it is a BSD-licensed product. More than 2500 optimized algorithms are available in the collection, including a wide range of both traditional and cutting-edge computer vision and machine learning techniques. These algorithms can be applied to a variety of tasks, including the detection and recognition of faces, the identification of objects, the classification of human actions in videos, the tracking of camera movements, the tracking of moving objects, the extraction of 3D models of objects, the production of 3D point clouds from stereo cameras, and the stitching together of images to create high-resolution scenes.

#### Features of OpenCV:

1. Cross-platform: Allows installation for different environments (operating systems)

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## Thermoelectric Cooler-Supported Water Condensation System Development Method

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### Abstract

The scarcity of rainfall in many countries, including India, makes it difficult to get water resources for irrigation or other applications, particularly in arid regions like deserts, etc. The problem of water scarcity is also present throughout the world as a result of insufficient rainfall. However, in really humid places, such those close to the sea, we can condense the water vapor in the air. This paper describes the process of developing a water condensation system supported by a thermoelectric cooler. The heat exchanger, air circulator, and cooling components make up the system. The device that can directly convert atmospheric moisture into usable, even drinkable water is called the air Water Generator. This gadget turns water vapour molecules into water droplets by using the latent heat concept. Although it has been introduced a little before, India and some other nations do not use it very frequently. In our technological age, when we are all relying on renewable resources, it has a lot of applications. This essay also discusses the outcomes of the experiment and the functionality of the system.

**Keywords:** Thermoelectric cooler, Atmospheric moisture

### INTRODUCTION

In numerous countries, including India, getting water assets for agribusiness or different purposes is testing, especially in parched areas. Finding different strategies for the age of unadulterated water turns out to be more helpful to motivate numerous scholastics to concentrate on related subjects in light of the absence of unadulterated water in numerous areas all through the world, especially in the nations of the Arabic Bay. Water is crucial for life in the entirety of its aspects. Water is an essential part of life, yet it is hard to decontaminate, costly to ship, and can't be subbed. Almost 45 crore individuals live in water-deficiency zones across 129 countries.

Almost 70% of new water is used for water system of agrarian fields, causing water clashes among metropolitan and rustic regions. In the event that this pattern proceeds, by 2032, almost 50% of the total populace will encounter a water deficiency. Water wars are likely to break out in the 21st century. It has been noticed that different regions of the planet are encountering water shortage because of an absence of precipitation. Notwithstanding, we can consolidate the airborne water fume in regions that are extremely muggy, like those close to the ocean. The strategy for making a water buildup framework in light of a thermoelectric cooler is introduced in this examination. There are cooling elements, a heat exchanger, and an air circulation unit in the system.

The Air is contains enormous measure of water as dampness, fume and so forth. Inside those sums practically 30% of water is squandered. If we are able to extract the water that is present in the air in the form of moisture, then this quantity of water can be utilized. This Environmental dampness converts directly into usable and, surprisingly, drinkable water this is called Barometrical Water Generator.



## Security Concerns with Upcoming Mobile Payment Systems

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### Abstract

The main part of versatile trade is portable installment. We order the installment choices in light of various models, assess every one, and feature its benefits and impediments. As a type of mobile data service, mobile payment services are now a part of people's lives. It for the most part centers around the telecom specialist organization industry. Radio Recurrence ID (RFID) is an exchange arrangement preceding the portable installment framework. [ 4].

Cash installment is as yet lord in a few business sectors, representing over 90% of the installments in practically all the going through development nations. The utilization of things not fixed phones is gorgeous ordinary in right now. Promptly moved phones have turned into a together the whole time companion for some clients, giving out to considerably more than just news contraption for making or put right things. Each approaching after individual is vigorously being reliant upon them in view of, according to much-sided use and installment power.

We investigate various proposed models of the portable installment framework (MPS), their advances and correlations, installment strategies, different security components associated with MPS, and give examination of the encryption advancements, confirmation techniques, and firewall in MPS. We likewise recognize current difficulties and future headings of cell phone security.

Cell phone rather than cash: Cell phones organizations, network administrators and monetary establishment guarantee themselves to make telephones fit for cash trade. A study indicates that the number of mobile devices will significantly grow in the coming years. Through this paper we will examine how programming framework handles the installment interaction by the utilization of cell phones and the installment servers.

Remote correspondence is having a major effect to day to day existence. The quick development of remote systems administration, correspondence, and versatile innovation is have gigantic effect. The critical increment of cell phone clients in the new years causes areas of strength for an on got remote organization and solid portable business application. Since versatile is basic piece of most remote data administrations and application.

**Keywords:** Cell phone, Security, Systems

### 1. INTRODUCTION

Mobile commerce is defined as any transaction with a monetary value that is conducted via a mobile telecommunication network. Cash payment is still ruler in several markets, accounting for more than 90% of the payments in all almost all the developing countries. In our time, the use of readily moved apparatuses by people has increased greatly[1]. A much number of people use things not fixed telephones to act day-to-day

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## Examined Several Payment Options And Highlighted The Advantages And Disadvantages Of Each Based On A Number Of Criteria

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### Abstract

The game-changing feature in mobile commerce is mobile payment. We categorize the payment options based on a number of criteria, evaluate each one, and highlight its advantages and disadvantages. Mobile payment services have become more prevalent in people's lives as a type of mobile data service. Its primary concentration is on the telecom service provider industry. Radio Frequency Identification (RFID) is a transaction solution used prior to the mobile payment system [4].

In many markets, cash payments remain the norm, making up over 90% of transactions in nearly all developing nations. Using devices other than landline phones is a smart idea and seems normal in this day and age. For many users, easily movable phones have evolved into a constant companion, providing much more than just news.

We explore multiple proposed models of the mobile payment system (MPS), their technologies and comparisons, payment methods, different security mechanisms involved in MPS, and provide analysis of the encryption technologies, authentication methods, and firewall in MPS. We also identify current challenges and future directions of mobile phone security.

Smartphone instead of cash: Mobile phones companies, network operators and financial institution promise themselves to make phones capable for money exchange. As per a study expansion of mobile devices in upcoming years will increase significantly. Through this paper we will discuss how software system handles the payment process by the usage of mobile devices and the payment servers.

Wireless communication is making a big impact to daily life. The swift advance of wireless networking, communication, and mobile technology is make huge impact. The significant increase of mobile device users in the recent years causes a strong demand on secured wireless network and reliable mobile commerce application. Since mobile is critical part of most wireless information services and application.

**Keywords:** Criteria, Several, Disadvantage

### 1. INTRODUCTION

Mobile commerce is defined as any transaction with a monetary value that is conducted via a mobile telecommunication network. Cash payment is still ruler in several markets, accounting for more than 90% of the payments in all almost all the developing countries. In our time, the use of readily moved apparatuses by people has increased greatly[1]. A much number of people use things not fixed telephones to act day-to-day task. These apparatuses can be used for many works, such as making telephones cries, web surfing, emailing, playing activity, and many other works.

Simplified the current operation of making observations in this area is gave all attention on the use of things not fixed telephones to act payment safely. However,

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## **Examination of Physical and Chemical Properties of Subterranean Drinking Water**

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**Abstract-**Water is one of the precious natural resources that exist on our planet Earth. Without water, survival is not possible. In rural areas, water is an integral part of human life specially in agricultural field. Potable safe water is totally essential for healthy living. Adequate supply of fresh and clean water may be a basic requirement for all person on the planet. Due to over exploitation and poor management, the matter of beverage pollution and water quality management has assumed an awfully advanced form. Attention on pollution and its management has become a requirement of hour due to way reaching impact of it on human health. Moradabad is an industrial town, globally identified for its brass business. due to completely different varieties of human activities and speedy industry, the underground water quality is additionally badly affected. Underground beverage samples at IM2 hand pumps at fourteen completely different sites at Moradabad were collected and analyzed quantitatively following commonplace strategies and procedure to estimate the extent of contamination. Water quality physico-chemical parameters were elite as per the rules of W.H.O. Underground beverage was found to be contaminated with references to most of the parameters studied, whereas it absolutely was moderately contaminated for alternative water quality parameters studied. The studies recommend that individuals hooked in to this water are liable to health hazards of contaminated

beverage and a few effective measures are desperately required for water quality management.

**Kew words:** Water pollution, physico-chemical parameter, chemical contamination

### **Introduction**

Water is completely essential for healthy living. It plays an essential role within the lifetime of each species that survive during this world and is needed by all living organisms for his or her existence. Improper management and reckless use of water system area unit inflicting serious threats to the supply and quality of water 1-3. This study is aimed to assess the groundwater quality of IM2 hand pumps of district Moradabad.

### **Experimental**

Underground water samples of fourteen India Mark-II(IM2) hand pump were collected and analysed quantitatively following standard methodology of sampling and estimation<sup>4-6</sup>. Three samples of each site were collected, estimated and the arithmetic mean of three values is reported. A blank was also run for all volumetric titration. All the chemicals of anal R grade were used. The specification of used instruments are- Century CP 901 pH meter, RI Conductivity meter and Hach 2010 (version 6.4) spectrophotometer. The estimated water quality physico-chemical parameters are- pH, conductivity, turbidity, total solids, total dissolved solids alkalinity, dissolved oxygen, biological oxygen demand, chemical oxygen demand, hardness,

  
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## Extract Galactomannan from *Leucaena Leucocephala* Plant Seeds

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### Abstract

This research paper describes how to extract galactomannan from *Leucaena leucocephala* plant seeds. A process for extracting the seed extract from the *Leucaena leucocephala* plant involves crushing five seeds, followed by solvent extraction. *Leucaena leucocephala* was used to isolate a water-soluble galactomannan that contains D-galactose (1 part) and D-mannose (3 parts). Three methylated sugars, in the molar ratios of 1.00:1.07:2.19, were produced by hydrolysis of methylated seed gum: 2, 3, 4, 6, tetra-o-methyl-D-galactose, 2, 3, 6, tri-o-methyl-D-mannose, and 2, 3 di-o-methyl-D-mannose. The seed gum was partially hydrolyzed by acid, releasing four oligosaccharides: mannotriose, galactosyl mannobiose, epimelebiose, and mannobiose. Studies on periodate methylation and oxidation both revealed 25% of end groups. Recent investigations have shown that galactose units exclusively occur in terminal positions in galactomannans.

**Key words:** Acidic hydrolysis, Methylation, periodate oxidation enzymatic hydrolysis, mucilage, end group analysis.

### INTRODUCTION

Phytochemical refers to the extraction, screening and identification of the medicinally active substances found in plants. Some of the bioactive substances that can be derived from plants are flavonoids, alkaloids, carotenoids, tannin, antioxidants and phenolic compounds.

In single word "Biologically active compound found in plants.

The plants of *Leucaena leucocephala* (Family Leguminosae) have an evergreen shrub or tree with a fairly open, rounded crown; it can grow from 5 - 20 meters tall. The bole(trunk of tree) is generally short and can be 10 - 50cm in diameter.

Image and seeds of Plant *Leucaena leucocephala*





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## Effects of Salinity on Concrete Characteristics

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### Abstract

The worldwide population is growing at an exponential rate, and with it, the need for concrete to build and maintain infrastructure. This has led to a variety of environmental problems. The demand for drinkable water has skyrocketed as a result of this. In order to make dry-area concrete production less harmful to the environment, this study investigates the potential of substituting highly mineralized treated effluent for potable water. We contrasted concrete specimens mixed with distilled water (DW) and those mixed with saline treated wastewater (saline-TWW) to ensure they performed according to the guidelines for water mixing. The results demonstrated that the saline-TWW concrete mixes had higher early strength and equivalent long-term strength to the control mix prepared with DW. Also, the new concrete mixture's workability was unaffected by the addition of saline-TWW, while the curing time of the cement paste was prolonged. To further assess the microstructural characteristics of the hardened concrete, testing for water permeability, scanning electron microscopy (SEM), and X-ray diffraction were used. The results demonstrated that saline-TWW concrete outlasted DW concrete in terms of durability due to its more compacted microstructure and smaller pore sizes. Also, to find out how much corrosion there was, samples of reinforced mortar constructed with saline-TWW and DW were electrochemically tested. Electrochemical testing revealed that concrete mixed with completely saline-TWW significantly increased the rate of corrosion of the embedded steel.

**Keywords:** Concrete, Saline-TWW Mixing Water, Strength, Chloride, Corrosion

### INTRODUCTION

Concrete is a great material to use for building projects because of its fresh and hardened qualities [1]. Concrete output therefore surpasses that of all other engineering materials put together, reaching almost 16 billion metric tonnes annually [2]. Many environmental issues on a local, national, and international scale have arisen as a consequence of the massive amounts of water, energy, and materials used in the production of concrete. Consequently, there have been a lot of studies done lately to find ways to make concrete that is more sustainable and long-lasting by using various industrial waste and by-products instead of or in addition to the traditional Portland cement and natural aggregates. Some examples of these materials include fly ash [4], metakaolin [5], recycled aggregates [6], silica fume [3], and so on. However, reducing water use in concrete manufacturing is not given the same level of emphasis. To mix and cure concrete, as well as to wash aggregate and concrete equipment and machinery after usage, water is an essential component [7]. An estimated 16.6 billion cubic metres of water is used every year by the concrete industry, which accounts for almost 18% of the total industrial water consumption worldwide [8]. Regions presently experiencing or projected to experience water shortages may find this demand for water to exacerbate existing management challenges. Consequently, in order to make concrete manufacturing more environmentally friendly, it should be prioritised to develop

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## A Composition of Castable and Curable Magnetic Cement and a Process for Making It in Indian Road

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### ABSTRACT

A castable and curable magnetic cement composition with strong magnetic characteristics is the subject of the current research invention. The mechanical and magnetic properties of cement were improved by the addition of magnetic particles. An aluminosilicate particle in the range of 32-46%, a cement particle in the range of 0.00272  $\mu\text{m}$ , a magnetic or magnetizable particle in the range of 32-96%, a binding modifier in the range of  $\mu$ ; and  $\nu$ ) a surface-active dispersing agent in the range of 0.1-4% by weight are all components of the castable and curable magnetic cement composition. The stages involved in creating the cement composition are as follows: i) homogenising the mixture by combining the particles with a dispersion agent; and ii) adding a silica-bearing additive.

**Key word:** - Concrete, Magnet, Cement, Magnet, mechanical and magnetic properties.

### BACKGROUND

Research involves slabs made with magnetizable concrete instead of just the plain concrete that we all know. There's an embedded coil, and we circulate a high-frequency current, and we generate a magnetic field. That field is then picked up by a compatible coil on an electric vehicle—so that vehicle's retrofitted with a coil and converts it back to electricity and that can power the motor directly or charge the battery ... The goal is to bring the charge to the vehicles, rather than the vehicle stopping at charging stations.

In this research we can reduce the size of the battery, and that will immediately reduce the cost, which is very important—both for private and also commercial vehicles. But specifically for commercial vehicles, smaller batteries will help them carry more cargo—so, that means more revenue. And if we end up building this electrified roadway infrastructure that is shared among all vehicle classes, that would really benefit electrified long-haul trucking and will bring additional benefits in terms of economic development, quality reductions, and so forth.”

We already have initial results on the financial feasibility of this technology that I know a lot of people have been asking about. Our results indicate that, long term, the investment is feasible both for public and private owners and operators—direct benefits to both. But also, indirect benefits to the broader economy and society; communities benefiting by reduced pollution; improved quality of life; and economic development, especially for rural and underserved areas.

Cement is one of the most frequently utilized building materials. Because of the growing need for functional structures, the functional qualities of certain building materials have gained more attention. Cement's useful characteristics can be achieved by including appropriate fillers into cement-matrix composites. Sensing (strain, damage, temperature), thermal control, vibration reduction, electromagnetic shielding, and 10 energy harvesting are some of the applications of functionalized cement composites. Water plays an important role in achieving the desired cement characteristics. Water regulates the cement hydration process. The use of magnetic fluids allows the fluid ions to swiftly reach the cement pieces, allowing for a more complete hydration cycle and boosting the hydraulic strength of the concrete. Such outcomes can be substantially influenced by the strength of the magnetic field. The induced hydration processes driven by the mixing water are crucial to achieving design strength. The reaction of cement compounds with water produces heat. Concrete is typically made with drinkable water. The annual usage of concrete reaches one billion tones. Furthermore, concrete mixes including magnetized water lower cement content by about 5%. They have 45% greater slump values and 18 % higher compression strengths than control concrete. A recent study considers substituting cement, M-sand, and aggregates with industrial byproducts. Few researchers attempted to substitute potable water in concrete with magnetic water. Water can be magnetized under the correct conditions by passing it through a magnetic field formed by an everlasting magnet of a certain size. The features of the

## **How Online Exam Portals Provide a Convenient and Efficient Way for Organizations**

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### **ABSTRACT:**

In the modern digital era, online tests are becoming more and more popular, especially with students and job seekers. It emphasizes how firms may easily and effectively hire employees and evaluate candidates' skills by using online exam sites.

The purpose of the research paper is to examine the efficacy and usefulness of an online exam hiring portal created to help businesses locate qualified applicants for open positions. The standard hiring procedure, which entails skill evaluations, interviews, and resume screening, is frequently time-consuming. Online exam portals, however, have become a practical way to speed up the hiring process.

### **INTRODUCTION:**

This study paper's opening examines the typical hiring process, which is frequently drawn-out and time-consuming. It entails a number of procedures, including screening resumes, organizing interviews, and carrying out talent tests. Online exam portals have, nevertheless, become a viable option due to technological advancements for streamlining the hiring process.

The introduction emphasizes how firms can easily and effectively find people and evaluate candidates' skills by using online exam sites. Employers can perform exams, analyze individuals' talents, and shortlist people for additional rounds of interviews using these websites. Additionally, they provide a stage for applicants to exhibit their abilities and credentials to potential employer.

### **TYPES OF PORTAL:**

Online exam portals come in various types, each catering to different needs and purposes. Here are some common types of online exam portals:

#### **1. Educational Institution Exam Portals:**

These portals are designed specifically for educational institutions such as schools, colleges, and universities. They provide a platform for educators to create and administer exams for their students. These portals often include features such as question banks, exam scheduling, grading systems, and result management.

#### **2. Certification and Licensing Exam Portals:**

Certification and licensing bodies use these portals to conduct exams for individuals seeking professional certifications or licenses. These portals typically offer a secure environment for exam delivery, identity verification, and result reporting. They may also include features like exam preparation materials and practice tests.

#### **3. Job Recruitment Exam Portals:**

These portals are used by companies and organizations to assess job candidates' skills and knowledge during the recruitment process. They offer a platform for employers to create and administer pre-employment tests, screen candidates, and evaluate their performance. These portals may include features like customizable assessments, remote proctoring, and candidate ranking.

#### **4. Online Learning and MOOC Platforms:**

Some online learning platforms and Massive Open Online Course (MOOC) platforms incorporate exam portals as part of their offerings. These portals allow

## Recent On Diabetes and Related Complications In Relation To Mirnas

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### Abstract

Multiple consequences are linked to diabetes, a multifactorial polygenic disease. Growing data suggests that numerous miRNAs play a role in the issues linked to diabetes. Additionally, some ncRNA have been linked to the regulation of both learned and innate immunity. MiRNAs and their involvement in diabetic complications are still up for debate, though. We will talk about new developments in miRNA, potential processes, and their biological function in complications related to diabetes in this review.

**Keywords: - miRNA, Insulin, DNA.**

### 1. Introduction

A complex metabolic illness known as diabetes mellitus (DM) affects people all over the world [1, 2]. In Type 1 diabetes mellitus (T1DM), autoimmune -cell destruction causes an insulin shortage. Insulin resistance, hyperglycemia, and decreased insulin production are the hallmarks of type 2 diabetes mellitus (T2DM). Both kinds of diabetes can lead to coronary heart disease (CHD), peripheral artery disease, stroke, nephropathy, retinopathy, neuropathy, and cardiomyopathy, albeit T2DM is much more common [3]. In fact, whether they are macrovascular or microvascular, many diabetes problems have vascular origins. The risk of ischemic heart disease, renal failure, stroke, lower limb amputations, and blindness is often higher among diabetics.

Therefore, diabetes is acknowledged as a significant risk factor for cardiovascular disorders [4]. Diabetes is characterized by hyperglycemia, hyperinsulinemia, obesity, and dyslipidemia [5, 6]. Growing evidence from epidemiological and experimental studies have also suggested that T2DM associated with an increased risk of several types of cancer, including prostate, liver, kidney and breast cancers [7-10]. Further, *In vivo* and *in vitro* models demonstrated that insulin, IGFI, and IGFII signaling is positively correlated to tumorigenesis [11-13]. Insulin, IGFI, and IGFII signaling through cognate or hybrid receptors can induce tumorigenesis, which may partly explain the link between diabetes and cancer [14-16]. As insulin resistance and hyperinsulinemia are hallmarks of diabetes, it is conceivable that the metabolic syndrome is also linked to increased cancer risk [17-19].

The central dogma theory state that DNA transfer their information into RNA by transcription and finally RNA code the information into protein. Growing evidence of RNA regulatory world challenge the central dogma theory, RNA could store the genetic information and catalyzed the reaction [20]. In recent years, non-coding RNAs (ncRNAs) are emerging as therapeutic tool for treatment of numerous diseases including diabetes and its associated complications [21]. Based on function, endogenous ncRNAs classified as structural ncRNAs and regulatory ncRNAs. Structural ncRNAs includes transfer RNAs (tRNAs), ribosomal RNAs (rRNAs), spliceosomal RNAs (snRNAs), and snoRNAs, while regulatory ncRNAs small interfering RNA (siRNA), micro-RNAs (miRNAs), piwi-RNAs (piRNAs), long ncRNAs, and long intergenic ncRNAs [20, 22].

Among non-coding RNAs (ncRNAs), microRNAs (miRNAs; miRs) are emerging therapeutic targets in a broad range of diseases including diabetes. miRNAs are evolutionarily conserved with an approximately length of 22 nucleotide (nt) that play crucial role in posttranscriptional regulation. It is estimated that miRNAs account for 1-5% of all expressed

human genes and that they can regulate the expression of more than 30% of the protein-coding genes [23]. Once miRNAs transcribed from DNA sequences into primary miRNAs, subsequently processed by two RNAs III proteins such as Drosha (nucleus) and Dicer (cytoplasm). Further, miRNA modify by RNA editing, RNA methylation, uridylation and adenylation; Argonaute loading; and RNA decay [24]. To date, 940 distinct miRNAs molecules have been identified within the human genome (<http://microrna.sanger.ac.uk>) [25].



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## Ultra-Wideband, Notch-Tunable, Small Patch Antenna Design And Development

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### Abstract

An ultra-wideband (UWB) antenna is required to handle the band-notched function, since the frequency band (4.5-5.5 GHz) has recently been recommended by ASEAN nations for fifth generation (5G) cellular connectivity. Thus, to characterise the small form factor of a UWB antenna within theThis article presents a changeable notched resonant feature in the 5G lower band, which is useful for 5G applications. The ultra-wideband antenna was built using a tuning fork radiating patch that has a basic defective ground plane construction. The band-notched criterion was created by applying two ring-shaped slits (RSS) to the ground plane. An exceptionally low VSWR of less than 2 and a massive bandwidth of 2.9 GHz to 11 GHz have been accomplished by this antenna. It would seem that the antenna is capable of receiving all frequencies, with the exception of the lower 5G band (4.5-5.5 GHz), which has notched frequency bands. Although the antenna's notched frequency range yields less than -1 dBi, it has a peak gain of 5 dBi for UWB. Adjusting the various RSS points along the vertical axis allows for a progressive shifting of the notched-band, allowing for the potential to design for changeable band-notched features. This document presents the fully realised design after it has been manufactured and tested. The suggested antenna is perfect for lower band 5G applications because to its compact size and tiny surface area of 45×34 mm<sup>2</sup>.

**Keywords:** Microstrip Patch Antenna, UWB, RSS, 5G Lower Band, Variable Band-Notched

### INTRODUCTION

Various academics have been working on UWB wireless communication applications for quite some time. It has reached a number of applications because to its several benefits, including its ability to transfer a bigger amount of data and reduced manufacturing costs. The UWB commercially available application was granted a bandwidth of (3.1-10.6) GHz by the Federal Communication Commission (FCC) in 2002 [1]. The rapid proliferation of the technology has led to an increase in the usage and popularity of UWB since then. Working with ultra-wideband (UWB) technology often necessitates a large operational bandwidth, however building an antenna for UWB may be difficult due to the antenna's small size, large radiation polarisation, low VSWR, and broad operating bandwidth.

For ultra-wideband (UWB) uses, narrowband is a significant boon [2].on pages 26, 27 examples include the following: (3.3-3.7 GHz) for Wi-MAX [7], (3.3-3.8) GHz for C-band satellite communication [8], (4.5-5.5) GHz for 5G lower band [9], (5.15-5.35) GHz and (5.572-5.825) GHz for WLAN [10], (7.25-7.75) GHz for satellite downlink contact according to the International Telecommunication Union (ITU) [11], (7.25-8.275) GHz for X-band frequencies [12], and so on. Utilising a variety of patch shapes, inset-fed, defective ground structure (DGS), coplanar waveguide (CPW), and radiating patch slots may enhance the efficiency of a planar UWB antenna [2, 13-19]. Bandnotched functions



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## A Rectangular Patch Antenna Design For 5g Using A 30 Ghz Slotted Bow-Tie

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### Abstract

In this work, we recommend a new rectangular microstrip fix radio wire (RMPA) with a relative permittivity ( $\epsilon_r$ ) of 4.3 and a thickness ( $h$ ) of 0.254 mm, and we look at its plan and execution at ( $f$ ). The frequency is 28 GHz. Using Computer Simulation Technology (CST) and the High Frequency Structure Simulator (HFSS), three distinct feeding strategies are investigated to improve the performance of the antenna radiation, particularly the gain and bandwidth of the antenna: coaxial probe, proximity linked line, and microstrip inset line. In spite of the fact that it has a greater receiving wire than the other taking care of choices, the vicinity coupled took care of still figures out how to deliver an exceptionally coordinated example and keep radiation execution great, as per the reenacted recurrence reactions. The three taking care of strategies increment the addition from 5.50 dB to 6.83 dB. Moreover, for  $f_r = 28$  GHz, with the reflection coefficient  $S_{11} = -10$  dB, the receiving wire data transmission is upgraded from 0.6 GHz to 3.60 GHz. The proposed design is more fit to different 5G application frameworks than the recently evolved RMPA because of its more prominent data transfer capacity, higher increase, and reliable size.

**Keywords:** Feed techniques, gain, broadband bandwidth, microstrip patch, 5G

### INTRODUCTION

All aspects of our lives have been moved by remote applications over the most recent couple of years. Receiving wires important for 5G and millimeter wave networks should have little, areas of strength for size, and wide data transfer capacity utilizations of waves [1, 2]. In such cases, a RMPA, or rectangular microstrip fix radio wire, could function admirably. However, its limited bandwidth and low gain are considered to be its two primary drawbacks. To get around these issues, a great deal of exploration has been finished in the writing.

In an effort to increase the gain and bandwidth of MPAs, a variety of approaches have been investigated, including feeding strategies, reducing the thickness of the substrate, increasing the permittivity of the substrate, and employing various optimisation techniques [3]. Furthermore, the essential objective of the mode shift hypothesis given in [4] was to build the transmission capacity of the double mode RMPA by the feeling of two resounding modes. By stimulating the higher mode in the RMPA, the antenna's size was decreased while bandwidth and efficiency were increased.

To expand the MPA's transmission capacity, two spaces were cut from the microstrip fix as portrayed in [5] to animate adjoining radiative modes. Nonetheless, as per [6], a regular fix receiving wire could have its benefit expanded by as much as 48% by utilizing a superstrate focal point to normalize the electric field's stage dissemination over the fix.

# **Create and Put Into Use a Fast-Firing Transistor (Fft) Processor That Has a High Throughput, Minimal Complexity, and Maximum Area Utilization**

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## **Abstract**

Modern wireless technologies get even more benefits from using FFT processors to handle data, such as reduced circuit complexity, fast speed, and low power consumption. Building a high-performance FFT architecture is, hence, crucial to satisfy the real-time requirements. This paper aims to synthesise two 8-point fast Fourier transform (FFT) processors into a single 16-point radix-2 based decimation-in-frequency (DIF) processor. We used ModelSim to model the new 16-point DIF-FFT architectural design, and Xilinx ISE Project Navigator for hybrid synthesis. In this comparison, we look at the synthesis reports of both the current and proposed designs. In conclusion, the results of the comparisons reveal that the suggested 16-point DIF-FFT design uses less power, is faster, and makes better use of memory. Therefore, any application requiring low power and high speed operation may make advantage of the suggested design.

**Keywords: Fast Fourier Transforms, Xilinx with ModelSim**

## **Introduction**

One of the most common methods for modifying data sequences in fourier analysis is the fourier transform. It translates functions from the time domain into their frequency domain equivalents. One way to get discrete inputs for the DFT is to sample a continuous time function. Similarly, the duration of the discrete input function is finite. For this reason, the discrete Fourier transform is often cited as an essential tool for studying discrete-time functions with limited durations. DFT is well-suited for processing data stored in computers since it has a limited series of real or complex inputs. Digital Fourier transform (DFT) is extensively used in signal processing for frequency content analysis of sampled signals and convolution operations. Fast Fourier Transform (FFT) technique allows for fast computation of DFT in reality for the aforementioned applications, which is a significant enabling element. The Fast Fourier Transform (FFT) is now standard practice in several technical domains. The implementation of various communication systems is highly dependent on high speed FFT structures. Utilising an FFT processor for wireless communication enhances modern wireless technology with additional benefits such as reduced power consumption, increased speed, and so on. Thus, designing a high-performance FFT architecture is crucial to satisfy the real-time requirements. Building a new architecture for a 16-point Decimation in Frequency (DIF), Fast Fourier Transform (FFT) processor is the driving force behind this study. The most important factor is that we anticipate a more power-efficient FFT method if it meets the time requirements. Therefore, this is an effort to synthesise a DIF-FFT for 16-point inputs in Xilinx using the Verilog HDL design entity. In terms of speed and memory utilisation, the synthesis result demonstrates that the 16-point DIF-FFT processor is superior.

## **II. FAST FOURIER TRANSFORM ALGORITHM**

When it comes to effectively computing the discrete Fourier transform (DFT) and inverse discrete Fourier transform, one of the most helpful algorithms is the fast FFT technique. Since there are  $N$  data points to calculate, each of which requires  $N$  complex arithmetic operations, the number of complex multiplication and addition operations required by the simple forms of both the Discrete Fourier Transform (DFT) and the Inverse Discrete Fourier Transform (IDFT) is of order  $N^2$ . Discrete Fourier transformations of input signals may be computed using rapid Fourier transforms. The overall number of calculations required for DFT calculation is also decreased. In essence, Radix-2 offers two distinct algorithms: "Decimation in Time" (DIT) and "Decimation in Frequency" (DIF). The fundamental building block of these two algorithms is the recursive breakdown of  $N$ -point transformations.





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## Develop and implement a fast-firing transistor (FFT) processor with minimal complexity, maximum area utilisation, and high throughput

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### Abstract

Current remote innovations get considerably additional advantages from utilizing FFT processors to deal with information, like diminished circuit intricacy, quick speed, and low power utilization. Building an elite presentation FFT engineering is, subsequently, critical to fulfill the constant necessities. This paper means to orchestrate two 8-point quick Fourier change (FFT) processors into a solitary 16-point radix-2 based obliteration in-recurrence (DIF) processor. We utilized ModelSim to show the new 16-point DIF-FFT engineering plan, and Xilinx ISE Undertaking Pilot for half breed amalgamation. We examine the synthesis reports for both the proposed and current designs in this comparison. All in all, the consequences of the examinations uncover that the proposed 16-point DIF-FFT configuration utilizes less power, is quicker, and utilizes memory. Thusly, any application requiring low power and rapid activity might make benefit of the proposed plan.

**Keywords:** Fast Fourier Transforms, Xilinx with ModelSim

### INTRODUCTION

One of the most common methods for modifying data sequences in fourier analysis is the fourier transform. It translates functions from the time domain into their frequency domain equivalents. One way to get discrete inputs for the DFT is to sample a continuous time function. Similarly, the duration of the discrete input function is finite. For this reason, the discrete Fourier transform is often cited as an essential tool for studying discrete-time functions with limited durations. DFT is well-suited for processing data stored in computers since it has a limited series of real or complex inputs. Digital Fourier transform (DFT) is extensively used in signal processing for frequency content analysis of sampled signals and convolution operations. Fast Fourier Transform (FFT) technique allows for fast computation of DFT in reality for the aforementioned applications, which is a significant enabling element. The Fast Fourier Transform (FFT) is now standard practice in several technical domains. The implementation of various communication systems is highly dependent on high speed FFT structures. Utilising an FFT processor for wireless communication enhances modern wireless technology with additional benefits such as reduced power consumption, increased speed, and so on. Thus, designing a high-performance FFT architecture is crucial to satisfy the real-time requirements. Building a new architecture for a 16-point Decimation in Frequency (DIF), Fast Fourier Transform (FFT) processor is the driving force behind this study. The most important factor is that we anticipate a more power-efficient FFT method if it meets the time requirements. Therefore, this is an effort to synthesise a DIF-FFT for 16-point inputs in Xilinx using the Verilog HDL design entity. In terms of speed and memory utilisation, the synthesis result demonstrates that the 16-point DIF-FFT processor is superior.

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## Improving the Performance of Ds Cdma System Over Multipath Fading Channels

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**Abstract:** This article gives an extensive outline of the examination on working on the nature of multipath blurring channels and bringing down their powerful Piece Mistake Rate (BER). Since bit mistake rate (BER) is contrarily connected with signal-to-commotion proportion (SNR), a lower SNR demonstrates a lower BER. Upgrading the usefulness of advanced correspondence frameworks is the essential objective of the examination. To guarantee consistent conveying data, the piece mistake rate (BER) should be limited, i.e., further developed BER. To work on the Sign to-Commotion Proportion (SNR) and decrease the Piece Blunder Rate (BER), a rake beneficiary duplicates the got signal by time-moved duplicates of a nearby code grouping. This particular type of beneficiary is made out of various correlators. The Rake receiver and the Gold Code carrier are used to simulate the bit error rate (BER) performance of the AWGN and Rayleigh fading channels for 16-QAM. We likewise assess the BER execution for QPSK, 64-QAM, and 256-QAM with the AWGN and Rayleigh blurring channels. The MATLAB programming is utilized to run the reproduction. Baseband modulations for the AWGN channel are discussed in this paper as a means of increasing the BER of QAM-based DSCDMA systems.

**Keywords:** BER, DS-CDMA, Fading, Multipath Fading Channels, SNR, QAM Rake Receiver

### Introduction

With the proliferation of wireless communication as a de facto standard for data transmission, the key issue is finding ways to make the most efficient and reliable use of the limited bandwidth available for

data transfer [1]. A number of pathways are used by the signal to reach the receiver. The receiver is responsible for picking up sent signals via A received signal is actually the sum of multiple components, independent of the main component, each of which travelled a different path from the transmitter. This can happen either directly, along a Line of Sight (LOS), or indirectly, due to the scattering, reflection, and diffraction of nearby objects like buildings, trees, and other obstacles. This causes a delay in the multipath components proportional to the length of their paths. The comparable data rate that a channel can handle is limited due to Inter-Symbol Interference (ISI), which is caused by delayed multipath components. Fading is another big issue with multipath channels. [6]. When several multipath components approach at different times and cancel each other out at any location in free space, the received signal intensity drops significantly, a phenomenon known as multipath fading. The multipath environment experiences a rise in interference from numerous directions when several concurrent conversations are carried out. The signal at the receiver side becomes severely distorted and fades due to multipath propagation, which lowers the Signal-to-Noise Ratio (SNR) and leads to a higher Bit Error Rate (BER) [5]. BER is a useful tool for evaluating the dependability of wireless communication systems.

Broadband occupancy is much greater than normal according to the spread spectrum communication theory.

The power spectral density drops with increasing bandwidth, and the signal becomes indistinguishable

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## IoT Based Smart ICU Ventilation System and Patient Health Monitoring System

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### Abstract

The advent of the Internet of Things (IoT) has allowed for significant advancements in the healthcare sector, especially in the monitoring of patients with respiratory disorders. This paper represents an IoT-based smart ventilation and patient health monitoring system designed to provide real-time data and improve patient's health care and full time monitoring of patient's in hospitals as well as at home. The system consists of a smart ventilation system contains various sensors to monitor vital signs and environmental factors, and a mobile application to monitor the condition of patient and activity of patient remotely. The data sensed by the sensors and then collected is transmitted to the cloud for analysis, and used to adjust the settings of ventilation system and alert the healthcare providers such as doctors and their loved ones in case of any deviations from the normal conditions in body. This system provides a extensive approach to patient healthcare and has the potential to efficiently improve outcomes for patients with respiratory conditions/disorders.

**Keywords:** IoT, Healthcare, Smart ventilator, Real-time data, Monitoring, sensors, remote.

### Introduction

Respiratory disorders are a major cause of discouragement and mortality worldwide, with millions of people suffering from conditions such as COPD (Chronic Obstructive Pulmonary Disease), asthma, and ARDS (Acute Respiratory Distress Syndrome).

Mechanical ventilation is a life-saving mediation for patients with severe respiratory distress, but traditional ventilators don't have the capability to provide real-time data and adjust settings based on the patient's condition. With the rise of IoT, there is an opportunity to restructure the patient care by integrating smart technology into medical equipments and medical devices.

The WHO (World Health Organization) has proclaimed that healthy aging is critical for countries' economic development. The number of old and chronically ill persons living at home is steadily increasing day by day. In-home Patient health monitoring systems provide a number of advantages, including increased safety measures, enhanced quality of life, and lower hospitalization and cost on comparison. With promising technical, economic, the IoT is transforming the typical healthcare scheme into smart ventilation and monitoring. Current IoT research has opened up new opportunities in the sovereign state of medicine, with the goal of improving healthcare quality at a low cost. Many problems are faced during this process because the adoption of these new technologies by the people is tough .So, there is a lot of interest in finding efficient and reliable ways to keep track of patients and provide them proper ventilation and well-being and care for them at home with proper monitoring setup and ventilation setup and to operate all remotely with electronic devices. Constant patient health monitoring and ventilation leads to reduce hospitalizations, reduce emergency department visits, and reduce hospital expense.

In the age of ultramodern wisdom and technology, the Internet of effects (IoT) has come a popular exploration content. Remote healthcare monitoring and smart ventilation is getting popular day by day. It's marked as the most standard way of healthcare of patient. As the observation of remote cases has come more popular day by day and standard health care is demanded for healthy living, It's a veritably huge and worrying problem that how to give high- quality case care outside the sanitarium. Remote Case health monitoring system arrangement empowers observation of cases outside the conventions, hospitals and setting up a clinical terrain at home with the setup of ventilation and monitoring and with fluently operated. The core ideal of this design is to design and apply smart patient health shadowing/ monitoring and smart

## K-Means and Fuzzy Based Hybrid Clustering Algorithm for Wsn

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**Abstract:** Wireless Sensor Networks (WSNs) play a pivotal role in various applications, ranging from environmental monitoring to industrial automation. Clustering is a fundamental technique employed in WSNs to enhance network efficiency, prolong network lifetime, and reduce communication overhead. In this context, this research proposes a novel hybrid clustering algorithm that integrates the strengths of both K-Means and Fuzzy Logic for improved performance in WSNs. The proposed algorithm aims to address the limitations of traditional clustering algorithms by combining the efficiency of K-Means with the flexibility of Fuzzy Logic. The K-Means component provides a robust and efficient initial clustering of sensor nodes based on distance metrics, while the Fuzzy Logic component introduces a degree of membership for each node to multiple clusters. This fuzzy membership allows a node to belong partially to different clusters, providing a more nuanced representation of its relevance to various groups within the network.

**Keywords:** Fuzzy Logic, Wireless Sensor Networks (WSNs), K-Means, Clustering

### Introduction

Wireless Sensor Networks (WSNs) have emerged as a critical technology in various applications such as environmental monitoring, healthcare, and industrial automation due to their ability to collect data from the physical world. Clustering is a fundamental technique employed in WSNs to enhance scalability, energy efficiency, and data aggregation. Traditional clustering algorithms, such as K-Means, provide efficient and deterministic cluster formation but may struggle with dynamic and uncertain environments. In contrast, Fuzzy

Logic offers a more flexible approach by incorporating uncertainty, but it may lack the precision exhibited by traditional methods.

This research introduces a novel hybrid clustering algorithm that leverages the strengths of both K-Means and Fuzzy Logic to address the challenges posed by the dynamic and uncertain nature of WSNs. The primary goal is to develop a clustering mechanism that is robust, energy-efficient, and capable of adapting to changing network conditions.

### 1. Background

#### 1.1 Wireless Sensor Networks

Wireless Sensor Networks consist of a large number of sensor nodes that collaborate to monitor physical phenomena, collect data, and transmit information to a central base station. The resource constraints, communication challenges, and the dynamic nature of these networks necessitate the development of efficient clustering algorithms.

#### 1.2 Clustering in WSNs

Clustering algorithms organize sensor nodes into groups or clusters, where each cluster is typically represented by a cluster head responsible for aggregating and transmitting data to the sink. Clustering helps in reducing energy consumption, prolonging network lifetime, and improving overall network efficiency.

### 2. Motivation

While traditional clustering algorithms like K-Means are efficient in forming compact clusters based on explicit criteria, they may lack adaptability to the uncertainty inherent in WSN data. Fuzzy Logic, on the other hand, accommodates uncertainty through degrees of membership but might sacrifice precision. The

## **Long-Term Traffic Forecasting in Optical Networks Using Machine Learning**

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**Abstract:** Here, we lay forth the framework for the optical network traffic forecast issue. The next step is to develop a machine learning strategy for effective network building using Graph Convolutional Networks and Generative Adversarial Networks. Predicts future states. Identifying network peak traffic that could impact routing choices is the primary goal. We check our findings using actual networks supplied by the operator of the network as well as with pseudo realistic datasets created in a bespoke simulator. The results validate the efficacy of our method in optimising both the short-term routing decisions and the long-term network architecture choices.

**Keywords:** Convolutional Networks, Generative Adversarial Networks, pseudo realistic, Datasets

**Introduction:** Cloud computing's great fault tolerance and user-friendliness have attracted many businesses in recent years. Consequently, there is a rising need for high-data transmission [1]. Leading cloud service companies, such Tech giants like Google, Amazon, and Microsoft are always investing and competing for a larger slice of the market. Unfortunately, this increase in demand is beyond the capabilities of the existing Internet infrastructure. To deal with the surge in traffic, some have suggested using new technologies as Spectrally-Spatially Flexible Optical Networks (SS-FONs) [2]. Two parameters, the dynamic spectrum and the space assignment, define the 'elasticity' of an SS-FON. According to [3], SS-FON is the most recent iteration of DWDM, which stands for Dense Wavelength Division Multiplexing. With separate spectral and spatial

fibre resource management, we can optimise space, bandwidth, and wavelength.

In order to increase transmission power as a whole, space-division multiplexing (SDM) and flexible wavelength allocation are the primary uses of the spatial dimension in fibres.

Furthermore, we will inevitably encounter physical limitations, regardless of how many new technology we use. The capacity crisis will be an issue for optical networks by 2030, according to studies [4]. We can explore more sophisticated ways to regulate it instead of trying to update the technology. The development of a cognitive network idea and the extraction of useful information from large datasets both need the use of these novel models [5]. Cognitive networks are a kind of network that use state-of-the-art analytical methods from several fields to address current issues in communication networks [6]. These fields include deep learning, data analytics, knowledge representation, telecommunication, and network administration. Cognitive optical networks are transport networks that use cognitive processes to understand the present state of the network, make decisions based on that perception, learn from past data, and predict what will happen next in order to accomplish end-to-end objectives.

Cognitive processes utilise different data analytics solutions, usually using machine learning methods, and learn from past data to enhance performance. Data analytics, ML, and deep learning are three potential methodological areas that might pave the way for cognitive network data analysis and, by extension, more sophisticated approaches to allocating resources. We seek to use cognitive

## Multiband and Wideband MIMO Antennas for Mobile Applications

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**Abstract:** An MIMO antenna based on meander lines with an L-shaped metallic strip for multiband operation is shown in this study. A monopole antenna with numerous sections of short-circuited transmission line works as an inductor and changes the antenna's impedance characteristics; this configuration is called a meander line. By using a line slot DGS (Defective Ground Structure) to decrease the mutual coupling between the antenna components and inserting two U slots on the ground plane, a 69% reduction in antenna size miniaturisation was accomplished. Well below the stated limit, we get the values of the envelope correlation coefficient (ECC) and specific absorption rate (SAR).

**Keywords:** MIMO; mobile antenna; multiband antenna; wireless communications; high isolation; miniaturization

### Introduction

Wireless service-based communication technologies are experiencing their pinnacle of expansion. Because of this meteoric rise, not only have the fundamental needs of the wireless sectors, but it also raised the bar for antenna makers. Currently, there is a need for a small antenna that can operate over a broad range of frequencies. When more than one electromagnetic band has to be covered in a single application, a wideband antenna is a great choice. An ultra-wideband (UWB) antenna may connect to any and all major communication applications, including WLAN, WiMAX, satellite, radar, and more [1]. The typical operating frequency range for a UWB antenna is between 3.1 and 10.6 GHz. Numerous publications from the past and present have proposed wideband

monopole antennas. Researchers mostly use the introduction of slots or faults in the resonating surface or with the bottom plane as a means to enhance the antenna's effective or fractional BW [2-3]. Antenna features such as a smaller operating frequency area, an expanded operating band, and a patch that is coupled to a finite impedance via slots cut into the ground plane are described in references [4-5]. Using asymmetric slots or several patches with varying forms is another way to increase the bandwidth

Antennas with wide bandwidths have also been obtained by several researchers using CSRR or EBG structures.

One potential issue with these methods is that they might cause fading when dealing with multipath circumstances. Antenna arrays are used to address this issue. Another option is to use a multiple-input multiple-output (MIMO) antenna, which may significantly increase the antenna's bandwidth but isn't always a solution to the issue. In addition to being very efficient, these antennas are also superior in terms of directivity.

In order to demonstrate multi-band operability and enhance the antenna fractional bandwidth, this study proposes a MIMO antenna configuration. The antenna is capable of functioning across many bands within the electromagnetic spectrum. Antennas in the X, Ku, K, and Ka bands are covered by it. I have submitted the results of the simulation of the suggested design that was conducted using the hfss v15 software to this document.

### Proposed Geometry of MIMO Antenna

  
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## Performance Improvements in Snr of a Multipath Channel Using Ofdm-Mimo

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**Abstract:** While utilizing the 2-11 GHz recurrence range, the Non View (NLOS) broadband remote access presented by Overall Interoperability for Microwave Access (WiMAX) is vulnerable due to the effects of variables, for example, multipath proliferation, diffraction blurring, vegetation weakening, shadowing misfortune, and more impacts. To get around these effects, you really want to set blur alleviation techniques in motion. A successful procedure for battling blurring and expanding the WiMAX framework's sign to-commotion proportion (SNR) is Symmetrical Recurrence Division Multiplexing with Numerous Sources of info and Results (OFDM-MIMO). The IEEE 802.16 standard expresses that for the association with capability, a base sign to-commotion proportion (SNR) of 6 dB is vital for QPSK balance. This study utilizes OFDM-MIMO to get a sign to-commotion proportion (SNR) higher than the functional limit.

**Keywords:** —WiMAX, fade mitigation, OFDM, MIMO, cyclic prefix, guard time

### Introduction

Consolidating various information different result (MIMO) with symmetrical recurrence division multiplexing (OFDM) balance makes a remote correspondence framework known as a MIMO-OFDM. Present day innovation utilizes a few receiving wires at the shipper and recipient closures of a framework to help its ability, improve its exhibition, and decline obstruction while at the same time expanding the transmission quality. Notwithstanding, symmetrical recurrence division multiplexing (OFDM) balance isolates the information stream into a few subcarriers. This

improves the framework's phantom effectiveness and assists with lessening the effect of channel blurring. By joining the two, MIMOOFDM frameworks give reliable, rapid remote correspondence across significant distances. Multiple-input multiple-output (MIMO-OFDM) wireless communication systems are utilized for a variety of popular applications, including digital broadcasting, cellular networks, and wireless local area networks. More prominent information speeds, greater inclusion, and improved strength to obstruction and blurring are only a couple of the advantages they give over more regular remote specialized techniques. Appropriated symmetrical recurrence division multiplexing (MIMO-OFDM) depends on utilizing OFDM tweak to convey data through these subcarriers. The data is spread out among all of the subcarriers to make the most of the available spectrum, and each subcarrier carries only a small portion of the total data.

A multiple-input multiple-output (MIMO-OFDM) system takes use of the spatial diversity of the wireless channel by using several antennas at the transmitter and reception ends. By merging the signals sent by each antenna at the receiver, the data rate and signal quality are both enhanced.

The MIMO-OFDM system employs state-of-the-art signal processing methods to lessen the impact of interference and multipath fading. Various algorithms are used by the system to process such as STBC, SM, and beamforming, which are used to encode the received signals. The signal quality is enhanced, the error rate is decreased, and such that the wireless communication system as a whole works better.

## Vehicle Theft and Toll System

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### ABSTRACT

Travellers in daily life pay a predetermined amount of tax to the government through the toll booth. The toll gates on national roads and bridges are where drivers pay to use the roadways by standing in queue, which causes a needless delay in their travel. Therefore, in order to avoid this problem, this suggested system approach uses a Radio Frequency Identifier (RFID) and security algorithm to automate toll plaza payment processing. The user is able to log in using the RFID system and input the source and destination in the proposed task. The system then displays any potential obstructions, such as toll booths. The user is led to the payment gateway after selecting the toll booths along the journey. The payment gateway is secured with encryption to promote security.

The Vehicle Theft and Toll System (VTTS) is an automated system developed to reduce car theft and enhance toll collection. In order to guarantee the safety and security of cars and their owners, the system includes a number of technologies, including GPS, RFID, and video systems.

The VTTS also has an automatic toll collecting system that does away with the requirement for cars to pull over and manually pay tolls. The system employs sensors at toll booths and RFID tags affixed in each car to automatically deduct the toll payment from the driver's account. This function enhances the effectiveness of the toll collecting process overall by enhancing traffic flow, reducing congestion, and other factors.

The VTTS offers a thorough solution to both vehicle theft and toll collection overall. The system provides both drivers and authorities with a high degree of security, convenience, and efficiency by integrating cutting-edge technologies.

#### **Introduction:-**

The Vehicle theft and Toll system project is a system designed to prevent vehicle theft and to facilitate toll collection at toll booths. The system is made up of hardware and software components such as DC motors, LCDs, microcontrollers, switches, resistance, and LEDs. The project aims to provide a secure and efficient solution to prevent vehicle theft and to streamline toll collection operations. The system detects the presence of a vehicle using sensors and automatically opens the toll gate for authorized vehicles, while unauthorized vehicles are denied access. The project uses microcontrollers and other electronic components to control the system, and the software used for programming is Keil micro vision IDE. This system can be beneficial in reducing traffic congestion and improving traffic management by providing a faster and more efficient way of toll collection.

Additionally, the Vehicle theft and Toll system project can also contribute to improving the overall security of vehicles, as it can detect and prevent theft attempts. The project utilizes various technologies, including infrared (IR) LED and photo diode, to accurately detect the presence of a vehicle and verify its identity. The project also incorporates anti-theft features, such as sensors that detect unauthorized entry and sound alarms to alert the owner and authorities.

Overall, the Vehicle theft and Toll system project has the potential to provide numerous benefits to vehicle owners, toll operators, and transportation authorities. The project's focus on preventing theft, improving toll collection efficiency, and enhancing traffic management can contribute to making transportation systems safer, more secure, and more sustainable

**Keywords: Electronics toll collection system, Radio frequency identification (RFID), Vehicle theft prevention, Microcontroller (AT 89S52) Embedded programming language, Automated gates.**

#### **LITERATURE SURVEY:-**

This paper provides , the toll collection is automated using RFID technology with the help of sensor the with the help of sensor presence of vehicle is detected at toll booths as soon as sensor



## **Knowing What Cyber Security Is and How to Use It Effectively Is Essential in Today's World**

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**Abstract:** Knowing what cybersecurity is and how to use it effectively is essential in today's world driven by technology and connectivity. Their systems are at risk without security measures to protect important data, information, and other critical virtual assets. Every company, IT company or not, should have equal protection. As new cybersecurity technologies evolve, attackers will not be left behind. They use better and improved hacking techniques and target the weak spots of many businesses. Cybersecurity is essential for the military, government, financial, medical, and corporate organizations to collect, apply and store unprecedented information from computers and other devices. A significant portion of this information may be sensitive information such as financial information, personal property, personal information, or other information that may cause you less concern about unauthorized access or acquaintances.

**Introduction:** An effective cybersecurity approach consists of multiple layers of protection deployed across a network, computer, program, or document that is designed to be non-toxic. In a community, processes, people, and equipment must be accompanied by the option to create a true defence during or after a cyberattack. A threat management organization can add anything to a variety of Cisco security products and accelerate critical security processes: detection, analysis, and remediation. Contacts The customer must respect and comply with important security information, such as choosing strong passwords, being careful

with email attachments, and backing up data. Learn more about the value of cybersecurity.

**Technology:** Technology plays an important role in cybersecurity as it provides tools and techniques to detect, prevent and respond to cyber threats. Here are some examples of technologies used in network security:

1. **Firewall:** A firewall is a network security device that monitors and controls inbound and outbound traffic. It acts as a barrier between the internal network and the Internet, protecting the network from unauthorized access and malware.
2. **Intrusion Detection and Prevention System (IDPS):** An IDPS is a security software application that monitors network traffic and detects and responds to threats in real time. Detects and protects against various types of attacks, including malware, denial-of-service attacks, and exploits.
3. **Antivirus software:** Antivirus software is designed to detect, prevent, and remove malware from a computer or network. Scans files and applications for malware and prevents them from being infected.
4. **Encryption:** Encryption is the process of converting data into code to prevent unauthorized access. Ensuring the confidentiality and integrity of sensitive information is an important technology in cyber security.
5. **Biometric authentication:** Biometric authentication is a security technology that uses physical or behavioural features such as fingerprints or voice patterns to identify and identify people.

  
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## Artificial Intelligence in Games

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Artificial intelligence (AI) has become essential for improving game playability and enhancing the game experience. Realism in modern computer games is achieved by integrating graphics, physics, and AI. The text defines a realistic game experience as the immersion of the game and the intelligence of non-player characters. Game AI allows players to interact with non-player characters and takes game experience to a higher level. The paper analyzes the history and current state of AI in game development and predicts the possible changes and impacts of AI technology based on machine learning on future game development.

**Keywords—Artificial intelligence, Game experience, machine leaning.**

### INTRODUCTION

PC game motors are continually developing and refreshing, prompting the improvement of game designs innovation. In any case, individuals are presently searching for more profound game meaning past lovely visuals. Present day PC games accomplish sensible encounters by coordinating illustrations, physical science, and man-made reasoning. The immersion of the game and the intelligence of non-player characters define realism in games. An effective game necessities an exceptionally reasonable man-made consciousness control framework as well as engaging visuals and sound.

All computer games today utilize man-made brainpower (man-made intelligence) here and there, with the exception of club games that utilize arbitrary number generators to guarantee decency. Computer based intelligence has been utilized in automated games since the 1950s, with one of the earliest models being the numerical procedure game Nim, which the PC had the option to beat human players at. The computer based intelligence Ferranti Imprint 1 machine was

likewise used to compose a round of checkers and chess around the same time. Simulated intelligence based checkers games kept on being created and finished in the loss of chess ace Garry Kasparov by

IBM's Dark Blue PC in 1997. In any case, conventional early computer games like Pong, Spacewar!, also, Gotcha were created with next to no artificial intelligence parts.

All video games today use artificial intelligence (AI) in some way, except for casino games that

use random number generators to ensure fairness. AI has been used in computerized games since the 1950s, with one of the earliest examples being the mathematical strategy game Nim, which the computer was able to beat human players at. The AI Ferranti Mark 1 machine was also used to write a game of checkers and chess in the same year. AI-based checkers games continued to be developed and culminated in the defeat of chess master Garry Kasparov by IBM's Deep Blue computer in 1997. However, traditional early video games like Pong, Spacewar!, and Gotcha were developed without any AI components.

### HISTORY OF AI IN GAMES

When game developers apply AI to computer or game console games, they will make the majority of players feel that the enemy controlled by computer AI system (NPC) they face has human intelligence just like the real enemy, so that the players can leave a realistic experience [7]. Game developers need to find innovations that further alienate their own games [8].

Because game AI has not made great progress like graphics technology and physical simulation technology, it provides a space for game innovation and alienation. The application of graphics technology and physical characteristics simulation technology has been insufficient, making a game unique [9]. As the technical core of improving game playability and the selling point of many commercial games promotion, game AI gives players the way to generate behavior and emotional interaction with non player characters in the game, and promotes the realm of game experience to a higher level [10]. How to endow the non player characters with credible intelligence, so that they can more truly reflect the

## Research Using Judgmental Sampling to Choose Samples From Ghaziabad City Internet Shoppers

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### ABSTRACT

The objective is to investigate the factors influencing consumers' online shopping behavior. Design, technique, and approach: a descriptive study that selects samples from online customers in Ghaziabad City utilizing judgmental sampling. A questionnaire was used to collect the data. After the factor analysis is completed to determine the factors, the nonparametric test is utilized for hypothesis testing.

Conclusions - The study's findings indicate that a variety of factors, such as social and demographic factors, the online shopping experience of consumers, website design, social media, situational factors, enabling conditions, product characteristics, sales promotional schemes, payment options, product delivery, and after-sales services, significantly influence the online shopping behavior of consumers.

**Research limitations/implications** – The study outcome cannot be generalized to the all online shopping users for the reason that of small sample size and geographical location from where data is collected. Future studies may also apply some more statistical techniques to increase the conclusiveness of the answers reported in this study.

**Practical implications** – The results should be of interest to the online retailers in deciding their marketing program.

**Originality/value** – The paper is based on original work, the questionnaire has been established reliable after checking the KMO values supports the capability of sample size. It will help the academicians and scholars in their research work in the structure of a literature on online shopping. It will also provide guidelines to online retailers in making their marketing program.

### Introduction

In India, online purchasing has been expanding quickly. The number of internet shoppers has increased, as has the size of their wallets. By 2024, it is estimated that Indian consumers' annual spending power would have increased to more than \$1.5 trillion, propelled by the country's growing middle class, whose size is projected to reach 580 million by then. According to a Bank of America Merrill Lynch (BofA ML) analysis from October 2021, internet services are the foundation of online commerce in India, where there will be 95 million subscribers by the end of 2023. On websites like Flipkart, online buyers may find over 35 million products across more than 75 categories, including books, everyday items, consumer electronics, and lifestyle. Amazon has also better its variety of products from 18 million to 35 million and Snapdeals has been contribution over 15 million unique products, SBI Research. There are more than 160 online shopping websites available in India providing goods and services straight to the consumers. These e-retailers provide an electronic products. The consumer select the products from their catalogue and purchase the product by compare it with other products. It has many advantages like global reach, range of products with required information. According to Taylor Nelson Sofres Interactive's "Global e-Commerce Report," the worldwide raise in e-commerce activity is most obvious for certain product categories, such as books, music videos, electronic goods, sports equipment, and toys, and for services such as consumer banking and finance, and health information. It save time during the purchasing of goods, because it eliminate the travel time required to go to the store. Consumer can purchase products 24X7, it also provide products at minimum achievable price, and consumer gets offers and discounts on purchasing products online. The consumers have put their mind to do online shopping due to the discounts, gift, and quality factor in e-store. Online shopping also has some disadvantages like while we do not purchase goods following searching it online then it results in wasting of time, it cannot be done without internet connection and one electronic gadgets (computer and mobile), it necessary extra money for arranging these two items.



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## The Meaning of Versatile Expansion In The Advancement of Portable Applications

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### Abstract

The widespread use of mobile smartphones and applications has significantly enhanced human productivity and has revolutionized everyday activities in both personal and business settings. Most business and personal applications have now shifted to mobile platforms due to the numerous benefits that mobile applications offer compared to traditional desktop applications, which present endless opportunities for new ventures. Mobile applications are now an integral part of various devices with different operating systems such as Android, iOS, Windows, BlackBerry, Symbian, etc. However, it has become increasingly challenging for development and quality assurance teams to ensure error-free mobile applications that work seamlessly on end-users' mobile devices.

In mobile application development, Android and iOS are the most commonly used operating systems for this purpose. The software can be either preinstalled on the device, downloaded from a mobile app store or accessed through a mobile web browser. Programming and markup languages like Java, Swift, C# and HTML5 are commonly used for this kind of software development.

Smartphones have introduced a new market in mobile communication known as Mobile Application development. With smartphones, developers can create numerous applications that can run on the given application environment. These Mobile Applications provide custom or user-defined functionality in Mobile Phones. Nowadays, Mobile Applications have become increasingly advanced, integrating various fields of mobile computing, such as wireless networks, Mobile Web Technology, GSM, GPRS, and more. However, as the capabilities of smartphones increase, previous users of smartphones also desire to use similar applications on their devices. The Mobile Augmentation Architecture offers a technique in which mobile application developers can create applications that can function on a platform or network that is not supported by the mobile device.

The focus of this paper is to describe the role of Mobile Augmentation in the field of Mobile Technology. It also suggests various mobile computing technologies that can be integrated to develop Mobile Augmentation technology. With the rapid advancements in mobile computing technology, Mobile Applications have become more advanced, and there is a need for robust functionality that can increase the performance and features of mobile devices. Mobile Augmentation offers an integrated technology architecture that can address this need. Additionally, the paper explains how to implement Mobile Augmentation Application and the Layered Architecture of a Mobile Augmentation Application.

**Keywords:** Application, Android, Mobile Web Technology, GSM, GPRS



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## Facial Acknowledgment utilizing Man-made reasoning and AI Procedures

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### Abstract

In the era of modern technologies emerging at rapid pace there is no reason why a crucial event in educational sector such as attendance should be done in the old boring traditional way.

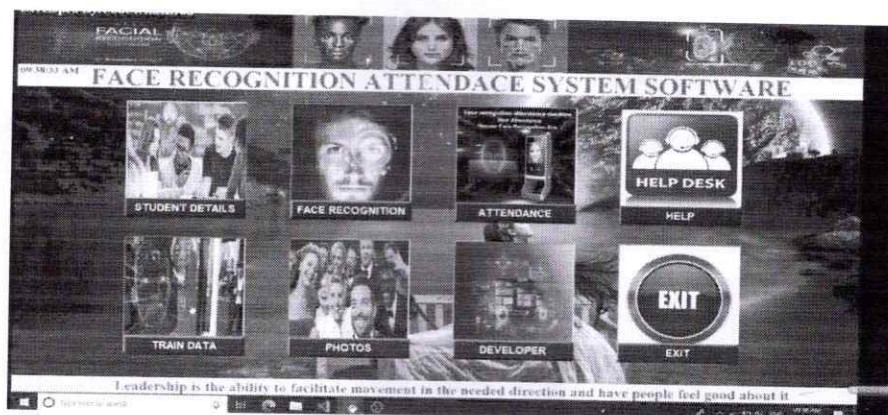
Attendance monitoring system will save a lot of time and energy for the both parties students as well as the class teachers. Attendance will be monitored by the face recognition algorithm by recognizing only the face of the students from the rest of the objects and then marking them as present. The system will be pre feed with the images of all the students and with the help of this pre feed data the algorithm will detect them who are present and match the features with the already saved images of them present in the database.

**Keywords:** Machine Learning, Decision Tree, Random Forest, K Nearest Neighbour.

### INTRODUCTION

The purpose of the attendance monitoring system using face recognition is to ease the attendance process which consumes lot of time and efforts , it is a convenient and easy way for students and teacher. The system will capture the images of the students and using face recognition algorithm mark the attendance in the sheet. This way the class-teacher will get their attendance marked without actually spending time in traditional attendance marking.

The identification process to determine the presence of a person in a room or building is currently one of the routine security activities. Every person who will enter a room or building must go through several authentication processes first, that later these information's can be used to monitor every single activity in the room for a security purpose. Authentication process that is being used to identify the presence of a person in a room or building still vary. The process varies from writing a name and signatures in the attendance list, using an identity card, or using biometric methods authentication as fingerprint or face scanner.





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## A Concentrate On Computerized Showcasing And It's Effects On Customary Promoting

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### Abstract

The world is moving from simple to computerized and advertising is no special case. As innovation improvement is expanding, the utilization of advanced advertising, virtual entertainment showcasing, web crawler promoting is likewise expanding. Web clients are expanding quickly and advanced showcasing has benefitted the most in light of the fact that it fundamentally relies upon the web. The buying habits of consumers are changing, and digital marketing is now more popular than traditional marketing. The motivation behind this survey paper is to concentrate on the effect of advanced promoting and how significant it is for the two shoppers and advertisers. This paper starts with a presentation of computerized advertising and afterward it features the modes of advanced showcasing, the distinction among conventional and computerized promoting, and the professionals, cons, and significance of computerized advertising in the present period.

**Keywords:** digital marketing, internet, online advertising, internet marketing

### INTRODUCTION

Marketing refers to the steps that the company takes to promote the buying of any products or services. The company seeks customers or consumers for their products or services via the help of marketing. Digital Marketing refers to the marketing of any product or service in digital form. For example, marketing using smartphones, computers, laptops, tablets, or any other digital devices. Digital marketing is a form of direct marketing that links consumers with sellers electronically using interactive technologies like emails, websites, online forums and newsgroups, interactive television, mobile communications etcetera [12].

'Digital marketing' term was first coined in the 1990s. Digital marketing is also known as 'online marketing', 'internet marketing', or 'web marketing'. It is known as 'internet marketing' because with the rise of the internet there is also high growth of digital marketing. The major advantage of digital marketing is that marketers can sell their products or services 24 hours and 365 days, lower cost, efficiency gain, to motivate the customer for more purchase and improve customer services [13]. It helps many-to-many communications because of its excessive degree of connectivity and is generally completed to sell services or products in a timely, relevant, non-public, and cost-powerful manner.

In 2005, there were around 1.1 billion internet users which consist of 16.6 percent of the population at that time [8]. In 2020, the number of internet users is around 4.8 billion and the percentage population has increased to 62 percentage [8]. And there is a direct connection between digital marketing and the internet. Countries like India and China have the highest number of internet users so they have a great opportunity.

The main objectives of this review paper are the following:

- Understand the various channels of digital marketing

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## Analytical Investigation of Ribbed Channels for Gas Turbine

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### Abstract

In this study, a ribbed surface in an interior channel of a stationary turbine blade is benchmarked computationally and validated using experimental data. In order to investigate the CFD conjugate heat transfer and duplicate a model from a published article, STAR-CCM+ was used to find the turbulence model that best matched the published experimental values. An internal experimental rig was confirmed by comparing convective heat transfer coefficients and pressure profiles using those computational parameters and the CFD results. When compared to a smooth channel, this cooling technique improves turbulent mixing by detaching and reattaching the boundary layer, increasing heat transfer. The general objective is to assess a practical cooling technique while taking into account the flow physics, efficient heat transfer rates, and channel pressure drop reduction. The  $V_2f$  turbulence model produced the closest matches to the experimental results, however EBk- turbulence model was employed for initial testing because to its instability at high Reynolds number. Shorter reattachment lengths and higher Nusselt number values between the ribs were the results for EBk-turbulence. The reported results' 6.8% and 6.66% respective levels of uncertainty are met by both the heat transport and friction components. Benchmark computational results will support the experimental setup's validity for further optimization and testing of various rib arrangement configurations.

**Keywords** : CFD, STAR-CCM+, Nusselt number, EBk-Turbulence

### 1. INTRODUCTION

There is more room for its manufacturing because to the ongoing need for energy and power. Today, a variety of power generation methods, such as land-based, water-based, and air-based methods, are widely used. The gas turbine engine, which is used to power practically all modern aircraft as well as land-based power plants, is one of the most widely utilised devices to create huge amounts of power. Such enormous masses are propelled into the air with the aid of the conversion of thermal energy into work (thrust). The Brayton cycle, which includes compressing air, creating heat, and turning that heat into work to propel the aircraft, forms the basis for gas turbine engine operation.

Continuous improvements in aviation engines have only served to boost their efficacy, create better, more aerodynamically sophisticated parts, reduce total weight, enable long-distance flight, etc. The temperatures of these adiabatic flames, which range from 1500 to 2000 °C, are higher than the melting points of the majority of the materials used to cast engine blades and other components. Therefore, internal cooling is crucial to ensure that turbine blades are used to their full potential without having to be replaced frequently because raising the turbine inlet temperature improves the gas turbine's efficiency. Due to the complexity of various cooling systems and the rate at



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## CFD Analysis of the Oil Pump of a High Performance Motorbike Engine

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### Abstract

The pump that is responsible for circulating oil throughout an internal combustion engine is the one that is responsible for providing lubrication to the rotating bearings, sliding cylinder, and cam shaft of the said engine. It is possible to employ fluid bearings with a bigger capacity, which means that they may provide better cooling. In the event that the sump pump is not placed at or close to the sump level, priming would be necessary. In order to access the bottom of the sump, you may use a simple wire-mesh strainer that is inside of a short pick-up pipe. When it comes to dependability and ease of use, mechanical pumps that are powered by crankshaft gear trains are the product of choice. When the crankshaft is spinning at 3,000 revolutions per minute, the pistons are forcefully rising and falling, which causes a great deal of movement in the engine. It is necessary to have a lubricating system that is capable of meeting the requirements of the car in order to eliminate the possibility of your engine melting down. The oil pan and the oil pump are two components of a full-pressure lubrication system that work together to prevent the oil from undergoing this unpleasant transition. Using the oiling system, it is possible to maintain the engine's lubrication in the appropriate manner. Lubrication of the engine is necessary in order to maintain the smooth operation of the moving components and to remove heat from the pistons, bearings, and shafts that the moving parts come into contact with. It's possible that the engine will break down if it isn't properly greased. In order for the engine to function correctly, it is necessary to pump motor oil through the various passages of the engine. When used in an oiling system, a wire mesh strainer is often responsible for removing bigger material from the oil before it is being discharged. In order to lubricate the engine, the flow of the oil pump is responsible for this. As part of this system, pre-lubrication is accomplished by the use of an oil cooler or filter, which eliminates impurities from the oil before it reaches the components of the engine.

**Keywords:** Engine lubrication, cooling and Vonmises Stress&StrainAnalysis

### INTRODUCTION

Lubrication of the engine's moving parts is accomplished by the use of a high-pressure pump that delivers engineoil to the bearings and pistons. Using a fluid bearing with a bigger capacity provides for improved cooling andlubrication of the engine and bearings. When installing a sump pump, it must be placed below the sump's oillevel.Pick-uppipeandbasicwiremeshstrainerareall

youneedtogettothesumpbottom.Therearemechanicalpumps that run on the crankshaft and are operated by mechanical gear trains. At 3,000 RPM, the valves in your engine execute a rapid two-step dance with each other, causing a lot of noise and vibration in your vehicle. Nomatter how fast or slow your engine runs, it's important to keep the





## Computational Fluid Dynamic Analysis of Performance of Centrifugal Pump Impeller on a Cooling System

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### Abstract

Blades that are aerodynamically efficient, easy to build, and mechanically sound are required to be produced by the arrangement of a centrifugal impeller. This approach of blade designing meets the basic two requirements, and with a truly proper choice of certain variables, it may also satisfy stress concerns. This method is as described here. Along with straight-line components that connect locations at the hub and shroud, the blade form is created with the assistance of surface pace distributions that are specified. Backward-swept blades and radially elemented blades are also possible layouts that may be achieved with this approach. This article provides a review of the history, a concise explanation of the concept, and an example of the design. It is possible that we will include the MATLAB programme into the process of developing pumps.

**Keywords:** Centrifugal, Pump, Impeller, Blades

### INTRODUCTION

The model that we are using has to be broken down into a number of smaller components that are referred to as finite elements in order for us to be able to carry out an assessment using infinite elements. Given that the model is broken up into a number of discrete components, finite element analysis (FEA) may be considered a discretization technique. For the purpose of carrying out a finite detail assessment, a mathematical internet, also known as a "mesh," is required. It is also possible for us to employ line elements to symbolise our geometry and to carry out our analysis if the machine that is the subject of the inquiry is of a one-dimensional in nature. If the inconvenience can be defined in terms of dimensions, then a two-dimensional mesh is required.

In the same vein, if the problem is complicated and a three-dimensional representation of the continuum is required, then we will make use of a three-dimensional mesh. It is possible for area elements to have a triangular or quadrilateral shape. Concerns relating to the intricacy of the geometry and the specifics of the problem that is being simulated are taken into consideration when making the decision about the shape and order of the elements. In the case of membrane factors, there is no thickness. They do not possess any bending stiffness, and the only loads that can be handled are those that are contained inside the detail plane. In order to simulate thin walled areas in a three-dimensional space, plate and shell components are used. The plate element is defined according to the spherical plate precept, which functions on the assumption that the load is carried by bending. Shell components are used in the process of shell variation, which has the potential to include a mix of flexure and membrane movement.

The pressure of a fluid may be increased using a centrifugal pump, which is a kind of rotor dynamic pump that makes use of a revolving impeller. In order to move liquids



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## Design & Analysis Of Drill Bit Of Drilling Machine For Various Drilling Process On Rocks

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### Abstract

It has been statistically researched if there is a link between the modulus ratio and the penetration fee of rotary and percussive drills. This investigation was carried out with the help of the raw data that was gathered from the experimental works of many researchers. On the basis of the modulus ratio and the penetration rate of rotary and diamond drills, an inverse power regulation was shown to exist between the two variables. Both rotary drills and diamond drills see a drop in their penetration rate when the modulus ratio increases. While the modulus ratio of percussive drills increases, the penetration costs of these drills also increase. The penetration charges of percussive drills and the modulus ratio are shown to have substantial linear connections with one another. A substantial link between the penetration price and the modulus ratio was found in one of the examples of percussive drilling. This association was seen for rocks that had a porosity price that was lower than 1.23 percent. In conclusion, it is possible to draw the conclusion that the modulus ratio is most likely a good assessment of the success of rock drilling. On the other hand, it is essential to do comparable research in order to validate the equations that were obtained for various types of volcanic rocks. The influence of porosity on the correlations between the modulus ratio and the penetration price is something that has to be researched using the same methodology.

**Keywords:** Rotary, Percussive, Drills, Rock

### INTRODUCTION

A tool that is equipped with a cutting tool attachment or a driving tool attachment, often a drill bit or driver bit, is referred to as a drill. Drills are used for the purpose of boring holes in a variety of materials or for affixing different materials together via the utilisation of fasteners. There is a chuck located at one end of the drill that is used to hold the attachment, and it rotates while being forced against the substance that is being targeted. It is the tip of the cutting tool, and occasionally the edges as well, that is responsible for cutting into the substance that is being targeted. This may include slicing off thin shavings (with twist drills or auger bits), grinding off tiny particles (using oil drilling), crushing and removing parts of the workpiece (using an SDS masonry drill), countersinking, counterboring, or any number of other procedures.

A wide variety of jobs, including those involving construction, metallurgy, woodworking, and do-it-yourself crafts, use drills. A variety of applications, including medicine, space missions, and others, make use of drills that have been specifically constructed. It is possible to purchase drills that have a broad range of performance qualities, including power and capacity, among other things.

There are several varieties of drills, some of which are operated manually, while others are driven by electricity (electric drill) or compressed air (pneumatic drill) which serves

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## An Investigation of the Failure of the Heat Exchanger's Shells and Pipe

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### Abstract

A heat exchanger, as its name suggests, is a device that transfers heat from one fluid—which may be very hot—to another. Engineers often use heat exchangers, which are devices designed to efficiently transfer heat from one fluid to another. Intercoolers, pre-heaters, boilers, and condensers are a few examples of components found in energy vegetation. The arrangement of the heat exchanger and the properties of the working fluid are two factors that determine the effectiveness of the heat switch. Important design characteristics include baffle spacing, tube layer, tube period, and pitch ratio. In this project, the efficiency of the heat switch is improved by using MATLAB drift simulation to determine the estimated heat switch rates after imposing the whole baffle pattern and travel tube design. The results of the simulations provide the optimal baffle and travel tube arrangement for the most efficient charge transmission of heat. Additionally, this project is concerned with determining the optimal fluid for maximum heat transmission capacity.

**Keywords:** Heat, Failure, Simulation, Tube, Vibration

### INTRODUCTION

A heat transfer system may be characterised in a number of ways, one of which is by the function that it provides within a system. The purpose of such a device is to ensure that the two fluids are able to transfer heat in the most efficient manner possible. However, the difficulty is that the same properties that increase heat transfer also increase the strain on the fluid that is contained inside a pipe. This implies that the cost of pumping the fluid will be much higher. It is thus possible that it is of the utmost importance to have a design that not only increases the amount of heat that is conveyed but also maintains the stress drop of the fluid that is flowing through the pipe within the permitted limit. An challenge that often arises in industrial settings is the process of extracting the maximum amount of heat from the utility flow of a system and warming up a method waft. One kind of apparatus is known as a heat exchanger, and its purpose is to transfer heat from a hot liquid to a cool liquid in the most efficient and cost-effective manner possible. Through the process of transferring heat from one liquid that is appealingly cold to another liquid that is appealingly warm, it is possible to lower the temperature of a liquid that is appealingly cold without mixing the liquids or changing the physical features of the liquids. Production facilities for oil and synthetic materials are dependent on heating as an important function. The discontent of a heat exchanger leads to an inadequate exchange of energy, which is the source of the aforementioned outcome. When it comes to the normal functioning of a heat exchanger, the administrator often does not need to put much effort into it. A heat exchanger's useful life may be significantly shortened if the processes for starting and stopping it are not followed correctly. Currently, shell and tube heat exchangers are the

  
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# Novel Hash Based Security Algorithm For Cloud Computing

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## Abstract

Security has always been a concern in Information Technology, especially in cloud environments. One of the main roles in information security is Cryptographic hashes. hash algorithm, which also called message digest algorithm is used to generate a special message digest for random message. Hashing algorithm is claimed to be an important element in the field of cryptography and security practices. Hashing has a one-way property, and it is because of this property that they are considered has a large role in providing message integrity and password retention. Hash algorithms are widely used especially in login authentication and verifying integrity message. In this case, a hash algorithm can help maintain message integrity. In this research the novel hash algorithm is introduced with 128 bit based encryption standard ensuring the data security and integrity for private, public, Community and hybrid cloud models.

**Keywords:** Data Security, Cloud Computing, Cryptography, Cloud Security, Advance Encryption Standard,

## INTRODUCTION

Cloud Storage consists of offering users the possibility of storing data on a remote server. The advantage of such a system is that the server will a priori be permanently connected to the Internet. From anywhere and at any time, a user can access, retrieve and store their data, via the various connection networks. This is all the more advantageous when the device which it uses has little memory, such as for example smart phones and gadgets. However, the issue of data security still needs to be adequately resolved. Even though this technology has been well known to the public for many years, populaces are not forever attentive of the jeopardy. One of them is identity theft. In France, according to a [1] study in 2019, the amount of testimony individuality thefts was roughly 250 millions. It primarily relies on the ability for an attacker to salvage individual and constructive data about somebody from many credentials that could be stored unprotected. Certainly, the fraud [2] prevention service in the United Kingdom and United States reports an increasingly escalating amount of identity fraud, starting 2007 to 2019. Thesethreats raise a few questions: How do these systems work? How are they protected against potential attacks? How protect confidential data? How to establish trust relation among theapplications hosted on cloud infrastructure; The security issue is essentially a trust issue where the main issue is that of the transparency of transport, storage and processing of data in these environments. Data transferred between user devices and Cloud Service Provider Data Centers is easy target for hackers or untrusted parties. Data security and confidentiality must be



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## Web based business site by utilizing Frontend Web Improvement

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### Abstract

We dwell inside the age where everybody need to attempt to do any add simple way, so our age is more energetic about web, web makes our life more straightforward. Most of people rely upon innovation to direct their lives and satisfy their ordinary needs. Most people in our age purchase garments, food, and gadgets through Web based business sites. Web based business isn't just the site where you'll sell your items and purchase somebody's item. I have fostered a Web based business site by utilizing Front-end Advancements like HTML, CSS, JavaScript. A few tabs on this site are responsive. There are a few regions on the site, for example, "Home", "Class", "Blog", "Contact, etc, that when you click on these buttons or segments, you will be taken to the substance. We have subsections in the Class Area mind h items coordinated by class. We have a shopping basket, a pursuit bar, and a sign In page. A few tabs on this site are responsive. Here on the site we made a different segment of "Include Truck", "Item Data tabs ". Furthermore, we utilize smooth movements for making our site more alluring and our site is easy to use, and doubtlessly the site will upgrade the client experience And I utilized more CSS , JavaScript , PNG of item and a couple of pictures of foundation for make rather more easy to use UI. We might purchase various styles of Telephones and pick various kinds of telephones upheld buyer interests by utilizing this site. We will add various merchandise to the current task and erase them also. They can without much of a stretch add items to their truck. Upheld the things inside the truck, then, at that point, we've installment button this may responsive after Back-end will connect with the site.

**Keywords:** Application development, HTML, CSS, Javascript, E-commerce, and front-end development are some of the keywords

### INTRODUCTION

We all know that in today's world, technology has become an indispensable instrument for online marketing. We can tell that most individuals throughout the world are interested in purchasing items via the internet. Furthermore, We can see, however, that many small shops and supermarket stores sell their products offline. Most of us will have a terrible experience with this style of selling. Might not remember of it, or the customer may require the merchandise quickly, within which case he will attend the shop, but the merchandise are out of stock, leading to a negative experience. Furthermore, clients may select from an oversized choice of products supported their interests and costs, and that they can compare prices from one store to a different via internet shopping. Creating an E-commerce internet utility is required for looking out and buying in each shop, after going through all the challenges and weaknesses of the offline buying device. These days, several e-commerce websites have been launched,

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## Music Application improvement

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### Abstract

The abstract for a music application in React JS and Firebase would describe a software solution for streaming and sharing music that utilizes the React JavaScript library for the frontend and Firebase as the backend service. The application would provide users with access to a vast music library and allow them to create personalized playlists, share music with others, and discover new artists and genres. The React framework would enable a responsive and intuitive user interface, while Firebase's real-time database and authentication services would provide a secure and scalable backend infrastructure. The application would leverage modern web technologies to provide a seamless and enjoyable music streaming experience for users across different devices and platforms.

**Keywords:** Music, Firebase, infrastructure

### INTRODUCTION

First, let's start with creating a new ReactJS project. You can do this by running the following command in your terminal:

#### **luanpx create-react-app music-app**

Next, you'll need to set up Firebase for your project. To do this, go to the Firebase Console, create a new project and follow the instructions to set up Firebase for your project

You'll need to install the Firebase SDK in your project by running the following command:

#### **npm install firebase**

Once Firebase is set up, you can start building your music application. Here are some features you can include:

- Authentication:** You can allow users to create accounts and sign in using Firebase Authentication. This will give you access to user information and allow you to restrict access to certain parts of your application.
- Database:** You can use the Firebase Realtime Database to store information about your music tracks, playlists, and user preferences. You can also use Firebase Storage to store audio files.
- Search:** You can use the Firebase Firestore to search for tracks based on various criteria, such as artist, album, and genre.
- Music Player:** You can use a music player library like React-Player to play audio files stored in Firebase Storage.
- User Interface:** You can create a user interface that allows users to search for tracks, create playlists, and play music. You can use ReactJS to create reusable components like buttons, inputs, and lists.

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## Assessment And Execution Manual For Json Web Token (Jwt) Verification

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### Abstract

This study tries to offer a careful assessment and execution manual for JSON Web Token (JWT) verification. As a protected and versatile choice for token-based verification in web-based applications, JWT has filled essentially in prominence. This paper investigates the critical ideas and parts of JWT, including its design, security highlights, and benefits. It additionally covers run of the mill execution designs, best practices, and possible shortcomings. The paper likewise gives a commonsense model put together bit by bit instructional exercise with respect to how to carry out JWT verification in a web application. When this article is done, understudies will have an exhaustive handle of JWT confirmation and be ready to involve it in their own applications in a protected and productive way.

**Keywords:** JWT, Json, design, security

### I. INTRODUCTION

The necessity for safe and dependable authentication procedures has grown more obvious in a time when technology is being integrated into a wide range of elements of our life. While organisations must preserve sensitive data and defend their systems from unwanted actors, users demand easy access to services. Traditional methods of authentication, such session-based and token-based systems, have drawbacks in terms of scalability, state management, and security flaws.

A potential answer to these issues and the provision of a more effective and secure authentication mechanism is JSON Web Tokens (JWTs). Users can authenticate and authorise themselves across various systems and services thanks to JWTs, which provide a small and self-contained framework for representing claims securely. By doing away with server-side storage and database lookups, this method makes implementation simpler and performance better.

This research paper's goal is to go into the global ecosystem of JWT authentication and investigate its guiding principles, benefits, and potential drawbacks. We seek to give a thorough grasp of JWT-based authentication and throw light on its relevance in contemporary software systems by performing an in-depth examination.

This research paper aims to advance knowledge of secure authentication mechanisms by examining the various aspects of JWT authentication and by assisting developers, security professionals, and system architects in making well-informed decisions regarding the adoption and implementation of JWT-based authentication solutions.



## Building a Music Streaming Application with Respond and Firebase

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### Abstract

The ubiquity of music web-based features has filled dramatically as of late. With the appearance of new innovations and the simple entry to music through cell phones, it has become progressively significant for designers to make dependable and easy to understand music streaming applications. In this exploration paper, we will examine the improvement of a music streaming application involving the Respond system and Firebase as the backend. We will investigate the different highlights and parts of the application, including confirmation, information base administration, and music playback. In this paper, we investigate the advantages and difficulties of utilizing Respond and Firebase to foster a music site. We lead a similar investigation of different devices, libraries, and structures accessible for Respond and Firebase, featuring their assets and shortcomings. We likewise examine the specialized parts of carrying out a music site, including client confirmation, information base administration, and continuous updates. Through this examination, we plan to give a far reaching manual for engineers who need to construct a music site utilizing Respond and Firebase.

**Key Words:** React, Firebase, UI, Music Website

### INTRODUCTION

Experiments can reinforce students' ability to understand, concept, knowledge, which combine theory from books and experimental practice together, especially in engineering education [1]. In recent years, the music industry has experienced a significant shift towards digital streaming services. Consumers are now more likely to stream music online rather than purchase physical copies. This shift has led to the development of numerous music streaming applications, each with its own set of features and functionalities. However, creating a reliable and user-friendly music streaming application requires a comprehensive understanding of web development frameworks and backend technologies.

React is a popular JavaScript library that is widely used for building user interfaces. It is known for its ability to create interactive and dynamic web applications. Firebase, on the other hand, is a Backend-as-a-Service (BaaS) platform that provides developers with tools for building and managing web applications. It offers a range of features, including authentication, database management, and cloud storage.

In this research paper, we will explore the development of a music streaming application using React and Firebase. We will discuss the various features and components of the application and how they were implemented.

React Native is an framework that enables web developers to create robust mobile applications using their existing JavaScript knowledge. It offers faster mobile





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## Fostering a Film Site utilizing Respond and Firebase: A Strategic Methodology

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### Abstract

This examination paper presents the improvement of a film site utilizing Respond and Firebase. The site is intended to furnish clients with a far reaching stage to peruse, search and watch films on the web. Respond is utilized for front-end improvement, while Firebase fills in as the back-end data set to store client data and film information. The site incorporates highlights, for example, client verification, film search, watchlist, and film playback. The improvement interaction incorporates building parts, styling, and coordinating Firebase into the Respond application. The site is tried utilizing different techniques to guarantee its usefulness and ease of use. The outcomes show that the site gives a magnificent stage to clients to access and watch their #1 motion pictures on the web.

**Key Words:** React, Firebase, Movie Website, User Interface, Backend-as-a-Service

### INTRODUCTION

The development of a movie website using React and Firebase is a perfect example of how modern web technologies can be used to provide a comprehensive platform for users to access and watch their favorite movies online. React is a popular JavaScript library for building user interfaces, while Firebase is a cloud-based platform that provides real-time database services for web and mobile applications. This research paper presents the development process of a movie website using React and Firebase and evaluates its performance and usability.

Development Process: The development process of the movie website includes the following steps:

- 1 Building Components: React is used to build the user interface of the movie website. The website is divided into various components, such as the home page, movie search page, movie details page, and watchlist page. Each component is built using React components and styled using CSS.
- 2 Integrating Firebase: Firebase is used as the back-end database for the movie website. It stores user information, movie data, and user watchlist information. Firebase is integrated into the React application using the Firebase JavaScript SDK.
- 3 User Authentication: Firebase provides user authentication services to the movie website. Users can sign up and log in to the website using their email and password. Firebase also provides OAuth authentication with popular social media platforms like Google and Facebook.
- 4 Movie Search: The movie search page allows users to search for their favorite movies using keywords. The search results are displayed using the MovieDB API. Users can filter the search results by genre, rating, and release date.



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# Exploration OF Self-Exercise Mentor Framework Utilizing computer based intelligence And ML

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## Abstract

Practices for wellness are very great for one's wellbeing and wellness. Assuming utilized inappropriately by the client, they may likewise be insufficient and, surprisingly, unsafe. At the point when the client doesn't take on the fitting position, practice mistakes are made. In our work, we give a product program that perceives the client's activity position and offers redid, top to bottom ideas on how the client can address their structure. Individuals presently more frequently practice without help from anyone else and without oversight as self-administration for the treatment of outer muscle sicknesses turns out to be more well known. Without criticism, it very well may be trying to recognize when an activity is being done appropriately, thus attempting specific exercises is dangerous. This could bring about additional damage. We cause to notice these issues and attempt to give the most ideal arrangement utilizing an application that distinguishes the client's position utilizing the most developed present assessment innovation, then evaluates the vector calculation of the posture utilizing an activity to convey accommodating input.

**Keywords:** computer, intelligence, Framework

## 1. INTRODUCTION

As we get closer to the future, we are observing numerous firms' strategies in the fields of artificial intelligence, machine learning, the Internet of things, data analytics, etc. The use of artificial intelligence and machine learning algorithms makes it possible to quickly and simply handle numerous problems that arise in daily life. One of these issues is estimating posture during exercise, which was brought to light during the lockdown among those who exercised at home without the guidance of a professional trainer. It became extremely difficult for them, and it can also be challenging to recognize when one is performing an exercise incorrectly.

When compared to people who are not physically active, those who engage in moderate to vigorous levels of exercise have a lower death risk. By lowering the possibility of inflammation, moderate amounts of exercise have been linked to delaying the aging process.

## Existing Technologies/Tools/Software

### 1.2.1 Open pose

It is the first multi-person real-time system that jointly identifies key places on the human body, hands, facial expressions, and feet on a single image. Researchers from Carnegie Mellon University made the suggestion. They have made their work available in the form of Unity, C++, and Python code.

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# Surveillance Based Hostel Security Measurement Using Data Analytics and Machine Learning technique RFID

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## Abstract

It is completely free to take part in any of the activities. The typical method is to register for the service to be attended in order to keep track of each student individually. Another method of determining attendance is the biometric system. Biometric recognition systems are used to recognise physical or behavioural traits such as the iris, voice, face, and fingerprints. Nonetheless, these procedures have proven to be time-consuming and boring. This marks the end of the counting procedure by making substantial progress in the stands. The proposed method is intended for the students present at the moment, but it can also be used for verification by other teachers. In this article, CCTV cameras are used to catch entering pupils in the hostel.

**Keywords:** RFID, Image processing, Data Analytics, Machine Learning, Surveillance, Segmentation

## INTRODUCTION

The first step in a long flow procedure is to recognize what art can detect input from the front to the pilot diameter. They are beneficial to kids in today's environment engaged in the type that is shown when it is only effective in the kind that is displayed in the hostel. Our civilization and the appearance of detection are nothing. The ability to recognize the human mind is the most important human capacity. And it's amazing how the human mind may persist even among people who are in close proximity to the human being and others, depositing the form of minor modifications. The positive image of human face recognition has garnered significant interest from researchers to replicate the commitment in time to researching and effective algorithms for facial recognition to electronic devices for human use.

Face detection is a process used to find faces with different expressions and sizes.

The method is supposed to locate the face of facial recognition. Face to face with the study into the detection of various expressions, and he is the desired corner backdrop image in various sizes reports, the parameters' face. By evaluating the patterns in an image, the look detects either of those objects that are formed. Here, algorithms that are known to the process make use of the extract, as well as a database that matches.

This project has been highlighted by the use of Selections, which are normally made known that it is such, and that the readings service. We used clickers, swiping their identity cards, and scribbling down names manually on paper allowed students to keep track of the project and inspired them to ask to run it. It appeared as if God's knowledge of a birth control method to detect the presence of the very creature formed with the



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## Keen Chatbot: Audit Paper

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### Abstract

A chatbot is a PC program that can speak with individuals in a human-like way. You have two choices to talk: you can either compose or utilize programming that transforms your expressed words into composed messages. A chatbot is a PC program that attempts to converse with individuals like a human does. Bunches of organizations use it to answer client questions and help them on the web. This new framework utilizes a PC program called a chatbot that can find and offer supportive responses from the web. It assists individuals with figuring out how to take care of issues utilizing a PC. The arrangement is to tell the chatbot the best way to understand what individuals mean and reply back in different ways utilizing directions. Subsequent to perusing many reports, we found that chatbots are useful for ordinary undertakings. Chatbots can act more like people when we converse with them on the grounds that Man-made brainpower is moving along. The point of this undertaking is to make chatbots that grasp your solicitations and give accommodating reactions. Doing things this way will mean we really want less individuals to do them rapidly and with greater quality. We need to attempt various things to perceive how we can get what we need.

**Keywords:** PC program, chatbot, grounds

### INTRODUCTION

Computers can now think and learn like people thanks to a technology called artificial intelligence. This technology is becoming increasingly popular on mobile devices. One thing we can do with this technology is make computer programs that can talk to humans, called chatbots. Chatbots have different uses - they can be practical or entertaining. However, we are unsure if they are truly helpful. Sometimes, people make chatbots without a good reason for why they need them. At first, some people might rephrase be curious about chatbots and feel like talking to them. To keep people engaged, it's important to have a chatbot that serves a specific purpose and provides useful information. Some people struggle to describe chatbots and use them well.

Chatbots can chat or send messages to people, but their level of assistance depends on the context. To understand how someone wants to share information, you must know their purpose and their surroundings. To know how people use chatbots every day, we need to look at it from the person's point of view who is using the chatbot and not just the one who created it.

To know if chatbots are good and people like them, we can look at how they perform compared to other choices. This helps us figure out if they are helpful. Chatbots on phones make using technology easier. Nowadays, there are lots of phone apps called chatbots. They can do lots of stuff on apps like Facebook Messenger, Slack, Telegram, websites, and Skype.

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## **Agent-Based Blocking and Response, Intrusion Detection using Signature**

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**Abstract:** Developing a reliable system for detecting intrusions is a challenging task that does not have a simple or quick solution. We contend, however, that mobile agent technology significantly advances the cause of an IDS's optimal behaviour. This article explores several approaches to One possible solution to the issue of intrusion detection and response might be the use of mobile agents. The study examines the advantages of software agents in general as well as those that arise from mobility. Once we've covered these advantages, we'll go over some ways mobile agent technology can fix the problems with existing intrusion detection systems (IDS) and the security risks that come with them. After an intrusion has been identified, we also examine several innovative methods for automatic responses.

**Keywords:** Intrusion Detection, Mobile Agents, and Computer Security

### Introduction

Originally designed as a kind of expert system, intrusion detection systems (IDSs) monitor user account activity patterns and alert the system administrator to any suspicious occurrences. Despite James Anderson's 1980 [1] proposal, the idea didn't take off until 1987 [2] when Dorothy Denning put her groundbreaking intrusion detection methodology into publication [9]. A monolithic design was used in early intrusion detection system implementations [21, 27, 28]. This meant that data acquired from a single host was analysed centrally, either at or around the moment of collection. Designers of intrusion detection systems realised that keeping tabs on a

single host's activities wouldn't catch assaults that included several hosts, so they came up with network-based IDSs. These use a traffic model to infer abuses or abnormalities from low-level packets that move across hosts [13]. One way to define network-based intrusion detection systems is as a shift from a detection focus on hosts to one on the network as a whole. Many issues with integrity and performance, as well as those related to audit trails, may be addressed by adopting a network-centric strategy [25].

The method utilised to detect an incursion is another way in which IDSs may be classified. Disruptions to a system's or user's usual pattern of operation might serve as indicators of an intrusion. Characteristics of inputted keystrokes, command profiles, and use time of day are all examples of possible behaviour. If the behaviour goes over a certain acceptable limit, a notice will be sent. It is also possible to identify an incursion if the observed behaviour closely matches a previously identified pattern. A rule-based method is usually used in this more direct kind of discrimination, whereby the rules codify patterns of intrusion called signatures. Notifications are triggered when an event or series of events matches a signature.

A two-component design was used by the initial generation of intrusion detection systems. The host's audit logs and internal interfaces or the connected networks' packet monitoring systems are the sources of data used in the gathering process. A centralised analysis method uses one or more detection

  
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## An Assessment of Placeio: A position stage for Understudies

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### Abstract

This examination paper assesses the viability of Placeio, a position stage that interfaces understudies with likely bosses. This stage has been created utilizing the cutting edge advancements, for example, respond js and Laravel. Respond is one of the well known web systems that has acquired significance over different structures, for example, Precise, Vue, and so on.. This is a result of its execution of Virtual DOM, whose essential goal is to upgrade the general presentation of the application. Then again, LARAVEL is a free open source PHP system. Framework sare on go, as there is compelling reason need to compose entire code. The consequences of this study propose that Placeio can possibly be a significant device for interfacing understudies with likely bosses and assisting them with accomplishing their profession objectives.

**Keywords:** Laravel , Dom , React-js , Placeio

### I. INTRODUCTION

The job market is becoming increasingly competitive, and students need to have a platform that connects them with potential employers. To address this need, we developed Placeio , an online job portal that enables students to register and apply for various jobs that are available to them. Administrators can also register and post job openings, review student applications, and filter student profiles based on their skills and status. This study aims to evaluate the effectiveness of Placeio in connecting students and employers. We used react-js for the front-end and Laravel for the server side scripting.

The major reason behind choosing react-js is that it uses the virtual DOM. React is largely an internet framework that changed into specially designed to cope with the overall performance problems with inside the netutility. React makes use of digital DOM that comes to a decision whether or not the aspect needs to be reloaded or now no longer primarily based to tally at the cutting-edgenation of the aspect and the modifications which have took place. This prevents the utility from re-rendering unnecessarily. Apart from this React additionally introduces one-manner information float which allows to govern the float of the information with inside the utility which makes the monitoring of the took placeless complicated and additionally simplifies the propagation and the stability.

### II. LITERATURE REVIEW

Online job portals have become increasingly popular in recent years, as they provide an efficient and effective way to connect job seekers and employers. Online job portals enable employers to post job openings and review candidate profiles, while job seekers

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## Research on Burden Adjusting of Distributed computing Stage

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### Abstract

Since the send off of this new distributed computing innovation, its improvement energy is relentless, and it colossally affects the application administration model: from idea to advancement to rehearse, distributed computing system specialists set forward individually, covering all angles, and even take a stab at flawlessness. PC improvement, It has forever been an examination focal point for undertakings and researchers. This paper initially breaks down the present status of distributed computing, cloud asset arranging and the executives, and afterward looks at existing asset arranging technique and burden adjusting calculation, consolidating the asset arranging system with the heap adjusting calculation, a cloud asset arranging methodology in light of burden adjusting is proposed, and the execution capacities of this procedure on the cloud stage and cloud reproduction stage are examined, lastly the examination content and deficiencies in the exploration cycle of this paper are summarized. Hope to help the improvement of related businesses.

**Keywords:** Cloud computing technology, load balancing, Hadoop technology

### INTRODUCTION

With the development of cloud computing technology, user needs tend to be diversified, Application types become more complex. In this paper, resource allocation, load balancing the specific requirements of balance, planning and control are introduced in more detail. Introduction, such as resource grouping and division, selection of task submission methods, resource Source planning strategies and algorithms, etc. The goal of cloud computing resource planning is to Under the premise of the total throughput of the platform system, the optimal planning of system resources is realized. Plan, and balance the load within the system according to user needs. From the quality of service From the perspective of quality of service (QoS) , the implementation of optimal planning, optimal completion time, Economic principles and load balancing are considered in four aspects. Now we can do more things on the Internet, such as online learning, online shopping , check email from anywhere, organize or attend online meetings, and more. It is undeniable that the Internet has brought a lot of convenience to our life and work. Benefits, such as auto-complete keywords or similar products when shopping online recommendation. These services make our selection easier and based on each different personal situations are optimized to achieve the effect of precise push. Exist while working and studying, we quickly and easily generate large Quantitative data. These data need to be stored and processed on the network, and the amount of data is increasing. In addition, an increasing number of smart devices such as the emergence and popularization of iPhone, iPad and smart watch have increased the



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## E-learning (Programming & Engineering)

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### Abstract

The focal point of study is to give a utilizing learning entrance to get viable information obtaining. As innovation keeps on developing, the period of present day instruction has seen a strong change with the rise of e-learning. E-learning, otherwise called internet learning or distance learning, has turned into an undeniably famous option in contrast to conventional homeroom based schooling. This theoretical investigates the idea of e-learning, its advantages, difficulties, and likely ramifications for students.

Our E-learning gateway is a weighty stage for fresher understudies, IT understudies as a decided well as a person towards discovering that makes it simple and viable to learn devices and innovations online as a running web application very easy to utilize our e-learning assets. From programming ideas to their center execution, our learning stage is intended to improve on the growing experience for the likely students and understudies the same. Understudies can take the virtual courses accessible on the online interface from any area whenever thanks to our learning stage's easy to use and get interface. Understudies are furnished with an unmistakable comprehension of their learning execution because of the moment rules and input it gives to the clients time to time.

The latest web advancements, like Rakish system, HTML, CSS, JavaScript, C#, .net center and cloud administrations like AWS, are utilized and used in the plan and improvement of our E-learning stage fabricate utilizing mongoDB coordination of data set. Client the executives, the board of various courses the board of verification, criticism the board, result the board, security, and openness of online interface are only a couple of the stage hearty highlights that ensure the wellbeing and protection of client information.

It is viewed as evident that the instructive foundations and other scholarly associations are not all that anyone could need for a trustworthy and powerful strategy for showing the center ideas to understudies. The stage's versatility and instinctive UI make it an optimal device for both students and director that oversee and keep up with the theoretical elements of entry. Understudies can begin learning with our gaining stage by jumping into virtual accessible courses from any area whenever, and chairmen can undoubtedly deal with the whole educational experience. Generally, our E-learning stage is a fundamental stage for the contemporary instructive scene since an amazing asset can change how learning is taken on.

**Keywords:** Angular, C#, .net core, MongoDB, Hypertext Markup Language (HTML), Cascading Style Sheets (CSS).

### INTRODUCTION

The traditional classroom-based education system is a way of providing education and assessing students' performance in learning, but it is very time-consuming and prone





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## Securities exchange Forecast Utilizing Twitter Opinion Examination

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### Abstract

Late incredible posts via virtual entertainment have overwhelmed the globe and have prompted assorted endlessly perspectives on the overall population. Virtual entertainment plays a huge represent or against an administration or a partnership that essentially can't choose the development of market however to get a handle on the feeling of twitter information that are posted via web-based entertainment with great strategy could be an incomparable need. It will dissect some twitter postings to get a handle on human semantic. In any tweet planned posting there are some downsized watchword. Finally, an informational index is prepared that comprises of special words gathered from twitter posts or remarks thus the informational index is prepared utilizing Guileless Bayes calculation upheld with applied science to recognize the feeling given during another call and remark. They will separate each expression of the posting thus it'll be coordinated by temperance with the informational index words for weakening. At last, it will be tried to their calculation utilizing various post from twitter that can convey the outcome with great exactness.

**Keywords:** human, partnership, watchword

### INTRODUCTION

Systems for predicting the stock market have long been a crucial resource for stock traders. In general, a variety of factors, including the price of gold, the price of oil, significant events, and last but not least news about stock market businesses, influence the direction in which stocks move. While the majority of parameters taken into account by stock market prediction algorithms are quantitative values, a sizable number of researchers have employed financial news to increase the accuracy of stock direction predictions.

Although the overall accuracy of stock price prediction using historical quantitative data is relatively high [1-3], these approaches are insufficient since they cannot adjust to the price fluctuations brought on by a number of significant events can affect investors' trust since human intuition is lacking. To make up for this deficiency, a number of prediction techniques that take into account both stock market prices and financial news have been improved [4-5]. The findings from many of these investigations, however, do not demonstrate high accuracy. For instance, Schumaker and Chen's [4] suggested method, which relies on noun phrases and proper nouns, only manages to attain accuracy levels of 58% and 58.2%, respectively. Therefore, a superior stock market prediction system needs to be thoroughly researched.

We created a new prediction method called Probabilistic Lexicon Based Stock Market Prediction (PLSP) in order to increase prediction accuracy. The suggested PLSP

## **Medical Services the Executives Framework**

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### **ABSTRACT**

The medical clinic's tasks are overseen and mechanized by the theoretical medical clinic the executives framework, which is a supporting framework. It manages gathering patient information, including conclusion particulars, and so on. The framework's basic role is to enroll, store, and recover patient and specialist data on a case by case basis, as well as to change this data in a helpful manner. While framework yield is to show these subtleties on the screen, framework input contains patient and conclusion explicit data. With the utilization of a login and secret phrase, one can get to the Emergency clinic The board Framework. A secretary or an executive can get to it. Only they can add information to the data set. The data is easy to recover. The handling of individual information is made conceivable by the information's elevated degree of security. A medical clinic or medical care office's inside medical services tasks can be smoothed out and mechanized with the utilization of medical clinic the board frameworks (HMS), which are PC based data the executives frameworks. A framework of HMS's benefits, hardships, and potential arrangements is given in this study. Patient enrollment, confirmation, release, charging, stock administration, clinical records the board, and arrangement planning are only a couple of the elements coordinated inside the extensive HMS framework. The innovation builds emergency clinic tasks' proficiency, diminishes desk work, and takes out mistakes, bringing about better tolerant care. HMS offers patients and medical services experts various benefits. It makes it simpler for specialists to rapidly and precisely recover patient data so they can conclude how best to treat their patients. Moreover, the framework upgrades patient wellbeing, cultivates joint effort among medical care experts, and gives a stage to information examination.

**Keywords- Hospital management, Healthcare facility, Dealing patients**

### **INTRODUCTION**

A hospital's everyday operations are managed and maintained by a software programme called a hospital management system (HMS). In order to provide effective and efficient management of the hospital's resources, the system assists in managing the medical, administrative, financial, and legal aspects of a hospital. The HMS has a number of modules, including ones for staff management, pharmacy management, appointment scheduling, medical billing and coding, patient records management, employee management, inventory management, and many others. The centralization of information, which makes patient data easier to access and administer, is one of the main advantages of an HMS. This guarantees that all medical records, diagnoses, prescriptions, and other pertinent data are kept in a safe, orderly manner, and are only available to authorised staff.

A computerised system called a hospital management system (HMS) aids healthcare organisations in more effective management of their daily operations. The system offers resources for handling a number of hospital operations-related tasks, such as patient registration, appointment scheduling, medical record administration, billing, and inventory management. HMS is intended to improve patient care by streamlining a hospital's daily operations. It connects many divisions, such as administration, financial, medical, and support services, to produce a holistic system that improves a healthcare organization's overall effectiveness. The system seeks to increase the standard of patient care, decrease wait times, and cut down on billing and medical record inaccuracies. The ability of an HMS to manage patient data electronically is one of its main advantages.

Various administrative, clinical, and financial components of a hospital or healthcare institution can be automated and managed by a software programme called a hospital management system. This approach contributes to improved efficiency, better patient care, and hospital operations that are streamlined. A hospital management system's main objective is to enhance patient outcomes by giving patients, staff members, and medical professionals fast and accurate information. Additionally, it enhances patient safety, lowers medical errors,

## Applying Prescient Displaying Strategies to Modern Issues

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sitieshwar Srivastava, Department of Computer Science & Engineering, RDEC, Ghaziabad

### Abstract

There are more than 2.2 million significant street mishaps in the US consistently. Which is the most noteworthy on the planet. However, amazingly, street mishaps in India are multiple times not exactly in the US, yet the quantity of passings is mutiple and a half lakh a year. Simultaneously, the quantity of individuals who bite the dust in excess of 22 lakh street mishaps in America is just 34 thousand. As per the near report, the quantity of passings in 2.2 million street mishaps in the US is near 37 thousand in a year. In India, around 30% of the 480,000 street mishaps for example 1.5 lakh individuals lose their lives. This figure is number one in the entire world. Japan has the second-biggest number of street mishaps on the planet. There are 500,000 little and huge street mishaps in Japan and the quantity of individuals who bite the dust from street mishaps here is just 4,500 every year.

**Keywords—Industry, safety**

### 1. Introduction

Overall, this paper highlights the challenges that arise when applying predictive modeling techniques to industrial problems and proposes a novel approach for addressing these challenges using a general conceptual architecture that incorporates parameter cross-validation, ensemble techniques, and meta-learning. The proposed instance of this architecture is shown to be effective and robust when applied to real-life data sets. In this way, the data is transformed in favor of the modeling techniques (see [1] for a review of such case studies). However, the drawback of this approach is that because the data can dramatically change from case to case, each new case requires new time-consuming manual pre-processing. Furthermore, once the data is pre-processed the correct predictive method must be selected. This selection is critical for the performance of the whole model since different techniques have different strengths and weaknesses. Very often one cannot see a-priori which technique fits best the data and different methods and their parameters have to be tried. Even more critically, in an industrial environment, the model developers often have their favorite techniques and focus only on these without taking any other approaches into account which is not of advantage for the final performance of the model. The most applied techniques to industrial modelling problems are ranging from statistically based Principal PetrKadlec and Bogdan Garbs are with the Computational IntelliJgene Research Group, Bournemouth University, Bournemouth, BH12 5BB, United Kingdom . Component Regression [2], Partial Least Squares Regression [3] and Support Vector Machines [4] to techniques from computational intelligence like Multi-Layer Perceptron [5] and Neuro-Fuzzy Systems [6]. Although many applications of these techniques have been published (see e.g. [1], [7] for reviews) most of the authors claim that a certain effort must be spent on the preparation of the data (i.e., data pre-processing) as well as the techniques (i.e., parameter selection). Another problem is that one also cannot separate the two previously discussed tasks, i.e., data pre-processing and predictive technique selection and parametrization due to their mutual influence on each other. This fact further increases the number of possibilities to be tested in order to identify a well-performing model. Section II shows a brief overview of the conceptual architecture and outlines its most critical aspects necessary for the understanding of the proposed instance. This is followed by a methodology for the development of the model and the way in which the data is typically provided in an industrial environment in Section III. Section IV is the main contribution of this paper as it presents the actual instance of the architecture and shows the mechanisms applied in order to achieve high robustness and adaptive capabilities. The model is then evaluated in Section V by applying it to two real-life data sets. Finally, the paper is concluded in Section VI.

### 2. Architecture Overview

This section gives a brief overview of the architecture which is instantiated in this work. The architecture is in more detail discussed in [11]. Due to space limitations the figure showing

## User-Friendly Online Bookstore Based on Programming

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**Abstract**— At this time, Web has become implanted in our regular day to day existence in each viewpoint. It has turned into the most favored medium in everyday existence of people. The web went through huge development at different levels and fields. Web is changing business, shopping, training, and so forth. These days, e-business has grown up and it assumes colossal part in the ongoing worldwide economy. The on the web book shop or home transportation permits client to shop books from their homes instead of customary bookshop, which expects one to visit book shop, libraries, and so on. Online request needs only a couple of snap and gives numerous computerized installments choice. Online Book Shop furnishes openness of a particular book with promptness and helpfully. Such web application like Amazon, Flipkart have incited the advancement of e-business. It is clear web business possible website which has assortments of books for a client to purchase on the web.

**Keywords** - Internet, e-business, digital payments, accessibility, conveniently, feasible site.

### Introduction

Over the last 10 years, the programming language has been revolutionizing the world. It is a rapidly growing field in the zone of engineering standards. Programming has opened countless new ways almost in every industry. There are different innovative, effective and creative programming arising out in the market which have made the life of an average person ease and straightforward. Our user-friendly Online Bookstore is based on one such programming. It is a fusion of both internet business and book industry. The online book shopping is a revolution of traditional book industry. The online

book shop has a great deal many benefits. It is developed on the basis of principle of providing convenience.

It has following benefits:

- Homedelivery
- Affordablecost
- Varieties ofbooks
- Various paymentmode

It is similar as like shopping websites but is only applicable for buying books. There is certainly no need for a customer to go out and searching for specific book.

### Purpose and Significance

By using Online bookstore website, customers do not need to visit physical book store. They can utilize the internet connecting facility for buying books by just only log on online book store website. The book of his/her choice can be effectively bought utilizing the web bookshop site while sitting in their comfortable customary range, simply connect to the online website of books and an internet browser.

Online Bookstore have following goals:

- Reduce time, cost andenergy
- Easy to operate24\*7
- Convenient
- Development ofE-logistics
- Maintaining books list,quantity

### Development Environment and Technology

Building up an online business site requires different pre-imperatives.

For implementation this website uses:

- Java
- JDBC
- HTTPServlets

  
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## Virtual Web-Based Instructive Commercial Center

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### Abstract

Virtual Web-based Instructive commercial centers are online stages that give an abundance of data and assets to help students in their examinations. These sites offer an extensive variety of learning open doors, including on the web courses, instructional exercises, recordings, digital books, and intuitive exercises. They cover different subjects, from science, arithmetic, and history to language learning, experimental writing, and expert turn of events.

#### →Understandable Benefits -

The advantage of these sites is that they permit students to get to top notch instructive assets from anyplace and whenever. They additionally offer customized growth opportunities and permit understudies to learn at their own speed. Besides, instructive sites can assist with overcoming any issues between customary homeroom learning and cutting edge computerized learning, consequently giving a really captivating and enhancing instructive experience.

As well as making an outwardly engaging and intelligent plan, the front-finish of instructive sites likewise should be enhanced for execution and openness. This implies guaranteeing that the site stacks rapidly, works flawlessly on various gadgets, and is open to clients with incapacities.

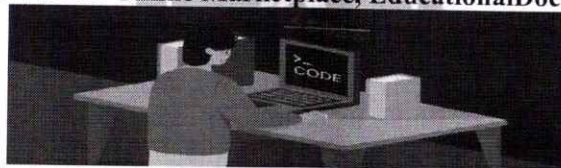
#### Introduction -

In addition to providing access to a wealth of information and resources, educational websites also foster collaboration and community building. This creates an opportunity for learners to interact with peers from different parts of the world, learn about different cultures, and exchange ideas.

Furthermore, educational websites are often free or low-cost, making them accessible to learners of all ages and backgrounds. They also provide a more sustainable alternative to traditional paper-based resources, reducing the impact on the environment.

As such, educational websites have become an indispensable tool for learners looking to enhance their knowledge and skills in the 21st century.

**Keywords: Virtual Online Marketplace, Educational Documentation**



#### Materials And Methods / Engineering Principles -

The engineering behind educational websites involves a combination of various technologies and programming languages. First, the user interface (UI) and user experience (UX) design are essential components of any educational website, as they determine the ease of use and interactivity of the platform.

##### 1)Frontend Engineering Principles -

The website's layout and functionality are usually designed using HTML, CSS, and JavaScript. These languages provide the building blocks for creating responsive and intuitive designs that work on different devices.

In addition to the database, the backend of educational websites also typically involves the use of APIs (Application Programming Interfaces) that allow the website to interact with external services and applications. APIs are used for a wide range of purposes, such as processing payments, integrating with learning management systems, and accessing social media platforms.

  
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## Innovative, Effective and Creative Programming Online

### Bookstore

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#### Abstract

At this time, Web has become implanted in our regular daily existence in each perspective. It has turned into the most favored medium in everyday existence of people. The web went through gigantic development at different levels and fields. Web is changing business, shopping, schooling, and so forth. These days, e-business has grown up and it assumes massive part in the ongoing worldwide economy. The on the web book shop or home delivery permits client to shop books from their homes instead of conventional bookshop, which expects one to visit book shop, libraries, and so forth. Online request needs only a couple of snap and gives numerous computerized installments choice. Online Book Shop furnishes openness of a particular book with promptness and helpfully. Such web application like Amazon, Flipkart have incited the improvement of e-business. It is clear web business plausible webpage which has assortments of books for a client to purchase on the web.

**Keywords—** Internet, e-business, digital payments, accessibility, conveniently, feasible site.

#### Introduction

Over the last 10 years, the programming language has been revolutionizing the world. It is a rapidly growing field in the zone of engineering standards. Programming has opened countless new ways almost in every industry. There are different innovative, effective and creative programming arising out in the market which have made the life of an average person ease and straightforward. Our user-friendly Online Bookstore is based on one such programming. It is a fusion of both internet business and book industry. The online book shopping is a revolution of traditional book industry. The online book shop has a great deal many benefits. It is developed on the basis of principle of providing convenience.

It has following benefits:

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#### Purpose andSignificance

By using Online bookstore website, customers do not need to visit physical book store. They can utilize the internet connecting facility for buying books by just only log on online book store website. The book of his/her choice can be effectively bought utilizing the web bookshop site while sitting in their comfortable customary range, simply connect to the online website of books and an internet browser.

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- Convenient
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- Maintaining books list,quantity

#### Development Environment and Technology

Building up an online business site requires different pre-imperatives.

For implementation this website uses:

- Java
- JDBC
- HTTPServlets
- HTML, CSS, Javascript
- MySQL

  
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## **Data Mining Technique Based Building Intelligent Shopping For Web Services**

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### **Abstract**

The phrase "e-marketing" refers to the coordinated effort to bring traditional marketing methods into the digital realm, namely the World Wide Web and social media. If you own an online store, your e-marketing efforts should guide customers to a successful transaction. For this, you need to have an in-depth understanding of what the client likes. This is why online store owners need to figure out when, how, what, and to whom they should direct the client, thus, to learn about the "consumer decision journey" and enhance their involvement. The consumer leaves a digital imprint when they purchase online, which may be analysed to learn about their wants, requirements, and demands and to enhance their online presence. It is possible to have a better understanding of the e-marketing and sales processes by using these data for data mining. Here we provide the results of a study we conducted among 86 Spanish online stores. The results provide some suggestions for effective e-marketing strategies based on consumer purchasing behavior study. Different data mining approaches facilitate the purchase and interaction, thereby suggesting new e-marketing trends from a strategic, tactical, and operational level.

**Keywords:** Data mining, e-marketing, consumer decision journey, World Wide Web

### **Introduction**

The number of people using the Internet has increased by a staggering 33 percent in the last decade. This has resulted in its increased popularity among customers, who use it for a variety of purposes, including finding information and making purchases ("The internet a decade later", 2013).

As a result of customers' embrace of this new technical environment, electronic commerce (EC) has grown, and consumers' behaviour, habits, and patterns have undergone a dramatic shift

In order to get recognition in a worldwide market and enhance their conventional company, small firms are now compelled to have a strong online presence due to the prevalence of this kind of commercial activity. Except that there is a difference between virtual and conventional consumer behaviour (Eouzan, 2013).

Internet visibility, however, enables a number of other benefits, including: a) a permanent openness to the public; b) a reduction in costs (material stock, logistic personnel, physical space); c) a better understanding of the customer; d) the removal of geographic limitations; and e) the creation of brand and engagement.

Online business-to-consumer sales in Spain increased by 13% to €12,383 million in 2017, according to research from the country's National Observatory for Telecommunications and the Information Society (ONTSI). An rise of 15% (15.2M) in online shoppers in 2012 was the primary driver of this expansion, mirroring trends seen in global markets (ONTSI, 2013).

In Spain, the National Statistics Institute (INE) provides more precise data that is both up-to-date (2013) and derived from regional levels. An estimated 11 million Spaniards have shopped online in the past year, with the rise of e-commerce being largely attributable to this data institute. Of the overall population, this makes up 32%. In addition, according to INE (2013), the Basque Country has used this kind of trade the most, accounting for 42% of all instances. The Community of Madrid comes in second, with 40%.

With a focus on Basque Country, the Statistic Institute of Basque Country (EUSTAT) offers data-bank and yearly report information about e-commerce (under the information society theme). An intriguing part of this research is devoted to online business. According to EUSTAT (2014), 39% of internet users who have recently connected have made an online transaction.

Official statistics show that e-commerce is a growing industry, and this is largely attributable to the nature of the business itself. Small enterprises, in particular, stand to gain economically from a country's commitment to its implementation.

## **Forward-Moving Step in the Development of the Web and Advancing the Utilization of Web 3.0: A Review Paper**

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### **Abstract**

The rise of Web 3.0 has made ready for another period of the web, where information proprietorship, security, and personalization become the overwhelming focus. In this paper, we investigate the idea of a web and fate of it, which includes a more natural and intelligent web experience that focuses on client control and organization. We examine the different innovations and systems that including blockchain, Man-made consciousness, and AI. Moreover, we look at the difficulties of web3.0 and its equation, especially in the space of information assortment and security. The way we direct exploration and cooperate with the web, and it addresses a significant forward-moving step in the development of the web and advancing the utilization of web 3.0.

**Keywords: Web3.0, Blockchain, Artificial intelligence, decentralized.**

### **I Introduction:**

In the 1980s, British scientist Tim Berners-Lee created the World Wide Web while working at CERN, the European Organization for Nuclear Research [1]. Berners-Lee developed the concept of hypertext, which allows users to navigate between different documents via hyperlinks. At the end of 1990, Tim Berners-Lee proved his idea and ran the first web server and browser at CERN. He developed the web server's code on a NeXT computer. To prevent it from shutting down, the computer has a note written in red ink: "This machine is a server. Do not turn off the power!!".

Internet growth was recorded at 342.2 percent in years from 2000 to 2008, indicating the importance of the Internet for people [2]. The way people communicate, work, and live has been completely transformed by the Internet and the World Wide Web. The web is the best medium for collecting and disseminating information in the fastest and cheapest way. The web has changed our daily lives, changing the way students, teachers and companies work.

We have now discussed the many web generations and their shortcomings. Web 1.0 was a very basic platform. Web 1.0 features static information that is more challenging to update. Considerably more accurate and informative. It essentially only contained read-only messages [3], but not a very good talk. Web 1.0 is not more creative and useful. As I exploring about web 1.0 is all about getting information and reading.

The emergence of the next generation of the web, known as Web 2.0, promises to revolutionize the internet yet again by introducing a more interactive and collaborative online experience [4]. With Web 2.0, users can now create and share content, collaborate with others, and participate in social networking, making the web a more creative and useful tool for people.

Web 2.0 features dynamic information that can easily update. It allowed for the creation of applications such as Facebook, Twitter, and Wikipedia.

Web 2.0 refers to the current era of the Internet where it is more important for users to create content and improve usability for end users compared to previous versions of the website, Web 1.0. The move to Web 2.0 has led to the freedom to create content online, allowing users to easily create and share their own content and improve relationships and collaboration between users. This evolution of the Web has made the Internet more collaborative and powerful, paving the way for the development of new applications and new services.

Now web 3.0 are going to coming, it's going to be championing principles of decentralization. Web 3.0 is described as "read-write-execute". It is known as the future of the internet. It involves a space where people operate on decentralised [5], almost anonymous platforms. This means moving away from the big, guiding hands of tech giants like Google, Facebook, and Twitter. Web 3.0 was originally called the Semantic Web.

Web 3.0 has many advantages, including the use of technologies that allow machines to understand and interpret information more effectively. Another key aspect of Web 3.0 is the



## **Fostering a Film Site Utilizing Respond and Firebase: A Systemic Methodology**

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### **Abstract**

This exploration paper presents the improvement of a film site utilizing Respond and Firebase. The site is intended to furnish clients with an exhaustive stage to peruse, search and watch films on the web. Respond is utilized for front-end improvement, while Firebase fills in as the back-end data set to store client data and film information. The site incorporates highlights, for example, client validation, film search, watchlist, and film playback. The advancement interaction incorporates building parts, styling, and coordinating Firebase into the Respond application. The site is tried utilizing different techniques to guarantee its usefulness and ease of use. The outcomes show that the site gives an incredible stage to clients to access and watch their #1 motion pictures on the web.

**Key Words: React, Firebase, Movie Website, User Interface, Backend-as-a-Service**

### **1 .Introduction**

The development of a movie website using React and Firebase is a perfect example of how modern web technologies can be used to provide a comprehensive platform for users to access and watch their favorite movies online. React is a popular JavaScript library for building user interfaces, while Firebase is a cloud-based platform that provides real-time database services for web and mobile applications. This research paper presents the development process of a movie website using React and Firebase and evaluates its performance and usability.

Development Process: The development process of the movie website includes the following steps:

- 1 Building Components: React is used to build the user interface of the movie website. The website is divided into various components, such as the home page, movie search page, movie details page, and watchlist page. Each component is built using React components and styled using CSS.
- 2 Integrating Firebase: Firebase is used as the back-end database for the movie website. It stores user information, movie data, and user watchlist information. Firebase is integrated into the React application using the Firebase JavaScript SDK.
- 3 User Authentication: Firebase provides user authentication services to the movie website. Users can sign up and log in to the website using their email and password. Firebase also provides OAuth authentication with popular social media platforms like Google and Facebook.
- 4 Movie Search: The movie search page allows users to search for their favorite movies using keywords. The search results are displayed using the MovieDB API. Users can filter the search results by genre, rating, and release date.
- 5 Watchlist: Users can add movies to their watchlist by clicking the Add to Watchlist button on the movie details page. The watchlist information is stored in the Firebase database and is accessible to the user when they log in to the website.
- 6 Movie Playback: The movie playback feature allows users to watch movies online. The video player is integrated into the website using the React Player library. The movie playback feature is only accessible to registered users.

7 React is a popular JavaScript library for cloud-based platform that provides a backend infrastructure for web and mobile applications. In this research paper, we will explore the use of React and Firebase to build a movie website that allows users to search for movies, view movie details, and save their favorite movies. We will also provide references to relevant literature and resources that can be used to further explore these technologies To build the movie website, we will use

React for the frontend and Firebase for the backend. The website will have the following features:

- Home page: A landing page that displays popular movies and allows users to search for movies by title, genre, and year.
- Movie details page: A page that displays

## **Web Based Business Site by Utilizing Frontend Web Improvement**

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### **ABSTRACT**

We live inside the age where everybody need to attempt to do any add simple way, so our age is more energetic about web, web makes our life more straightforward. Most of people rely upon innovation to direct their lives and satisfy their regular needs. Most people in our age purchase garments, food, and gadgets through Online business sites. Web based business isn't just the site where you'll sell your items and purchase somebody's item. I have fostered a Web based business site by utilizing Front-end Advancements like HTML, CSS, JavaScript. A few tabs on this site are responsive. There are a few regions on the site, for example, "Home", "Class", "Blog", "Contact, etc, that when you click on these buttons or segments, you will be taken to the substance. We have subsections in the Classification Area mind h items coordinated by class. We have a shopping basket, a hunt bar, and a sign In page. A few tabs on this site are responsive. Here on the site we made a different segment of "Include Truck", "Item Data tabs ". Furthermore, we utilize smooth livelinesss for making our site more appealing and our site is easy to use, and most likely the site will upgrade the client experience And I utilized more CSS , JavaScript , PNG of item and a couple of pictures of foundation for make rather more easy to use UI. We might purchase various styles of Telephones and pick various kinds of telephones upheld buyer interests by utilizing this site. We will add various products to the current venture and erase them also. They can without much of a stretch add items to their truck. Upheld the things inside the truck, then we've installment button this may responsive after Back-end will connect with the site.

**KEYWORDS --- Application development, HTML, CSS, Javascript, E-commerce, and front-end development are some of the keywords**

### **INTRODUCTION**

We all know that in today's world, technology has become an indispensable instrument for online marketing. We can tell that most individuals throughout the world are interested in purchasing items via the internet. Furthermore, We can see, however, that many small shops and supermarket stores sell their products offline. Most of us will have a terrible experience with this style of selling. Might not remember of it, or the customer may require the merchandise quickly, within which case he will attend the shop, but the merchandise are out of stock, leading to a negative experience. Furthermore, clients may select from an oversized choice of products supported their interests and costs, and that they can compare prices from one store to a different via internet shopping. Creating an E-commerce internet utility is required for looking out and buying in each shop, after going through all the challenges and weaknesses of the offline buying device. These days, several e-commerce websites have been launched, such as Flipkart, Amazon, and Mynta, where people can quickly purchase their required things. These websites allow people to buy their products while remaining at home. Finally, we are able to see a difference in product prices, like after we see that the value of a product is slightly more in offline buying compared to online purchasing because it can help us create the foremost effective and powerful web applications, front-end are going to be the simplest option for building these styles of E-commerce web apps. E-commerce is described as the purchasing and promoting of items and services over a digital network, most many times the internet, as nicely as cash and facts transfers (electronic commerce).

  
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## Greening the Supply Chain: Identifying Barriers and Drivers for Small and Medium Enterprises in Nagpur

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**Abstract** Nowadays, "green supply chain management" (GSCM) is a buzzword that means more and more important things. Most SMEs are setting up their own manufacturing facilities in order to compete in a highly competitive market. Public awareness, economic development, environmental concerns, and legislative shifts have all contributed to an increase in the demand for GSCM. In this context, this research seeks to identify the drivers and challenges encountered by small and medium-sized enterprises (SMEs) in Nagpur. Researchers have identified a number of drivers and obstacles in order to establish the contextual linkages between them. It was also suggested that the drivers of GSCM implementation in SMEs be identified utilising the Modification Strategy. After reviewing the literature and consulting with academics and businesspeople, six distinct types of relevant obstacles were identified. Three obstacles have been identified as part of the driver construct, three as part of the connection construct, and one as part of the dependant construct. Right now, we don't know of any barrier that can function independently. There is one barrier at the lowest level and three at the upper level. We thought of ways to get rid of these problems. A model of these obstacles was constructed based on the speculations of specialists. The findings may then be fine-tuned to address a practical problem.

**Keywords:** SME's, Nagpur, green supply chain management, Barriers, drivers

### Introduction

A company may convert its inputs into its outputs with the use of traditional supply chains, which consist of interconnected links. Timely and cost-effective commodity delivery was a problem in

earlier supply chain situations. But as urbanisation and globalisation accelerated, individuals began to see the traditional way of working differently. The present supply chain peaks are centred on the concept of "sustainability," which emphasises the need of accepting ecologically friendly practises and making effective use of resources related to people, materials, and money.

The present era's popular subject is supply chain management, which involves opening up new sites to economically match demand and supply designs. Also, researchers are starting to focus on this field to find new ways to improve supply chain efficiency. For supply chain to thrive in the current competitive environment and hold onto significant market shares, it has to undergo a review for the implementation of legislation pertaining to occupational policies. Academics and businesses are examining new solutions to address pressing demands as a result of these situations. As already stated by Silvestre (2015).

The Brundtland Report was the first source for the word "sustainability" prior to its 1987 US establishment by the Environmental Protection Agency. There are three primary components that make up the Triple Bottom Line (TBL), or the concept of sustainability: social, environmental, and economic. Elkington (1998) has done a good job of identifying these strata. You can see all three of these goals in Figure 1, which depicts the 2005 World Summit on "Social Development".



Figure 1. Goals of sustainability

# Development of Music Streaming Application Using the React Framework and Firebase

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## Abstract

The ubiquity of music web-based features has filled dramatically lately. With the appearance of new advancements and the simple entry to music through cell phones, it has become progressively significant for engineers to make solid and easy to use music streaming applications. In this exploration paper, we will examine the improvement of a music streaming application involving the Respond system and Firebase as the backend. We will investigate the different highlights and parts of the application, including verification, information base administration, and music playback. In this paper, we investigate the advantages and difficulties of utilizing Respond and Firebase to foster a music site. We lead a relative investigation of different instruments, libraries, and structures accessible for Respond and Firebase, featuring their assets and shortcomings. We likewise examine the specialized parts of carrying out a music site, including client verification, information base administration, and ongoing updates. Through this investigation, we expect to give a far reaching manual for engineers who need to fabricate a music site utilizing Respond and Firebase.

**Key Words: React, Firebase, UI, Music Website**

## 1. Introduction

Experiments can reinforce students' ability to understand concept, knowledge, which combine theory from books and experimental practice together, especially in engineering education [1]. In recent years, the music industry has experienced a significant shift towards digital streaming services. Consumers are now more likely to stream music online rather than purchase physical copies. This shift has led to the development of numerous music streaming applications, each with its own set of features and functionalities. However, creating a reliable and user-friendly music streaming application requires a comprehensive understanding of web development frameworks and backend technologies.

React is a popular JavaScript library that is widely used for building user interfaces. It is known for its ability to create interactive and dynamic web applications. Firebase, on the other hand, is a Backend-as-a-Service (BaaS) platform that provides developers with tools for building and managing web applications. It offers a range of features, including authentication, database management, and cloud storage.

In this research paper, we will explore the development of a music streaming application using React and Firebase. We will discuss the various features and components of the application and how they were implemented.

React Native is an framework that enables web developers to create robust mobile applications

using their existing JavaScript knowledge. It offers faster mobile development, and more efficient code sharing across iOS, Android, and the Web, without.

The music industry has experienced a significant shift towards digital platforms, with the rise of music streaming services such as Spotify, Apple Music, and Tidal. These platforms have changed the way people consume and discover music. As a result, many music enthusiasts have started creating their own music websites to share their favorite music with others. Developing a music website requires a lot of technical expertise, including database management, user authentication, and real-time updates. React and Firebase are two popular tools that can be used to build a music website. React is a JavaScript library used for building user interfaces, while Firebase is a cloud-based platform for developing and hosting web applications. In this paper, we explore the benefits and challenges of using React and Firebase to build a music website.

The Firebase Realtime Database collaborative applications by allowing secure access to the database directly from client-side code. Data is persisted locally, and even while offline, realtime events continue to fire, giving the end user a responsive experience.

## E-Commerce and Course Website

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### ABSTRACT:-

E-commerce is a boom in the modern business. E-commerce means electronic commerce. E-commerce (Electronic commerce) involves buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, predominantly the Internet. E-commerce (Electronic commerce) is a paradigm shift influencing both marketers and the customers. Rather e-commerce is more than just another way to boost the existing business practices. It is leading a complete change in traditional way of doing business. This significant change in business model is witnessing a tremendous growth around the globe and India is not an exception. E-commerce and online education through the lens of a course website. With the growing demand for online education and the increasing popularity of e-commerce, course websites have emerged as a powerful tool for educators to monetize their content and provide learners with a seamless learning experience. In recent years, e-commerce has transformed the way we shop, with the convenience of online shopping becoming increasingly popular. At the same time, online education has been gaining traction, with learners looking for flexible and accessible learning options. Course websites bring together these two trends by providing a platform for educators to sell their courses online. The potential benefits of e-commerce on course websites are significant. By offering courses for purchase, educators can generate a sustainable income stream and reach a wider audience. Learners, on the other hand, benefit from the ability to access high-quality educational content from the comfort of their own homes, at their own pace.

This research paper is designed to study the main methodology of an E-Commerce website via creating our own E-commerce platform (Store With More.). The main technologies which are being used in this project are HTML5 programming Language. the database is managed through MySql.

**Keywords:-Html5, Css3, Mysql, JavaScript, Visual Studio Code, Internet, Self-Services etc.**

### Introduction:-

The rise of e-commerce and online education in recent years has revolutionized the way we approach commerce and education. With the growth of e-commerce, online shopping has become increasingly popular, providing convenience and accessibility to consumers worldwide. Similarly, online education has become a popular option for learners, providing flexibility and accessibility that traditional education may not offer.

The intersection of e-commerce and online education is evident in the emergence of course websites. Course websites provide a platform for educators to monetize their courses and for learners to access educational content online. By integrating e-commerce strategies, course websites offer educators the opportunity to generate sustainable income streams, while learners benefit from the ability to access high-quality educational content at their own pace and convenience.

In this paper, we explore the intersection of e-commerce and course websites, examining the various features and strategies that can be implemented to facilitate e-commerce transactions. We discuss the importance of user experience, design, and marketing in maximizing the potential of e-commerce on course websites. We also examine the challenges of implementing e-commerce on course websites, including ensuring transaction security and designing an intuitive user interface. Through a case study analysis of successful course websites, we highlight the benefits and limitations of e-commerce on course websites.

Overall, we argue that e-commerce and course websites have the potential to revolutionize the way we approach education and commerce in the digital age. As online education and e-commerce continue to grow, course websites are poised to become a critical component of the digital economy, providing a powerful platform for educators and learners to connect. Furthermore, with the COVID-19 pandemic accelerating the shift to remote learning and online commerce, the importance of e-commerce on course websites has only increased. As



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## A Study of The Impact of Ai on The Job Market More Opportunities & More Threats

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### Abstract

The research paper "A Study of the Impact of Artificial Intelligence on the Job Market" aims to analyze the effects of artificial intelligence (AI) on the job market. The study examines the various ways in which AI is being used in different industries and the implications of this for the job market. The paper looks at the impact of AI on different types of jobs and the potential for job displacement due to automation. Additionally, the study investigates the potential for the creation of new job opportunities as a result of AI. Finally, the paper explores strategies for individuals and organizations to adapt to the changing job market and the role of education and training in preparing for the future of work in the age of AI.

**Keywords:** Employment, Artificial intelligence, Productivity, AI adoption, Dependence on technology

### INTRODUCTION

Artificial Intelligence (AI) is rapidly transforming industries and revolutionizing the way we live and work. From self-driving cars to intelligent chatbots, AI is changing the way of businesses operate and creating new opportunities for innovation. However, the rise of AI has also raised concerns about its impact on the job market. As AI becomes more prevalent, there is a growing fear that it will lead to job displacement and unemployment.

This research paper aims to examine the impact of AI on the job market. The study analyzes the various ways in which AI is being used in different industries and the implications of this for the job market. The paper looks at the potential for job displacement due to automation and the impact on different types of jobs. Additionally, the study investigates the potential for the creation of new job opportunities as a result of AI.

It also explores strategies for individuals and organizations to adapt to the changing job market. This includes the role of education and training in preparing for the future of work in the age of AI. By understanding the impact of AI on the job market and developing strategies for adaptation, individuals and organizations can better prepare for the future and thrive in a rapidly changing world.

In summary, this research paper provides a comprehensive analysis of the impact of AI on the job market. The paper examines the potential benefits and drawbacks of AI for the job market and provides strategies for individuals and organizations to adapt to the changing landscape. Ultimately, the study aims to provide insights and recommendations for navigating the future of work in the age of AI.

  
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# Load Balancing Optimization Using Adaptive Algorithm with Round Robin Technique In Cloud Computing

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## Abstract

Developments in the field of computer networks have been carried out by several groups. However, there are still a lot of wrong problems one is the server load. For this reason, a system will be implemented Load Balancing with the aim of overcoming the server load which is not in accordance with its capacity and to optimize server load before and after the implementation of the Round robin Algorithm Load Balancing system on the cloud servers. The method used is the comparative method, namely researches that compares and analyze two or more symptoms, compare least connection algorithm as the previous algorithm with Round robin algorithm. Load Balancing Testing with both algorithms using a software called Httpperf. Httpperf displays the value according to parameters. The parameters used are Throughput, Response Time, Error and CPU Utilization. The test results show that load balancing with the algorithm round robin is more effective to handle server load than algorithm. The previous one was Least Connection. It is proven that in each respondent's assessment of the load balancing system. Test rating throughput obtained a percentage of 81.11% with good criteria, testing response time obtained a percentage of 81.78% with good criteria, testing error obtained a percentage of 84.67% with very good criteria, and cpu utilization testing obtained a percentage of 82% with good criteria.

**Keywords:** Cloud Computing, Computer Networking, Server, Load Balancing, Linux Virtual Server, Direct Routing, Round robin, Httpperf.

## 1. INTRODUCTION

The existence of communication network technology allows two entities to be connected to each other. This allows computers to be associated to every one further via a communication group. With the increasing alacrity of delivery that current communication technologies can make, this has allowed computers to share resources, such as CPU, memory and storage media, to provide applications that are superior to a single system [1]. This is also driven by the problems to be solved which have become more complex and on a larger scale to be worked on by a single computer. One of the applications that take advantage of the advances in communication network technology is grid computing and cluster computing. Network computing is a structure of computing that occupies numerous machines that are typically heterogeneous and spread over different geographic locations. Meanwhile, cluster computing is a computation that involves many computers located in one place. Cluster computing is one of the constituent components of grid computing [2-4]. In cluster computing, the

## Image Quality Improvement in Kidney Stone Detection on Computed Tomography Images

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### Abstract

The increasing demand for healthcare in recent years has led to a surge in the use of computer-assisted medical diagnostics. The noninvasive, dependable, and inexpensive Computed Tomography (CT) image-based diagnosis has become ubiquitous as a result of developments in imaging technology. Feature extraction, analysis, and pattern recognition algorithms are used to find the issue in images of the abnormality, which might be a tumour, cyst, stone, etc. A promising imaging tool that might improve kidney stone screening and prognosis is kidney-urinary-belly computed tomography, or KUB CT. This research aims to examine the effectiveness of using contrast-limited adaptive histogram equalisation (CLAHE) for computer-assisted medical diagnosis using KUB CT kidney images. The effectiveness of computer-aided medical diagnosis—an fusion of CS, IM, PR, and AI approaches—depends on a number of factors, including feature selection, computational efficiency, reference database size, and segmentation. When it comes to medical imaging, a technology known as computer-aided diagnostic (CAD) is invaluable. Radiologists have a lot of data to rapidly and accurately analyse from diagnostic imaging techniques including ultrasounds, CT scans, MRI scans, and mammograms. Recent advances in IT and medical imaging have increased the need for methods that can objectively produce speckle noise using Non-Sub sampled CT and then use this noise for diagnosis.

**Keywords:** renal calculi, kidney stones, computed tomography, image processing

### I. Introduction

Kidney stones are becoming more common all over the world. In form, kidneys resemble beans. Underneath the belly button and rib cage, as well as on each side of the spine, you could find them. About the size of a standard human hand is the kidney. Kidney function mostly involves blood filtration. By removing waste, they maintain the proper acidity or alkalinity of physiological fluids. They keep their electrolyte levels in check as well. The kidneys start filtering waste and controlling mineral, salt, and water levels in the body as soon as blood reaches them. After purification, the kidneys return the blood to the body, while the ureters carry the waste products out of the body via the pelvis. These microscopic filters account for almost 10% of the overall volume of each kidney stone. The cells that filter blood are called nephrons. When blood flow to the kidneys is abruptly interrupted, renal failure may develop. Proper drainage of urine is impaired due to congenital kidney abnormalities such as kidney stones. Researchers looked at kidney stones of various types, including calculi, struvite, and stage horn.

Scientists have accomplished remarkable strides in the identification of nephrolithiasis by creating a plethora of algorithms that can precisely localise the kidney stone. Results from using a neural network to the classification of urinary calculi are encouraging. There has been a global uptick in cases of kidney stone-causing concretion illness, yet the majority of affected individuals are blissfully ignorant of their condition since it takes so long for the damage it does to become apparent. The kidneys, which normally sit on each side of the spine, might take on a bean-like appearance. Maintaining normal electrolyte levels in the blood is the kidney's principal function. When abnormalities in the kidney's drainage system, such as cysts, prevent urine from draining adequately, kidney stones may develop. Researchers looked at kidney stones made of different materials, such as struvite, stag horn, and renal calculi. The minerals in urine may cause a kidney ailment called concretion, which is characterised by the formation of a solid crystal. Doctors may identify calculus in the urine by studying CT images, and then they can remove the stone surgically, ensuring that it is broken into small enough pieces to pass through the urinary system undamaged. When kidney stones are three millimetres or larger in diameter, they might cause a ureteral obstruction. Starting in the lower back, the pain travels down the leg and into the groin.





## A Comprehensive and Investigative Study of Reference Architecture of Industrial Internet of Things and Industry 4.0

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### Abstract

Due to an excessive interest and attention toward the digital transformation of the Modern Manufacturing Assets, a significant amount of research and study is required to build a sustainable system architecture that integrate the Industry 4.0 assets with the state of art Internet of Things concept, and to provide an easily implementable system. The system in need should not only work efficiently but also comply with Standard Cyber Securities practices. Multiple research papers and business review literatures are present to support various system architectures but a reasonable comprehensive and investigative reference is required to bridge a gap and provide a reference for future studies. Main objective of present work is to review reference architectures for Industrial Internet of Things and analyze them for suitability to support various Industry 4.0 architectures. For the same we put significant effort to review and research these existing architectures and come up with thoroughly developed analytical information. We also address their uses and technologies to support their implementation process. As a result, we observed that current technologies and their system architectures need more advancement to make it easy to implement, low cost solution.

**Keywords:** Industrial Internet of Things; Cyber Physical Systems; Industry 4.0; Reference architecture; Software architecture; Interoperability

### INTRODUCTION

The Internet of Things connects individual devices to the network as well as with each other. The main aim of IoT is to monitor, measure, trace, access and control the smart physical objects and things, anytime and anywhere using a dedicated and secure network. All the Internet of Things systems usually follow a Cloud based approach. These systems get the benefits of the strong computational capabilities of the Cloud. Recent development in the IoT can be viewed as how major technology companies have started shifting their business towards IoT. This way IoT has received a boost and subsequent advancement in technology as well as on reference architectures.

IIoT can be described as the interconnection of the machines, material handling systems and various measurement devices through the Internet. At the center of the IIoT is the network that uses various industrial communication modes such radio frequency, cellular data connection, Ethernet etc. The IIoT refers to integrating all areas of the industry with the network and with each other to share data and necessary information for achieving operational excellence. It can also be said that IIoT lead the world to the path of Industry 4.0 or Fourth Industrial Revolution starting from year

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## VHDL Design and Implementation for Optimum Delay & Area for Multiplier & Accumulator Unit By 32-Bit Sequential Multiplier

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**Abstract** High performance systems such as microprocessors, digital signal processors, filters, ALU etc. which is need of hour now days requires a lot of components. One of main component of these highperformance systems is multiplier. Most of the DSP computations involve the use of multiply-accumulate operations, and therefore the design of fast and efficient multipliers is imperative. However, area and speed are usually conflicting constraints so that improving speed results mostly in larger areas. This thesis investigates analysis of different multiplier for speed, area and delay usage. We try to present an efficient multiplier is produce fast, accurate and require minimum area. In this paper we will first study different types of multipliers: Then we compared the working of different multipliers by comparing the memory usage, speed and area by each of them. The result of this thesis helps us to choose a better option to choose a better multiplier out of different multipliers in fabricating different systems.

**Keywords:** MAC, sequential multiplier, VHDL, Dataflow, waveform analyzer .

### I. INTRODUCTION

The addition and multiplication of two binary numbers is the fundamental and most often used arithmetic operation in microprocessors, digital signal processors, and data-processing application-specific integrated circuits. Therefore, binary adders and multipliers are crucial building blocks in VLSI circuits. High performance systems such as microprocessors, digital signal processors, filters, ALU etc. which is need of hour now days requires a lot of components. One of main component of these high performance systems is multiplier. Most of the

DSP computations involve the use of multiply-accumulate operations, and therefore the design of fast and efficient multipliers is imperative. However, area and speed are usually conflicting constraints so that improving speed results mostly in larger areas. This paper investigates analysis of different multiplier for speed, area and propagation delay usage. We try to present an efficient multiplier is produce fast, accurate and require minimum area. In this thesis we will first study three different types of multipliers. Then we compared the working of different multipliers by comparing the different parameter by each of them. The result of this paper helps us to choose a better option to choose a better multiplier out of multipliers in fabricating different systems. . In this project, we have used VHDL as a HDL and XILLINX ISE for describing and verifying a hardware design based on Booth's and some other efficient algorithms. Timing and correctness properties were verified. Instead of writing Test- Benches & Test-Cases we used Wave-Form Analyzer which can give a better understanding of **Signals & variables** and also proved a good choice for simulation of design.

### II. DIFFERNT MULTIPLER

#### A. Introduction of Multipliers

The main objective of design and implementation of a 32 Bit Sequential Multiplier. The programming objectives of 32 Bit Sequential Multiplier fall into following categories:

- Accuracy: The multiplier produces the correct result.
- Speed: The multiplier produces high speed.
- Area: The multiplier occupies less number of slices and LUTs.

- Power: The multiplier consumes less

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## RESEARCH PAPER ON SPAM SMS DETECTOR USING MACHINE LEARNING

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**Abstract :-** Spam SMS are unmasked dispatches to druggies, which are disturbing and occasionally dangerous. There are a lot of check papers available on dispatch spam discovery ways. But, SMS spam discovery is comparatively a new area and methodical literature review on this area is inadequate. In this paper, we perform a methodical literature review on SMS spam discovery ways. A Communication is an information changed for particular or business purposes. These dispatches are generally targeted by spammers, performing in fines in fiscal or financial. Spam dispatches have grown significantly in different fields. colorful machine literacy grounded ways have been used in the history for the discovery of spam. A veritably many review workshop are available on spam discovery ways in the field of SMS, Dispatch, Twitter and Online reviews. still, these studies have limitations of study of limited ways from machine

### Introduction

The most common and popular form of communication is the short message service (SMS). In many regions of the world, the term "SMS" is used to refer to both user activity and all forms of short text messaging. It is being used as a platform for online offerings, banking updates, agricultural information, and product advertising and promotion. SMS marketing, often known as direct marketing, uses SMS technology. There are times when SMS marketing causes users to be disturbed. Spam SMS is the term used to describe these SMSs. Spam is a message or messages that are sent or posted as part of a bigger collection of messages that all have nearly identical content and are unsolicited by the users.

literacy fields only. Also, an in- depth evaluation of performance for each of the suggested ways are missing. In this paper, a detailed review of spam communication discovery ways in five disciplines- SMS, Dispatch, Twitter, Instagram and Online Reviews is done. Grounded on the reviews of state- of- the- art in the five disciplines, a generalized model for spam communication discovery is perceived and presented. also, this paper provides a thorough review of the once probing the sphere and detailed analysis is presented. The paper concluded with the unborn trends which can be used for communication spam discovery in near future.

**Keywords:** Review spam; Opinion mining; Web mining; Machine learning; Big data; Classification.

SMS spam is sent with the intention of disseminating inappropriate pornographic content, internet offers, political concerns, and advertisements for various products. Because of this, spam SMS flooding has escalated into a major issue across the globe. Due to the growing prevalence of SMS communication, SMS spamming became more prevalent than other spamming techniques like email and twitter. Whilst SMS opening rates are greater than 90% and occur within 15 minutes of delivery, email opening rates are lower. Thus, a proper SMS spam detection method is absolutely necessary. There have been numerous studies on spam detection methods for email, Twitter, the web, and social media. Nevertheless, relatively few studies on SMS spam detection have been done. Due to SMS's shorter length,

  
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## Investigations on the Practical Use of Biogas in CI Engines with Blends of Biodiesel and Diesel

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### Abstract

The use of crude biogas for the ongoing investigation of vaporous choices for diesel motors. Because of the way that vaporous fuel can't consume by pressure, biogas can't be utilized alone to control a diesel motor. It very well may be given to CI motors that are showing on double fuel to joining air and biogas in a framework. To make a homogeneous combination, the venturi gas blender gadget utilized in this study creates a diesel motor that consumes biogas, biodiesel, and diesel. On the presentation and outflow attributes of the double fuel motor rather than diesel, exploratory examination was directed. The outcomes showed that biogas presented at a stream pace of 1L/min worked preferred and created less outflows over biogas presented at other stream rates. However, when compared to diesel, the dual-fuel mode with a BD10 BG@1L/min biogas flow rate demonstrated an average decrease in BTE of 9.94% and an increase in BSFC of 8.82 percent. CO and HC emanations are up 5.18 and 3.01 percent, separately, in contrast with diesel, however NO<sub>x</sub> discharges are down 14.91 percent overall.

**Keywords:** Alternative Fuel, Biogas, Biodiesel, Diesel Engine, Dual-fuel, Venturi Gas Mixer

### 1. INTRODUCTION

The need for transportation is multiplied by the fact that India is one of the nations that is developing at the fastest rate and is expanding steadily. Fuel consumption is directly related to this demand. Because of an absence of petroleum derivative sources, India depends intensely on imported powers, which essentially affects the nation's economy. Biodiesel may now be removed at sensible expenses and amounts thanks to ongoing exploration and studies. The mix of fossil diesel and biodiesel offers a few benefits, including lower toxins, further developed motor execution, more noteworthy cetane evaluations, less wear on the motor, low fuel use, and decreased oil use. It goes without saying that using bio-diesel makes the engine work better. The Indian economy will be enormously influenced by this. Diesel powers essentially affect a country's modern area. The goal of this paper is to dispose of biodiesel with different energizes the rate in biodiesel mix of green growth biodiesel demonstrates postfix B20 mathematical. The level of algal biodiesel by volume in the biodiesel mix is demonstrated by the postfix B20 following the mathematical mark. To lay out a pattern for correlation, tests were likewise done using diesel and AOME as the fuel. For both the biodiesel and biogas double fuel method of activity as well as the diesel and biodiesel single fuel mode, tests were done at different loads and appraised RPM. The baseline diesel engine's performance and emission characteristics are compared. There have been concentrates on directed from one side of the planet to the other on the feasibility of utilizing different inexhaustible fluid and vaporous fills. The volumetric level of algal biodiesel in the biodiesel mix is shown by the addition B20 that follows the mathematical mark. To

## An Analytical Study of Active Solar Still Incorporated Cpc Collector

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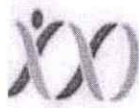
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**Abstract** -The study's primary goal is probably to analyse the energy matrices, exergoeconomic parameters, enviroeconomic parameters, productivity, and efficiency of these distinct solar distillation systems. By examining these components, the researchers can gauge the general performance and cost-effectiveness of each system. The creation of more efficient and affordable solar distillation equipment to produce drinking water can then be accomplished using this information. The existence of partially covered PVT flat collector plates (FPC) and compound parabolic concentrators (CPC) suggests that the researchers are investigating the integration of thermal and solar technologies into the distillation process. The calculation of exergoeconomic parameters, enviroeconomic parameters, productivity, and various efficiencies was done after this. Exergoeconomic parameters are typically used in mechanical, thermal, and other systems, according to numerous studies.

**Keywords:** energy, photovoltaic, exergy, enviroeconomic, exergoeconomic

### 1. Introduction

It is true that water makes up the majority of the human body—roughly 75% of the body's mass. Seawater has a salinity of between 35,000 and 45,000 ppm, while the majority of readily accessible water on Earth has a salinity of up to 10,000 ppm. However, the World Health Organisation (WHO) claims that drinking water with salinities up to 1,000 ppm poses no appreciable health concerns to people. The empirical relations for the inner coefficients of heat transfer from the natural flow with a heat exchanger in a solar distiller unit were developed by Lawrence and Tiwari [1]. Popiel and Wojtkowiak [2] investigated the base fluid's thermo-physical characteristics. Numerous relationships were examined by Pak and Cho [3] for various attributes. G. N. Tiwari [4] researched the basic construction of a solar still. Al<sub>2</sub>O<sub>3</sub> nanofluids' heat transfer coefficient was examined by Hwang et al. [5]. The heat transfer coefficients of the base fluid can also be enhanced, according to Barden [6]. Nanoparticles (1-100 nm) are easily suspended in base fluids (ethylene glycol, thermal oil, water, etc.) because of their superior thermo-physical properties. With the use of nanofluids, fluids with extraordinarily rapid heat transfer capabilities are being created. Customising the size and shape will also improve the properties of the base fluid. There aren't many advantages to solar distillers over other distillation technologies including filters, membranes, and batteries, and they require a relatively low initial expenditure. Nanofluids were numerically analysed by Ho et al. [8] for natural convection in a square enclosure: effects of viscosity and thermal conductivity uncertainty. Nanofluid was used in Otanicar and Golden's [9] analysis of the eco-economic impact of solar collectors, and they discovered that it neutralises 74 kg over the course of 15 years. Patel et al. [10] discovered that nanofluids had thermal conductivity. Entropy generation for nanofluids was theoretically investigated by Singh et al. [11]. Elzen et al. [12] examined carbon price, abatement costs, and emission reductions. This paper by Khanafer and Vafai [13] presented the thermophysical characteristics of nanofluids. For a solar heating device for nanofluids, Khullar and Tyagi [14] analysed and reported reduced emissions of 103 kg approximately/household/year. Based on the cost of flat plate collector (FPC) employing tin oxide, copper oxide, titanium oxide, and aluminium oxide) nanofluids, Faizel et al. [15] conducted an analysis. It is determined that the high density, low specific heat, and thermal conductivity of CuO nanofluid provide the best explanation for its performance. The integrated solar distiller unit of the evacuated tube's economic analysis has been reviewed by Liu et al. [16]. The only inclined solar distiller unit with vacuum was examined by Kabeel et al. [17] as a water-based nanofluid. Elango et al. [18] used several nanofluids to analyse the thermal energy, exergy, and productivity of a single slope solar distiller. Omara et al. [19] used nanofluids to analyse the effectiveness of a corrugated wick type and a straightforward solar distiller unit. Tiwari et al.'s [20] experimental analysis of the active solar distiller examined the exergoeconomic and environmental benefits of employing water-based nanofluid to meet daily demands for potable water. A \$6.29 year estimate has been



# Micromechanical model of the stochastic finite element buckling reaction of a laminated composite plate with random system parameters in a temperature environment

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## Abstract

Using a micromechanical approach, this paper demonstrates how random system properties affect the buckling response of laminated composite plates in thermal environments. The framework properties, for example, thermo-material properties, fiber volume parts of separate fiber and lattice constituents and establishment boundaries are demonstrated as free arbitrary factors. The temperature field is thought to consist of uniform temperature distributions throughout the thickness and surface of the plate. The material properties of the composite are impacted by the variety of temperatures and in view of micromechanical model. The essential definition depends on higher request shear deformity plate hypothesis and general von-Karman sorts of nonlinearity. An immediate iterative based C0 nonlinear limited component strategy related mean focused first request irritation method is out lined and tackled the stochastic direct summed up eigen esteem issue. The created stochastic method is conveniently utilized for thermally prompted issue in light of micromechanical approach with a sensible exactness. The mean and variance of plate frequency are examined through parametric studies to determine the effects of volume fractions, amplitude ratios, temperature increments, temperature distributions, geometric parameters, lay-ups, boundary conditions, and foundation parameters. The present framed approach has been approved with those accessible outcomes in written works and autonomous Monte-Carlo reenactment.

**Keywords:** Thermal buckling; random material properties; stochastic finite element; perturbation technique

## INTRODUCTION

Laminated composite plates are increasingly used as critical structural members in aerospace and many other applications due to gaining wide popularity as light weight components, ability to tailor structural properties through appropriate lamination scheme for achieving high strength and stiffness to weight ratio and durability and corrosion resistant characteristics combined with low density, make it more attractive compared to conventional materials.

## BUCKLING EQUATIONS FOR LAMINATED PLATES

A plate buckles when the in-plane load gets so large that the originally flat equilibrium state is no longer stable and the plate deflects into a non flat configuration. The load at which the departure from flat state takes place is called the buckling load. Analysis of plates buckling under in-plane loading involves solution of eigenvalue problem as opposed to the boundary value problem of equilibrium analysis. The distinctions between boundary value problems and eigenvalue problems are too involved to treat here. Instead, the buckling differential equations governing the buckling behavior from a membrane prebuckled state (prebuckling deformations are ignored) are,

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Micromechanical model of the stochastic finite element buckling reaction of a laminated composite plate with random system parameters in a temperature environment

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# Buckling Response of Laminated Composite Plate with Random System Properties in Thermal Environment

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## Abstract

This work uses a micromechanical technique to show how random system features affect the buckling response of laminated composite plates in temperature conditions. Independent random variables are used to simulate the system attributes, including foundation parameters, fiber volume fractions of the corresponding fiber and matrix ingredients, and thermo-material properties. The temperature field is thought to consist of consistent temperature distributions over the thickness and surface of the plate. The composite's material properties are influenced by temperature variations and are determined using a micromechanical model. The basic formulation is based on higher order shear deformation plate theory and general von-Karman types of nonlinearity. A direct iterative based C0 nonlinear finite element method in conjunction with generalized Eigen value problem. The developed stochastic procedure is usefully used for thermally induced problem based on micromechanical approach with a reasonable accuracy. Parametric studies are carried out to see the effect of volume fractions, amplitude ratios, temperature increments, temperature distributions geometric parameters, lay-ups, boundary conditions and foundation parameters on the mean and variance of plate frequency. The present outlined approach has been validated with those available results in literatures and independent Monte-Carlo simulation.

**Keywords:** Thermal Buckling, Random Material Properties, Stochastic Finite Element, Perturbation Technique

## INTRODUCTION

Laminated composite plates are increasingly used as critical structural members in aerospace and many other applications due to gaining wide popularity as light weight components, ability to tailor structural properties through appropriate lamination scheme for achieving high strength and stiffness to weight ratio and durability and corrosion resistant characteristics combined with low density, make it more attractive compared to conventional materials.

## BUCKLING EQUATIONS FOR LAMINATED PLATES

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$$\delta N_{x,x} + \delta N_{x,y,y} = 0 \quad (1)$$

$$\delta N_{xy,x} + \delta N_{y,y} = 0 \quad (2)$$



## Identification Of Glaucoma Through Fundus Images Using A deep belief network

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### Abstract

Glaucoma is a disease of the retina caused by highintraocular pressure. The intraocular pressure in people withglaucoma can reach 60-70mmHg. This disease is characterizedby an increasing cup to disc ratio size. Glaucoma has threelevels, namely mild with a cup to disc ratio value of 0.3-0.5, moderate with a cup to disc ratio value of 0.5-0.7 and severewith acuptodisc ratio value value above 0.7. For retinalanalysis and calculating the cup to disc ratio value taken from a fundus camera, it must be done by an expert ophthalmologist, but it takes a long time. Therefore, feature detection and automatic cup to disc ratio value calculation are expected to assist doctors in analyzing glaucoma. The data used were132 retinal fundus images consistingof66 mildg laucoma images,26moderateglaucoma images and 40 severe glaucoma images taken from the RIM-ONE dataset(<http://medimrg.webs.ull.es>).Pre-processing techniques like cropping, resizing, brightness, Median Filter are used for noise removal. Subsequently, feature extraction with the help of GLCM. Consequently, the method used to classify the degree of glaucoma is the Deep Belief Network. The test simulationresults obtained accuracy value of 99% with 99% of precisionand100%of recall.

**Keywords:** Fundus, Glaucoma, Neural Network, Deep BeliefNetwork,Grey Level ConfusionMatrix.

### INTRODUCTION

Glaucoma is a major neurological disease of vision called theoptic nerve. The optic nerve receives nerve impulses that aregenerated by light from the retina and sends them to the brain.Glaucoma is characterized by a special pattern of progressive damage to the optic nerve that generally begins with vague peripheral vision loss. If glaucoma is not diagnosed and treated,glaucomacan progresstocentralvisionlossandblindness.Glaucoma is the second largest cause of blindness in the world(Bulletin of the World Health Organization) and an estimated 80millionpeoplewilldevelop glaucoma by2021 [1]. Glaucoma is usually, but not always, associated with high pressure in the eye (intraocular pressure). In general, this higheye pressure causes damage to the eye (optic) nerves. In some cases, glaucoma can occurat normal eye pressure which is believed to be caused by poor regulation of blood flow to theopticnerve [2]. Glaucoma has been known for a long time, but not many peopleknow about the dangers of this disease. If it is too late or nottreated properly,glaucoma can cause permanent blindness insufferers. Lack of awareness of the dangers of glaucoma is due to the symptoms of this disease that the glaucoma sufferer cannot feel directly[3]. Research to detect glaucoma has been carried out by several previous researchers, including research conducted by [4] who developed aglaucoma disease identification



## Study Using Judgmental Sampling for Select Samples from Online Shopping Users of Ghaziabad City

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### ABSTRACT

Looking at the factors impacting shopper web based shopping conduct is the objective. Plan, strategy, and approach: An expressive sort of study utilizing critical inspecting to pick tests from Ghaziabad city's web customers. The data was accumulated utilizing a poll. The nonparametric test has been utilized for speculation testing after the variable investigation, which is performed to distinguish the elements.

Findings: The study's findings suggest that a variety of factors, such as demographics, social factors, consumer online shopping experience, website design, social media, situational factors, enabling conditions, product characteristics, sales promotional scheme, payment option, delivery of goods, and after-sale services, play a significant role in influencing consumers' online shopping behavior. Research limitations/implications: The study's findings cannot be generalized to all online shopping users due to the small sample size and geographic location from which the data are Future examinations may likewise apply a few additional measurable methods to build the decisiveness of the responses revealed in this review.

Down to earth suggestions - The outcomes ought to bear some significance with the web-based retailers in concluding their promoting program.

Value and originality: The paper is based on original work, and the questionnaire was found to be reliable after KMO values were checked, which shows that a large sample size is possible. It will assist the academicians and researchers in their exploration with working in the construction of a writing on web based shopping. Additionally, it will provide online retailers with guidelines for developing their marketing strategy.

### Introduction

In India, online purchasing has been expanding quickly. The number of internet shoppers has increased, as has the size of their wallets. By 2024, it is estimated that Indian consumers' annual spending power would have increased to more than \$1.5 trillion, propelled by the country's growing middle class, whose size is projected to reach 580 million by then. According to a Bank of America Merrill Lynch (BofA ML) analysis from October 2021, internet services are the foundation of online commerce in India, where there will be 95 million subscribers by the end of 2023. On websites like Flipkart, online buyers may find over 35 million products across more than 75 categories, including books, everyday items, consumer electronics, and lifestyle. Amazon has also better its variety of products from 18 million to 35 million and Snapdeals has been contribution over 15 million unique products, SBI Research. There are more than 160 online shopping websites available in India providing goods and services straight to the consumers. These e-retailers provide an electronic products. The consumer select the products from their catalogue and purchase the product by compare it with other products. It has many advantages like global reach, range of products with required information, According to Taylor Nelson Sofres Interactive's "Global e-Commerce Report," the worldwide raise in e-commerce activity is most obvious for certain product categories, such as books, music videos, electronic goods, sports equipment, and toys, and for services such as consumer banking and finance, and health information. It save time during the purchasing of goods, because it eliminate the travel time required to go to the store. Consumer can purchase products 24X7, it also provide products at minimum achievable price, and consumer gets offers and discounts on purchasing products online. The consumers have put their mind to do online shopping due to the discounts, gift, and quality factor in e-store. Online shopping also has some disadvantages like while we do not purchase goods following searching it online then it results in wasting of time, it cannot be done without internet connection and one electronic gadgets (computer and mobile), it necessary extra money for arranging these two items.

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