



# RAMACHANDRA COLLEGE OF ENGINEERING

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## Number of research papers per teachers in the Journals notified on UGC website during 2020-21

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2	Hardy Leaf Concrete- Partial Replacement Of Cement With Banana Leaf Ash	T.Sai Krishna	IJIRSET	2021	e-ISSN: 2319-8753, p-ISSN: 2347-6710
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# An Experimental Study on Partial Replacement of Cement with Marble Dust and Coarse Aggregate with PET Material (Bottle Caps)

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**ABSTRACT:** Concrete is major building material Which is been used in Construction industry throughout the world. It is an extremely versatile material and can be used for all all types of concrete structures. Concrete is composite construction material composed mainly of cement, water and aggregates. Advancement in technology enhances human comforts and at the same time it causes damages to environment.

Waste plastic bottles are major cause of solid waste disposal and also disposal of metal caps of soft bottles are headache to environmental engineers and involves either recycling or reusing. There we are going to add metal caps and PET bottles caps in concrete to increase the strength. Marble dust is an industrial byproduct obtained during sawing, shaping and polishing of marble and causes a serious problem to the environment. Now we are going to add 5 % of bottle caps and 5%, 10%, 15%, 20 % of marble dust in coarse aggregates and cement respectively. Research indicates that the effect of mixing marble dust on the properties of cement such as consistency, initial and final setting times remain within the acceptable ranges of different standards. This study presents the feasibility of the production of concrete with marble dust as partial replacement of cement. Final result indicates the modification of properties of concrete by replacement of bottle caps with coarse aggregates and marble powder with cement without decreasing strength and flexural strength of concrete. By using bottle caps and marble powder it increases compressive strength and workability of the concrete cubes which are being tested for 7, 14 days and 28 days strength

**KEYWORDS:** Marble powder, bottle caps, compressive strength, engineering properties of cement

## I. INTRODUCTION

Advancement of concrete technology can reduce the consumption of natural resources and energy sources and will lessen the burden of pollutants on environment. Presently large amount of marble dust are generated in natural stone processing plants which cause an important impact on environment and humans. The feasibility of using the marble sludge dust as an admixtures in concrete production as partial replacement of cement will lead to further increase in proper utilisation and disposal of sludge keeping the environment away from the hazards. In India, effects of varying marble dust contents in concrete will lead to variation in the physical and engineering properties of fresh and hardened concrete.

The cement materials are serve as a binder for the aggregates. the coarse aggregate gets hardened through the process called hydration. and fine aggregate are used in concrete. water is mixed in concrete so that the concrete gets its shape and then since it is found deficit in aggressive environmental conditions, time of construction, energy absorption capacity, repair and retro fitting jobs etc. Hence some alternative needs to be find which can replace either fully or partially any of the concrete composite without affecting the properties of concrete which give better strength to concrete. the use of such materials not only resulting good strength and improved properties in concrete but also helps in maintaining good environmental conditions by effecting utilisation of these products which will other wise remains a waste material PET (polyethylene terephthalate) can be used as a partial replacement of coarse aggregates.

However, recently the ordinary Portland cement has been no longer manufactured in Indonesia except upon special request. The cements that are still produced are Portland pozzolana cement and Portland composite cement, which certainly has different characteristics compare to that of ordinary Portland cement. In this study, the Portland composite

# Hardy Leaf Concrete- Partial Replacement of Cement with Banana Leaf Ash

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**ABSTRACT:** This study was under taken to know the concrete properties using Banana Leaves ash. Concrete is one of the materials that is widely used in construction all around the world. This material is widely used because it has several benefits such as durable, energy-efficient, low maintenance, affordability, fire-resistance, excellent thermal mass and also versatility. World is as of now concentrating on alternate material sources that are environment agreeable and biodegradable in nature. The Banana Leaves Ash is an agriculture waste that has potential to replace one of construction material which is cement. Banana Leaves Ash contains a pozzolanic reaction that usually occurs in Portland cement. Instead of growing banana tree only for fruit consumption and discard the trunks, the use of banana leaves after the fruits are harvested should be explored. This project is conducted to determine the strength of concrete to produce good cementitious material by using Banana Leaves Ash. The source of BLA are found in banana plant and they are readily available, environmental friendly and cheap. In addition, BLA has an excellent potential to improve the performance of concrete. The banana trunks ash was produced from the process of burning the dried banana trunk and collecting the residue of it. The BLA will be used in cement to replace about 0%,5%,10%,15%,20% & 25% respectively. Mechanical properties such as compressive, split tensile and flexural strength were determined by casting cubes, cylinders and beam respectively.

**KEYWORDS:**Banana Leaf Ash, Compressive, Flexural strength & Split tensile strength

## I. INTRODUCTION

The Concrete is most widely used as a construction material due to its good compressive strength & durability. It is material which is used more than any other man-made material on the earth for construction work. The main factor which determines the strength of concrete is the amount of cement used and water/cement ratio in the mix. Depending upon nature of work the cement, fine aggregate, coarse aggregate & water are mixed in specific proportions to produce concrete. Plain concrete needs suitable atmosphere by providing moisture for a minimum period of 28 days for good hydration & to attend desired strength. We know that for hydration process curing is must for the concrete. Any lack of curing will badly affect the strength & durability of concrete. The use of alternative material in the construction is increasing day by day. The project deals with the comparative study of properties of concrete by using Banana Leaves Ash as a cementitious material in the concrete mix. The ash produced from various types of agricultural waste can be used effectively as a partial replacement of cement. Some researchers evaluated the presence of pozzolanic activity in the deriving ash of Banana Leaves. The overall production of banana in India is approximately 16.91 Million Tonnes from 490.70 Thousand Hectares, with national average of 33.5 T/Ha. Maharashtra ranks first in production with 60 T/Ha. After cutting of banana tree the remaining part of tree i.e. stem and leaves are directly dumped or burned after drying it. That can be utilised as an alternative material for partial replacement of cement. Banana tree contains approximately 80% liquid matter and after drying its weight reduces up to 80% approximately. After burning dry leaves it gives 20% ash by its dry weight. Means if we dry 500 kg of fresh leaves and stems of banana tree, we will get 100 kg dry leaves and 20 kg of leaves ash. Banana Leaves are mainly obtained from various Banana Production farms (Maximum production is in Jalgaon District). These leaves are sun dried for a period of 30 days and open air burning is carried out. The residue remained after the burning is collected and known as Banana Leaves Ash. If required, this ash is made fine by using ball mill for 30 minutes. The final product obtain is finer enough to mix with the cement. The

# The Study and Behaviour of Conventional Mix Concrete with Replacement of Robo Sand and Steel Fibers in Coarse Aggregates

Susmitha N<sup>1</sup>, K Hanok<sup>2</sup>, G Naga Navya<sup>3</sup>, G Sadaf<sup>4</sup>, I Dhana Sekhar<sup>5</sup>, S Kamran Ashraf<sup>6</sup>,  
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**ABSTRACT:** Now a days the cost of building materials is increased day by day. Ingredients of concrete are cement, fine aggregate, coarse aggregate and water. This project deals with the study of effect of partial replacement of Robo sand in Fine aggregates and addition of steel fibers in coarse aggregates. By using Robo sand the depth of the water table will be increased and its helpful environment. Robo sand is industrial by product using this material to increase the strength and durability. The use of steel fibers reinforced concrete (SFRC), steel fibers to improve the mechanical property of concrete. To increase the toughness and durability. Steel fibers are generally utilized in concrete to manage the plastic shrinkage, cracking and drying shrink cracking. The length of steel fibers is 30mm and diameter 0.5mm. By addition of steel fibers in coarse aggregates to increase the tensile strength.. Here we use the percentage of steel fibers is 2%, 5%. Add to the coarse aggregates. The natural sand is replaced with robo sand with a percentage of 50%, 100% present generation the cost of natural sand is increased day by day. So, there is need to search alternative material to fine aggregate.

The cubes are casted with the dimension of 150\*150\*150mm. grade of concrete is M15. the cubes will be tested 7days, 14days, 28days the testing is done to the cubes of the strength characteristics like compressive strength is evaluated.

The cylindrical cubes are casted with the dimension of 150mm diameter and 300mm length of the cylinder. Grade of concrete is M15. The cylinders will be tested 7 days, 14 days and 28 days the testing is done to the cylinder of the strength characteristics like Tensile strength is evaluated.

**KEYWORDS:** SFRC, steel fibers, Robo sand, compressive strength, tensile strengthtest.

## I. INTRODUCTION

Concrete is the most widely used man-made construction material all around the globe because of its superior specialty of being caste in any desirable shape. It is material synonymous with strength and longevity has emerged as the dominant construction material for the infrastructure needs of the present situation. Around five billion tons of concrete have been used around the world wide every year, in terms of cost it is equivalent to 25 to 30% of the nation budget. It is also inevitable material in human life due to its enormous usage in modern way of construction and now the per capita consumption is reached to more than 2kg.

Concrete has relatively high compressive strength but very low tensile strength. For this reason, it is usually reinforced with materials to makes strong in tension (often steel). Concrete can be damaged by many processes, such as the freezing of trapped water, permeability in concrete composition. To overcome the damage of concrete, proper quality of ingredients shall be used in the concrete composition.

ROBO sand is an ideal substitute of river sand. It is manufactured just the way nature has done for over a million years. ROBO sand is created by rock-hit-rock crushing technique is use state of the art plant and machinery with world class technology. robo sand is the environmental –friendly solution that serves as a perfect substitute for the fast depleting and excessively mined river sand, which is so essential and percolating and storing rain water in deep underground pockets and protects the ground water table.

# An Experimental Study on Usage of Effluent from Constructed Wetland in Concrete

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**ABSTRACT:** According to WHO in 2007 there are 2.6 billion people are suffering from problem called proper sanitation. In order to overcome this problem, we have to look over the sustainable waste water treatment system. In India, about 38,255 million liters of sewage produced daily, out of which only 22% of the sewage is being treated. Wetland construction is a solution for the treatment of sewage water through the natural process of growing a plant. In this experimental setup a wetland is constructed to investigate the performance of Typhalatifolia (Elephant ear plants), when planted in sewage water and investigated for a period of 28 days. The constructed wetland (CW) setup was filled with sewage water with a hydraulic retention period of 7 days. Within the stipulated period of 4 weeks, the change in the characteristics of the effluent was tested for every 7 days. During the treatment period, the plant Elephant ear plants has considerably reduced the COD content by 28% in the sewage. Hence, it is inferred from the project that the plant species Typha latifolia has the ability to reduce the saline nature of the water. It is also noted that the efficiency of the treatment of sewage water by the plant species increases with the increase in the time period in which the CW system is maintained properly. The treated effluent is used in concrete and 28 compressive strength of specimen tested and compared with the potable water specimen.

**KEYWORDS:** Constructed wetland, Typha latifolia, sewage water, chemical Oxygen Demand (COD).

## I. INTRODUCTION

The scarcity of water is becoming critical environmental issue worldwide. In last few decades, there has been tremendous increase in the amount of both domestic waste water and industrial waste water generated due to rapid growth of population and accelerated pace industrialization. In the coming years, India is going to face a huge problem in deal with reduced fresh water availability and increased waste water due to increased population and industrialization. There is an increasing trend of considering water reuse as an essential component of water deficient areas, but in the water abundant areas as well. As long as the treated domestic waste is under permissible limits as prescribed by the Is code, it can be utilized as a replacement for potable water in the concrete production.

The constructed wetlands, has been recently used for wastewater treatment in many sectors. Thus, an extensive research and practical application is being gained in order to operate the system effectively constructed wetlands has wide application domestic, agricultural, and also industrial wastewater treatment. The use of constructed wetland on industrial pollutants is increasingly utilized and these represent a promising alternative method to treat the various types of industrial wastewater using the new technology of constructed wetlands.

However, several investigations have shown that wetlands may act as efficient water purification systems and nutrient sinks. Constructed wetlands are artificial wastewater treatment system consisting of shallow (usually less than 0.5m deep) ponds or channels, which have been planted with aquatic plants (Elephant ear plants), and rely upon natural microbial, biological, physical and chemical processes to treat waste water.

The treatment system is vegetated with water lettuce (Elephant ear plants) plant with different experimental conditions. The test in the laboratory, the water sample would be taken from the planting area which consists of water lettuce (Elephant ear plants) that is planted in the filter bed and which is then passed waste water. These parameters that would be analyzed in the laboratory to determine the physical, chemical & Biological characteristics of the waste water which are-PH, Turbidity, Alkalinity, Acidity, Dissolved oxygen (DO), Temperature, Chloride (cl) Electrical Conductivity, Hardness, Total dissolved solids (TDS), Biochemical oxygen demand (BOD), Chemical oxygen demand (COD). The

# An Experimental Study to Improve the Soil Stability using Terrazyme and Phosphogypsum in Rigid Pavement

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**ABSTRACT:** It is a well-known fact that a construction is as strong as its foundations are now a days the construction sites with good soils for foundations are fewer and fewer one of the most encountered issue on sites, especially in road construction is the presence of highly cohesive soils, soils that are easily affected by the change of the water content. Active clay soils present a problematic challenge for civil and geotechnical engineers all over the world. Key aspects that need identification when dealing with expansive soils include: soil properties, suction/water conditions, water content variations temporal and spatial (generated by trees and the seasonal change) and the geometry /stiffness of foundations and associated structures built on active shrink/swell soils. Stabilization procedures are available in order to reduce or completely eliminate the swelling potential of expansive clays. The problematic soil is removed and replaced by a good quality material or treated using mechanical and /or chemical stabilization different procedures can be used to improve the geotechnical characteristics of problematic soils by treating in-situ. One of the preferred solutions for soil stabilization is treatment with mineral binders. The solution has been proven to be effective of various types of cohesive soils. Phosphogypsum is a primary by product of the wet acid process for producing phosphoric acid from phosphate rock. It is largely calcium sulphate and has been given the name phosphogypsum. It contains impurities of free phosphoric acid, phosphates, flourides and organic matter that adhere to the surface of gypsum crystals and also substituted in the crystal lattice of gypsum. It is used to improve the swelling properties of an expansive soil. Terrazyme is a liquid enzyme which is organic in nature and is formulated from the vegetable and fruit extract. It is brown in color with smell of molasses and can be easily used without the need of masks or gloves. It is easily mixed with water and for optimal results should be diluted with optimum moisture content of that soil. This decreases the swelling capacity of the soil particles

**KEYWORDS:** Phosphogypsum, Terrazyme, phosphoric acid & flourides

## I. INTRODUCTION

Soil stabilization refers to the process of changing soil properties to improve strength and durability. There are many techniques for soil stabilization, including compaction, plus dewatering and by adding material to the soil. As a result of soil stabilization, the bearing capacity of the foundation of the structure is increased and its strength, water tightness, resistance to washout, and other properties are improved. Soil stabilization is achieved by injecting cementing materials or chemical solutions into the ground and also by applying electric currents to the ground or heating or cooling it. The basic methods of soil stabilization are cementation, argillization, bituminization, solidification, resinification, methods using electrochemical or thermal action, and artificial freezing. The soil stabilization includes both physical stabilization [such as dynamic compaction] and chemical stabilization [such as mixing with cement, terrazyme, lime, and lime by-Products, etc] (Materials & Tests Division, Geotechnical Section, Indiana, 2002). Chemical stabilization involves mixing chemical additives (binding agents) with natural soils to remove moisture and improve strength properties of the soil (sub-grade). Generally, the role of the stabilizing (binding) agent in the treatment process is either reinforcing of the bounds between the particles or filling of the pore spaces. Expansive soils swell when they are exposed to water and shrink when they dry, therefore soil moisture content is primary factor that affects the change of

# A Experimental Investigation on Performance of Concrete with Partial Replacement of Coarse Aggregate and Fine Aggregate with EPS and Iron Slag

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**Abstract-** A rice transplanter is a specialized machine fitted with a transplanter mechanism (usually having some form of reciprocating motion) driven by the power from the live axle, in order to the transplant rice seedlings onto paddy field. Rice is a major food grain crop of world. Unlike upland row crops, cultivation of low land rice crop is a labour intensive process. In spite of the common belief of availability of surplus agricultural labour in India, there actually exists a scarcity of skilled agricultural workers during the peak transplanting seasons. If this operation is not done in time the yield goes down. In view of this, there is an urgent need to mechanize this operation. The rice translation process is generally manual which involves number of labour. The process of manual rice transplantation is not so efficient as compared to the mechanical rice transplantation. Machine transplanting using rice transplanter requires considerably less time and labour than manual transplanting. It increases the approximate area that a person can plant.

**Keywords-** Rice transplanter, crops, cultivation. Machine transplanting.

## I. INTRODUCTION

Concrete comes from Latin word "Concretus" which means compact (or) condensed. Concrete is a mixture of cement, coarse aggregate, fine aggregate, water etc. The usage of concrete was from thousands of years ago. In Roman, Egyptian times it was rediscovered that it under water to set concrete volcanic ash is used. Heinrich Schliemann a German Archaeologist found the "concrete floors". In concrete floors lime, pebbles are used. In 1400- 1200 BC in Greece "lime mortars" are used.

In 300BC-476AD in Roman the "Roman concrete" was discovered which is made up of quick lime, pozzolono, aggregates of pumice. In the middle ages of 500-14 century burned lime, pozzolana are used. In 18 century use of cement gradually returned. In the industrial era "reinforced concrete" was invented in 1849 by "Joseph Monier".

Cement is a hydraulic binder and the basic ingredient of concretes and mortars. It acts as a kind of glue to stick sand and gravel together. The investigations of L.J.VICAT led him to prepare an artificial hydraulic lime by calcining an intimate mixture of limestone and clay. It was used by the Egyptians and then the Romans, it was rediscovered in the early 19th century. Cement has evolved over the decades. With study, it has become a technological product. In the beginning a mixture of lime, clay, sand and water was used in ancient construction. The Egyptians

were already using it 2,600 years ago. Around the 1st century, the Romans used this "binder". On adding volcanic soil from the region of Pozzuoli, near Naples, they discovered that they could get this mixture to "set" underwater.

## II. OBJECTIVES

The main objective of this project is to compare the compressive strength of normal concrete with partial replacement of EPS and iron slag.

- To improve the economical use of latest waste materials into concrete.
- To compare the compressive strength of coarse aggregate with EPS.
- To compare the compressive strength of fine aggregate with iron slag.
- To know at what percentage of EPS and IRON SLAG we will attain maximum strength.

## III. SCOPE

- To provide a most economical concrete.
- It should be easily adopted in fields.
- To reduce the cost of construction.
- To promote low cost housing for people
- To find the optimum strength of partial replacement of concrete.

# Stabilization of Expansive Soil with NACL & GEO-MAT

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**ABSTRACT** - In India almost above 20% of land contain black cotton soils and fine-grained clayey soils. For construction, road embankments and pavements these types of soils and subgrade materials are not suitable. So we need to improve it for that we choose stabilization technique with NACL & Geo-mat. Stabilization is the process of physical and chemical alteration of soils to enhance their engineering properties and thus improving the load bearing capacity of a sub-grade or a sub-base to support pavements and foundations. Sodium chloride has been used for many years as a stabilizing admixture in selected base course materials. Sodium chloride added to raw soil were found to have negligible effects on soil plasticity while increasing compacted density and decreasing optimum moisture content. Geo mat is most used stabilizer in stabilization of soil in flexible pavements. Geo mats are mainly used for reinforcement of soils for different kind of works in construction. In this work, the main discussion is about the stabilization of black cotton soil in flexible pavements by using geo mats. In our Project we are using chemical stabilization technique & Geo-mat to stabilize the soil. Adding 4%, 6%, 8% of NACL with black cotton soil and performing various laboratory tests that we can identify soil strength under the presence of geo-mat.

**Index terms:** -Black cotton, Soil Stabilization, Geo-mat

## I. INTRODUCTION

Expansive soils are called as black cotton soil. The name "Black Cotton" as an Agricultural origin. Most of these soils are black in colour and are good for growing cotton. All the black soils are not expansive soils and all the expansive soils are not black in colour. These soils passed high strength in summer and decreased rapidly in winter. Problematic soil is known for civil engineers as the soils which should be studied well before construct buildings on it. Behavior of these problematic soils is different than other soils due the behavior of its structure condition.

Expansive soil is one type of these problematic soils which occupies about 20% of the world surface area. Expansive strata are soil and/or rocks that contain clay minerals that have potential for swelling and shrinkage under changing moisture condition. In order to overcome this problem research has been carried out in the different parts of the world, out the economical and efficient means of using common salt and GEO-MAT. For effective treatment of soil, One of the methods is by adding the quantity of Sodium chloride to develop increased strength varies with the type of clay mineral present. Flexible pavement consists of 4 layers which are sub grade, sub base, base, surface course. Sub grade layer is main layer which is mostly used for stabilization of soil.

Geo mats are major type of geo synthetics used in reinforcement of soil in constructions. Geo mat is used as stabilizing agent for soil. Mostly geo mats are used in black cotton soil to increase its strength. CBR test is done to determine the strength of soil sub grade in flexible pavement. Expansive soils are a worldwide problem posing many challenges to civil engineers, construction firms and owners. During monsoon's, soils containing this mineral will imbibe water, swell, become soft and their capacity to bear water is reduced, while in drier seasons, these soils shrinks and become harder due to evaporation of water. These types of soils are generally found in arid and semi-arid regions. These types of soils are to be stabilized in order to rectify its deficiencies in engineering properties specially to use as pavement material.

Pavement design is based on the peface that minimum specified structural tone will be achieved for each layer of material in the pavement system. Each layer should resist shearing, avoid excessive deformations that cause fatigue cracking within the layer or in overlying layers, and prevent excessive permanent deflection through densification. As the quality of a soil layer is enhanced, the ability of that layer to spread the load over a greater area is generally increased so that a reduction in the required thickness of the soil subgrade and surface layers may be allowed. Here, in this project, our

# Improving Strength of Concrete by Partial Replacement of Cement with Ground Granulated Blast Furnace Slag and Sand with Robo Sand

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**ABSTRACT:** Concrete is the most undisputable and indispensable material being used in infrastructures development throughout the world. Ground Granulated Blast Furnace Slag has been constantly in use as cementitious replacement for sustainable infrastructure. It helps for the utilization of large quantity of concrete. High Performance Concrete (HPC) is a concrete meeting special combinations of performance and uniformity requirements that cannot be always achieved routinely by using conventional constituents and normal mixing. This leads to examine the admixtures to improve the performance of the concrete. On the other side, cost of concrete is attributed to the cost of its ingredients which is scarce and expensive, this leading to usage of economically alternative materials in its production.

This requirement is drawn the attention to explore new replacements of ingredients of concrete. Present focuses on the characteristics of M30 concrete with partial replacement of cement with Ground Granulated Blast Furnace Slag (GGBS), sand with ROBO sand and Synthetic resin compound is used for self-curing. Realization on the increasing demand for river sand supply in construction sector has inspired the current research to find alternative material to reduce the use of natural sand in concrete. The cubes and cylinders are tested for both compressive and tensile strengths. This usage of GGBS serves as replacement to already depleting conventional building material and the recent years also as being a byproduct, it serves as an Eco-friendly way of utilizing the product without dumping it on ground. It is found that by the partial replacement of cement with GGBS and sand with ROBO sand helped in improving the strength of the concrete substantially compared to normal mix concrete. The cement has been replaced by GGBS accordingly in the range of 0%, 5%, 10%, 15%, 20%, and 25% by weight of cement. And River sand has been replaced by Robo sand accordingly in the range of 0%, 10%, 20%, 25%, & 30% by weight of Sand for every replacement of GGBS for M30 grade mix. Concrete cubes were casted and tested after 7 days and 28 days curing for compressive strength and compared with Compressive strength of control cubes specimen. So that optimum percentage of GGBS and Robo sand is to be determined.

**KEYWORDS:** Robo sand, High performance concrete, Ground granulated blast furnace slag,

## I. INTRODUCTION

Concrete is the most famous and extensively used building material, owes to its advantageous properties, production and maintenance over steel and timber. Concrete is a matrix consists of basic ingredients namely binding material, fine aggregate, coarse aggregates and water. Conventional binding material cement has now become expensive and its production involves undesirable environmental consequences such as heavy production of Carbon dioxide (CO<sub>2</sub>). Conventional fine Aggregate, River sand has become scarce and its excessive use causes degradation of river bed and reduction in ground water recharge. To offset with these two challenges, an attempt has been made to produce concrete with supplementary and alternative materials.

# DESIGN AND ANALYSIS OF EOT CRANE HOOK WITH DIFFERENT MATERIALS USING FEM

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## ABSTRACT

A crane is lifting machinery, discontinuous movement aimed at raising and distributing loads in space, suspended from a hook. Cranes available in the market are grinder travelling crane, overhead travelling crane, jib cranes, wire rope hoist, and EOT cranes. The EOT cranes are one of the most important mechanical components in the heavy weight lifting and loading in to cargos, into trains, in to heavy truck vehicles, etc. Different types of EOT cranes available in the industries are container cranes, workstation EOT cranes (or) light weight mobile EOT cranes and semi EOT cranes. These vase verity of EOT cranes are differed based on the tonnages and area to be covered for lifting and moving the weights

The workstation EOT crane is the most economical solution in all those places where it is desired or civil works or expensive fixed mount metal structures, and where necessary make loading (or) unloading on a regular basis and at points different.

In our project, first, three dimensional geometry of the workstation EOT crane is built in, CATIA. Then analysis of different cross sections, the part which is used to carry the loads in EOT crane, is carried out by using finite element method in ANSYS software for maximum loads Apply on crane hook. Using materials in this project structural steel, Ni-Cr steel, ASTM Grade 60 steel , Stainless steel.

We observing **von-missies stresses, Shear stress, and deflections** generated from static analysis in ANSYS 15.0. finally concluded the suitable material on these 4 materials and which cross section is better design for crane hook.

**key words:** CATIA, ANSYS, Structural steel, Ni-Cr steel, ASTM Grade 60 steel , Stainless steel.

**1.1 DEFINITION OF CRANE:** Lifting device, used to elevate or lower loads vertically and to move them horizontally while they are hanged It will be presented all types of cranes with their mainly characteristics. The classification will be done as follows

Crawler mounted latticework boom crane

- a. Railroad crane
- b. Floating crane
- c. Crane vessel
- d. Derrick crane
- e. Slewing jib crane

## 1.2 CRANES CLASSIFICATION AND CHARACTERISTICS

- 1.2.1 According to design.
- 1.2.2 According to movement possibilities.
- 1.2.3 According to the device control.
- 1.2.4 According to orientation possibilities.

### 1.2.1 ACCORDING TO DESIGN

#### 1.2.1.1 JIB CRANE:

Revolver crane portal mounted  
Revolver crane semi-portal mounted

#### 1.2.1.2. BRIDGE CRANE

- i Overhead Bridge crane
- ii EOT crane
  - a. Work station EOT crane
  - b. Semi-EOT crane

#### 1.2.2 JIB CRANE:

It will be explained bellow each of the devices mentioned in the above list and their Characteristics that will be explained bellow each off the devices mentioned in the above list and their



# OPEN ACCESS INTERNATIONAL JOURNAL OF SCIENCE & ENGINEERING

## MODELING AND STRUCTURAL ANALYSIS OF CIVIL TRANSPORT AIRCRAFT NOSE LANDING GEAR USING FEM

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**Abstract:** An aircraft landing gear system must absorb the kinetic energy produced by a landing impact and excitations caused by the aircraft travelling over an uneven runway surface. This is the necessary requirement of a successfully designed landing system. The oleo-pneumatic shock is the most common type of shock absorber landing gear system used in aircrafts. It dissipates the kinetic energy produced by impacts arising when an airplane lands at high speed but also offers a comfortable ride to passengers when the airplane taxis at low speed. The objective of this project is to determine the stress, displacement, strain, shear stress of a nose gear using the different materials like Ferrium M54, Ti 10Al 2Fe 3v, Ti 6Al-6v-2sn, Al 7075 of an aircraft during landing using structural finite element analysis. The landing gear was first modeled using catia software and then imported into Ansys software perform a static and modal analysis. The applied working forces on nose landing gear were taken the boundary conditions. finally concluded the which material is the suitable for landing gear based on the stress, displacement, strain, shear stress values.

**Keywords**—Landing gear, shock absorber, loads, stresses, rebound chamber models.

### I INTRODUCTION

The purpose of the landing gear in an aircraft is to provide a suspension system during taxi, take-off and landing. It is designed to absorb and dissipate the kinetic energy of landing impact, thereby reducing the impact loads transmitted to the airframe. Aircrafts are one of the greatest inventions of human as it is a highly complex product. Having such a vehicle is very useful for easy and comfortable travels across the world. Aircrafts are used in multiple ways, they are used in commercial purpose as well as military purpose. It mainly reduces time of travel and provides luxury to the

passengers also the making and using of aircrafts provided lots of employability options. An aircraft has lots of sub systems and components which are used together to make it operable. Some of the main parts are fuselage, landing gears, cockpit, wings, engine, ailerons, rudder etc. all the parts were made keeping in mind that the product has to fly deep in sky so weight, stresses, deformation etc are taken in consideration before manufacturing the parts. Keeping these things in mind a design of each component and system was made and material selection has to be done wisely. To make an aircraft tough, strong, and light now a days, design and analysis were done in softwares.

# DESIGN AND CONTROLLING NOISE FROM NAVAL CLAMPING RING USING DYNAMIC ANALYSIS

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**ABSTRACT-** MAST provides unmatched information, debates and networking opportunities, trusted and acted upon by Services, Government, Research & Technology at Particularly focused on Undersea, Surface, Air, Space, and Cyber Platforms, Systems, and Technologies. Clamping ring is a naval component that is used to be hold and operate the mast in navy to getting communications.

When mast assembly parts moving upward then whole mast system weight lies on clamping ring. So need to develop the accurate design of clamping ring with high strength material. Otherwise it will subject to structural failure.

The main aim of this project is to develop the accurate design of clamping ring with increasing gussets. Design of clamping ring was done by using Unigraphics and Ansys software is used for performing structural analysis. This structural analysis done using Steel and Titanium materials. From analysis results best one is proposed.

**CAD TOOL: UNIGRAPHICS CAE TOOL: ANSYS**

## CHAPTER: 01 INTRODUCTION

### SUBMARINE ANTENNA

Submarines, now-a-days, are very important and vital arm of any defense force. Most of the world Navies today has tactical attack submarines which in the time of war can be used to attack enemy submarines and surface ships. The nuclear powered submarines are capable of launching missiles that can destroy inland enemy targets, thousands of miles away. In this way they act as mobile launching pads whose position can be safely kept hidden from the enemy. To perform this role submarines have to operate for continuous stretch of time spanning over many months away from shores and in the deep sea water.

This waveguide mode of propagation supports only vertical polarization. Longer the wave length, smaller is the electrical length of the vertical antenna radiator. This reduces radiation efficiency and restricts its bandwidth. At the antenna site, a lot of copper buried in the ground is needed to increase

the; round conductivity, to reduce the ground losses and thus to improve the antenna performance.

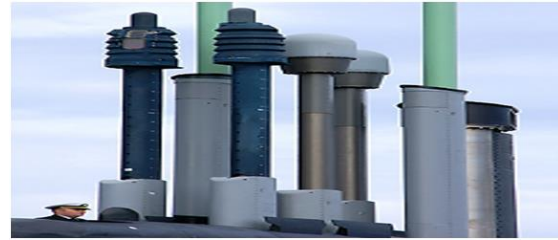


Fig: shows the submarine

## CLAMPING RING

A clamping (choke) ring antenna is a particular form of unidirectional antenna for use at high frequencies. It consists of a number of conductive concentric cylinders around a central antenna. Due to its delicate construction, it is often enclosed in a protective cover or radome when placed outside and exposed to the elements.

## CHAPTER: 02 LITERATURE REVIEW

**KshitijSandeepSadasivan ; Srinivasan N. Shalini ; Bhagath Singh Cheela ; NiravAnnavaarapu:** They written on Design and analysis of antennas for a nano-satellite. This paper describes the simulations, practical tests and analysis carried out for monopole and dipole antennas for nano-satellites. The antennas are designed for a 2U nano-satellite. With the monopole and dipole antenna designed to operate in the amateur VHF & UHF bands respectively. The antennas are made of steel tapes, which are obtained from measuring tapes. The antennas have a width of 6mm and thickness 0.2mm.

The length of the monopole is 570mm and that of the dipole is 203mm for each arm, with a feed gap of 11mm. The paper further describes the simulations and modelling carried out for the antennas using a CAD software: Computer Simulation Technology (CST). A thermal simulation was done using the System Assembly and Modeling (SAM) module of the CST software to understand the effects of the varied temperature

# Impact Analysis of Automobile Bumper by using ANSYS Work Bench

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## Abstract

Now a day's bumper is used in vehicle which directly connected to chassis of vehicle. So that when accidents are happened the force that transfer to other parts of vehicle through linkage. There are no other supports to absorb that impact forces. So there is a design need to absorb impact forces. For that reason here designed a new bumper system by Stiffeners. Stiffeners are used to minimize the impact of accidents and it will resists or absorbs impact forces. The objective of present study is to design and optimization of Automobile Bumper to avoid crashes and for the safety of passengers and pedestrians so for many Authors have worked on Automobile Bumper crash analysis and very few of them have focused on optimization of the strength and weight. In our study we are on focused on impact analysis of automobile bumper with high strength to weight ratio materials by using Ansys Workbench.

In this project, the new bumper system is designed using CREO and structural analysis is done in ANSYS Workbench. For structural analysis of the bumper, here we made impact analysis on existing (Maruti Alto) bumper with standard structure and honey comb structure at 9 different speeds such as 10km/hr to 90km/hr with 10Km/hr Intervals by comparing with ABS Plastic (Existed) to improve the overall performance of bumper.

**Keywords-** Bumper, Impact Forces, Stiffeners, CREO, ANSYS, Structural Analysis, ABS Plastic

## 1. INTRODUCTION

### 1.1 Bumper

A bumper is a structure attached to or integrated with the front and rear ends of a motor vehicle, to absorb impact in a minor collision, ideally minimizing repair costs. Bumpers also have two safety functions: minimizing height mismatches between vehicles, and protecting pedestrians from injury. British inventor Frederick Simms invented bumpers in 1901.

# FREE VIBRATION ANALYSIS OF THICK COMPOSITE PLATE BY USING ANSYS WORK BENCH

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**Abstract:** The main objective of vibration analysis is mostly utilized in aerospace applications to determine frequencies and strength in the structural components. The analysis is carried out for laminated composite plate under transverse loading condition. The mode shapes are observed in a laminate composite plate with different boundary conditions. It is found that the natural frequencies increase with increase in mode number and are more for Clamped-clamped boundary condition compared to remaining boundary conditions for the orthotropic plate. It was taken shell99 linear element for the propose of to study the vibration analysis. And it has six degrees of freedom and both are transitional and rotational along the x, y, and z directions. Those problems were solved by using the ANSYS 15.0 model. The ANSYS values are successfully executed and are given in tables. This analysis is useful in design of aerospace structures as the weight reduction is main criteria. the composite plate consists of aluminum alloys and polyethylene give better performance characters in design point of view in aerospace applications, the strength to weight ratio and stiffness to weight ratio are mainly considered while designing aero space structures.

**Keywords:** vibration analysis, composite plate, frequencies, structural components, ANSYS 15.0.

## 1.0 Introduction

In 3400 B.C the first composites were engineered by the Mesopotamians in Iraq. The ancient society glued wood strips on top of each other at different angles to create plywood. Following this, in around 2181 B.C the Egyptians started to make death masks out of linen or papyrus soaked in plaster. Later on, both of these societies started to reinforce their materials with straw to strengthen mud bricks, pottery and boats. In 1200 A.D, the Mongols began to engineer composite bows which were incredibly effective at the time. These were made out of wood, bamboo, bone, cattle tendons, horn and silk bonded with pine resin.

Following the industrial revolution, synthetic resins started to take a solid form by using polymerisation. In the 1900s this new-found knowledge about chemicals led to the creation of various plastics such as polyester, phenolic and vinyl. Synthetics then started to be developed, Bakelite was created by the chemist Leo Baekeland. The fact that it did not conduct electricity and was heat resistant meant it could be widely used across many industries. The 1930s was an incredibly important time for the advancement of composites. Glass fibre was introduced by Owens Corning who also started the first fibre reinforced polymer (FRP) industry. The resins engineered during this era are still used to this day and, in 1936, unsaturated polyester resins were patented. Two years later, higher performance resin systems became accessible.

The first carbon fibre was patented in 1961 and then became commercially available. Then, in the mid-1990s, composites were starting to become increasingly common in manufacturing and construction due to their relatively cheap cost compared to materials that had been used previously. The composites on a Boeing 787 Dreamliner in the mid-2000s substantiated their use for high strength applications. Definition a composite material is made by combining two or more materials – often ones that have very different properties. The two materials work together to give the composite unique properties.

## EXPERIMENTAL TESTING OF REINFORCED SYNTHETIC FIBRES USING BASALT & E GLASS

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**Abstract:-** The main objective of this paper is to find the best reinforced epoxy composite. The combinations of composites were plain woven basalt epoxy composite, plain woven e-glass epoxy composite, basalt/e-glass hybrid epoxy composite, hybrid epoxy composite with Graphite power variation 3g,6g,9g and all these 6 combinations were fabricated by hand layup method. The mechanical properties of composites were calculated by tensile, flexural, impact tests. The tensile strength of basalt/e-glass reinforced epoxy composite was high around 181.6 N/mm<sup>2</sup> when compared to remaining composites. The impact strength of basalt/e-glass reinforced epoxy composite was high around 4.32 J when compared to remaining composites. The flexural strength of basalt/e-glass with 6g of graphite reinforced epoxy composite was high around 440.34 MPa when compared to the remaining composites. Based on results basalt/e-glass hybrid epoxy composite possess a high tensile and impact strength. Basalt/e-glass hybrid epoxy composite was best composite compared to remaining composites.

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### I INTRODUCTION

#### COMPOSITE

Composite consists of different materials with definite properties to create a superior and rare material. Composites are organized by reinforcement or by types of matrix which is shown in fig 1.10. The reinforcements are used to resist the load of the element whereas matrix material help them to keep in desired location. Fiber reinforce composites are possessing interest in various applications, but their growth is restricted due to toughness. Also, hybrid composites are weight economy, refinement of fractural toughness, reduction in notch sensitivity, good impact resistance, longer fatigue life compared to composite which are produced by single reinforcement. A "Composite" can be described as a mixture of two or more different materials. Bonding two constituent materials with different mechanical, physical, including chemical properties, will produce content with different characters as a composite material. The two members are matrix and reinforcement. The reinforcement can improve the material's strength.

#### 1.2 PHYSICAL AND CHEMICAL PROPERTIES OF COMPOSITES

- Specific stiffness and strength is high.
- Dimensional stability.
- Possess high chemical resistance.
- Relatively easy processing.
- Possess a light weight.
- High strength to weight ratio.

- Good anticorrosion properties.

The properties of composite material are exhaustion life, electrical protection, wear resistance, warm protection quality, light weight, solidness, warm conductivity, fire resistance, temperature-subordinate conduct, and warm protection. The utilization of composite materials is very long. These composite materials are renewable biodegradable. Composite materials have good fatigue resistance compared to other metals. Low radar visibility and Molding to complex forms of composites are easy compared to other materials. The wide use of composite materials in surface transportation is because of their huge size. The strength-weight ratio is higher than other materials which results in the effective use of composite materials in surface transportation. Resilience and good productivity are the basic required qualities of a good composite material.

#### 1.3 ADVANTAGES OF COMPOSITES

Composite materials possess high strengths and abilities of different materials. Take an example of mud and straw, mud is an excellent binding material, but it cannot stand up to compression and force well. Straw is well able to withstand compression without crumbling or breaking. So, it serves to reinforce the binding action of the mud. Humans have been creating composite materials to build stronger and lighter objects for thousands of years.

#### 1.4 APPLICATIONS OF COMPOSITE

Composite materials are used in construction, engineering and other similar applications. Composites are produced by combining two or more materials. In such way

# FABRICATION AND MECHANICAL BEHAVIOUR OF AL6061-TiB<sub>2</sub> BY POWDER METALLURGY TECHNIQUE

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## ABSTRACT

Conventional monolithic materials have limitations in achieving good combination of strength, stiffness, toughness and density. To overcome these shortcomings and to meet the ever-increasing demand of modern-day technology, composites are most promising materials of recent interest. The present research work involves the study of Al 6061-TiB<sub>2</sub> composite through powder metallurgy. This method involves formation of reinforcements within the matrix by the chemical reaction of two or more compounds which also produces some changes in the matrix material within the vicinity. Titanium Diboride (TiB<sub>2</sub>) was the reinforcements in the matrix of Al 6061 {Al 97%-TiB<sub>2</sub> 3%, Al 94%- TiB<sub>2</sub> 6% and Al 91%- TiB<sub>2</sub> 9%} alloy which can be suitable for space, aircraft and automotive components at elevated temperatures. The mechanical properties in terms of hardness and impact test were carried out. The sample of Al 6061 alloy was also casted and tested for comparison.

**Keywords:** Powder Metallurgy Technique, Micro Hardness, Micro Structure, wear resistance, FESEM.

## 1. INTRODUCTION

A material or a particle having less than 100nm (at least one dimension) is known as Nano material. Nano term itself having the big meaning because in almost all industries like medical, electronics and more over in mechanical engineering industries Materials with structure at the Nano scale often have unique optical, electronic and mechanical properties. The properties like thermal conductivity, electrical conductivity optical and more over crystal are depends on the size of the particle. By viewing the Nano in the broad sense the following are important for the classification of Nano particles area a) <5 nm for catalytic activity, b)<20 nm for making a hard magnetic material soft, c)<50 nm for refractive index changes d)<100 nm for achieving super Para magnetism, mechanical strengthening or restricting matrix dislocation movement. By the point 4 of above size had a great influence of mechanical properties. Nano particles addition results in a significant improvement in, ultimate tensile and yield strength of composites. It was also found that the addition of to the matrix alloy increases the hardness[1] To improve the ductility and fracture toughness of the traditional composites, the new class of materials known as Metal Matrix Nano composites (MMNCs) are developed by reinforcing particles in the Nano meter scale [3,4] The reinforcement of micro/ Nano particles in the AMC's has improved mechanical properties due to the reinforcement of high strength and high modulus particles like Nano sized Sic, Al<sub>2</sub>O<sub>3</sub>, B<sub>4</sub>C, ZrO<sub>2</sub>, Graphite, FeTiO<sub>3</sub>. Aluminum Metal Matrix Nano Composites (AMNCs) are widely used for high performance applications such as automotive, military, aerospace and electrical industries. Recently some researchers have highlighted the real possibility to produce composites characterized by excellent mechanical properties, which can be further improved by optimizing the particle dispersion. These MMCs also exhibit remarkable wear resistance. In terms of hardness, mechanical strength, creep behavior and damping properties they also proved to be excellent

# Design and Analysis of Coated and Internal Cooled Single Point Cutting Tool

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**Abstract:** Single point cutting tool is most widely used tool in several machining and metal cutting operations. The work piece material is removed or machined step by step by force which increases temperatures of both work piece and tool itself. Where it causes thermal damage and high tool wear rate. The tool tip may deform plastically due to high temperature which results in poor accuracy in machining. There are several experiments and research going on to minimize these temperatures. The main objective of this work is carry to increase the machining capabilities of single point cutting tool by decreasing temperature using internal cooling and increasing material strength by adding carbon fibre to ceramic cutting tool and comparing structural forces on it. In this analysis, a small slot is made to hold external cooling pipe in the single point cutting tool. PTC CREO used as design software for tool design and ANSYS used as simulation software to simulate different scenarios with thermal and structural loads and compare results.

**Key words:** single point cutting tool, cutting forces temperature, ANSYS, CREO PTC, stresses.

## 1. Introduction

Cutting Tool is a wedge-shaped device that actually removes (shears off) excess material from a preformed blank in order to obtain desired shape, size and accuracy. While machining or metal cutting operation, the cutter forcefully compresses a thin layer of material in the workpiece and gradually shears it off. However, to remove material, three relative motions are necessary  
Classification of cutting tools.

Cutting tools can be classified into two groups, as given below.

- Single point cutting tool
- Multi point cutting tool

### *Cutting Tools*

**Single point cutting tool:** Single point cutting tool consists of only one main cutting edge that can perform material removal action at a time in single pass.

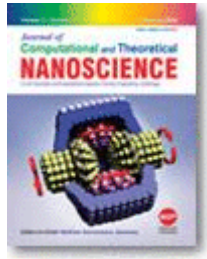
**Multi Point Cutting Tool:** A multi point cutting tool contains more than two main cutting edges that simultaneously engage in cutting action in a pass.

Single point cutting tool	Multi point cutting tool
Turning tool	Milling cutter
Shaping tool	Reamer
Planing tool	Broach
Slotting tool	Hob
Boring tool	Grinding wheel

### ➤ The following properties are required for cutting tool

- hardness, hot hardness and pressure resistance
- bending strength and toughness
- inner bonding strength

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# Optimal Multilevel Link Extend Umpiring Routing Based Secure Routing Protocol for Improving Privacy Standard in Wireless Sensor Networks

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References

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Supplementary Data



Abstract



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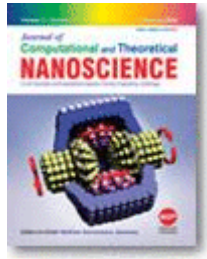


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Generally wireless sensor networks (WSN) are connected via a wireless medium to form a large amount of cooperative sensor nodes. Monitoring control is an important aspect of monitoring users in monitoring applications, such as wireless sensor networks, because of security. There are countless applications to pay for themselves but at the same time, their special properties offer a number of challenges, such as security and surveillance, control, and operation and complex system maintenance. WSN has already seen it on the Internet, from face-to-face security attacks. To propose an Optimal Multilevel Link extend umpiring routing (OML-EUR) based secure routing protocol for improving privacy standard in wireless sensor networks. Secure communication is also important in providing accurate and resource constraints at the sensor node at the moment. In this study, there are three of our contributions. Initially it monitors the neighbor network layer attacks for browsing the WSN on the transmission medium. Followed subscription a link establishment to monitoring the request packets through key transmission of WSN with secure routing protocols. By finding the secure communication as qualities of service verification among the modes to authenticate to transfer. The proposed system produce high secure performance by the result proves energy consumption and communication overhead as higher efficient than previous system.



# An Improved Link Stability Based on Swift Exploring Packet Ratio Using Expected Time Matrix in Wireless Sensor Network

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Abstract



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Suggestions

Wireless sensor networks become the integral part of network data transmission, to monitor information from a complex geographic range link may be failure due to transmission ratio. Expecting Power Saving, such a sensor network that has gained poor efficiency for the link broken, communication designed to be placed in a risk and non-access area, with wireless sensor networks playing an important in channel communication as stability of power. The Origin Challenge begins with a worm entering the wireless network to stabilize the link. The worm spreads to the entire network for infection in the link terminal. Mostly adjacent node as the affected nodes is rapidly blocked, and not infected. The target position is to route the target link when packets flow ground access to monitoring region is blocked, a solution is to send, the remote sensor. To propose an efficient method of Link stability based on swift exploring packet ratio using expected time matrix in wireless sensor network (SEPR-ETC). Improvement of the target coverage probability should be accomplished by accurate sensor arrangement, loss of large gait link density in the drop zone improved by estimating. The data collected from the sensors are sent to the central node for processing to cover the need to be constantly operated the communication Link. Swift state use the packet flow to monitor the network resources through good cooperative communication to reduce the amount of data that needs to be transmitted collectively, while the wireless sensor networks are in the industry to reduce bit energy consumption. The proposed SEPR-ETC model provides an advanced technique for controlling link exploring transmission compared to the existing model.

## AUTOMATIC SYSTEMS FOR CONTROLLING FRUIT MOVEMENT, GRADING AND STORING UNDER LOW TEMPERATURE CONTROLLED ATMOSPHERE STORAGE

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### ABSTRACT

*Cold storage units preserve fresh produce for extended shelf life. Operation of cold stores at present in India is done with multi commodity and common storage chambers where compatibility of fresh produce is not taken care of. Parameters to be maintained in the cold stores are: temperature of produce, temperature of the cooling coil, air temperature, humidity level, gas composition like oxygen, carbon-dioxide, ethylene, etc. for different fruits and vegetables to be stored in different chambers. These parameters need to be closely maintained to get best storage life of the produce. Most of the storage plants in India are equipped with manual or semi-automatic controls. Centralized chambers holding all types of fruits and vegetables at one place can lead to improper maintenance of storage conditions causing reduced life. The purpose of this study is to identify the technical requirements of computerized and automatic systems, so that fresh produce can be handled on automatic material handling systems. Apple color quality was measured by an expert panel and compared with colorimeter grading system. Significant positive correlation was found between visual and colorimeter readings. Computerized systems for refrigeration systems, data logging is to be installed for careful monitoring of cooling and gas conditions inside the chambers. This will ensure fruits and vegetable stored at optimal shelf life conditions. The results of this study can help to develop software for a comprehensive cold storage warehouse management system.*

**KEYWORDS:** Fruits and Vegetables, Color, Automatic Sorting-Grading, Cold Store, Controlled Atmosphere Store (CAS) & Automation

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### INTRODUCTION

Commercial cold storage units preserve fruits, vegetables, cashew nut, raisins, red chilli, Bengal gram, ice creams, cheese, butter, meat, frozen green peas, etc. to control the spoilage and retain the quality parameters. Shelf life of these products depends on the moisture content of the product, respiration rate, temperature of the cold store chamber, relative humidity (RH) etc. Fresh produce like fruits and vegetables require low temperatures of the order

## EXPERIMENTAL INVESTIGATION ON FLOW PROPERTIES OF MUSKMELON PULP USING CONTROLLED STRESS RHEOMETER

D. RAMESH BABU<sup>1\*</sup>, P. ISSAC PRASAD<sup>2</sup>, S. JAGAN MOHAN RAO<sup>3</sup> & K. V. NARASIMHA RAO<sup>4</sup>

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### ABSTRACT

An experimental study was conducted on muskmelon fruit pulp using a controlled stress Rheometer. The flow behavior, Consistency index is calculated using the flow data of shear stress and shear strain. The pulp behaved thixotropic in nature. Three models are used to explain the flow behavior, viz. Casson, Ostwald and Herschel-Bulkley. Mathematical modeling of data from the curve of Shear Stress Vs Shear rate indicated that Herschel-Bulkley model fitted the best with correlation coefficient of 0.99. The stress required to indicate viscous nature is found to be 3.3 Pa as per Casson model, which precisely indicates the stress required to initiate flow. This behavior appears same as tomato ketchup or sauce flow from the thermally processed glass bottles. The thixotropic loop experiment has confirmed the solid nature of the pulp with a residual stress of 3.1 Pa. This data is useful to design equipment for thermal treatment of fruit pulp, fluid flow in heat exchangers of food processing lines and further reference studies of flow behavior of different fruit pulps.

**KEYWORDS:** Muskmelon Pulp, Flow Properties, Shear Stress, Shear Strain, Thixotropic Behavior & Controlled Stress Rheometer

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### INTRODUCTION

Fruit pulps are used for several preparations like Ketchup, Sauce, Jam, Jelly, Nectar, Juice, Concentrated pulp for secondary processing, etc. Muskmelon fruit is found to be an underutilized fruit in terms of processing. Tomato, Apple, Orange, Mango are popular among fruit juices, nectar and other processed items sold in the market.

Muskmelon is a spherical fruit with hard peel and yellowish pulp for the varieties grown in India. Muskmelon pulp can be used as an ingredient for baby foods or any other secondary food preparations.

High moisture content of this fruit indicates viscous nature in bulk when made into pulp. However, some studies indicate that fruit pulps are of both viscous and elastic nature inherently. To initiate flow from the stagnant semi-solid pulp, some minimum stress is required. This is predominantly can be observed when using ketchup or sauce from a bottle or any packing having a narrow opening. When a bottle of sauce is tilted for withdrawing little quantity, a little force is required to take out the material from the bottle. This can be termed as elastic nature subsided with the visco-elastic fruit pulp.

**RESEARCH ARTICLE**

## **Brain Tumour Segmentation and Measurement Based on Threshold and Support Vector Machine Classifier**

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### **ABSTRACT:**

In medical image processing, the detection and segmentation of brain tumor from the test image is the challenging but most important task. According to WHO, the brain tumor is second most common of cancer death among young people. The proposed approach for the brain tumor segmentation is worked on the principle of threshold and classification using support vector machine. The brain image of the brain is processed in such a way so that the tumor is extracted and displayed the segmented the tumor portion of the image. The gray level co-occurrence matrix and other image quality measures are utilized to calculate the statistical features of the extracted tumor portion of brain. Based on the extracted features, the category of tumor, either benign or malignant, is classified using SVM classifier.

**KEYWORDS:** Brain tumor, Principal Component Analysis, Threshold, GLCM.

### **1. INTRODUCTION:**

Brain tumor is the anomalous and abnormal growth of superfluous cells in brain<sup>5</sup>. We know that for all living things the cell is the fundamental unit for its structure. Our body itself produces newer cells to replace the damaged or old ones. The unnecessary, unregulated growth of cells leads to the formation of tumor<sup>1-2</sup>. According to the nature of the tumor, it can be classified as primary (main) or secondary (metastatic). It is very difficult to define the degree of malignancy or aggressiveness of a brain tumor i.e., to sort a brain tumor as “benign” or “malignant” as several issues other than pathological aspects<sup>4</sup>.

Metastatic (secondary) brain tumors cancer cells that initiate growing in any part of the body and stretch to the brain. For instance, breast or lung cancer cells are often spread to the brain via the bloodstream. All metastatic brain tumors are malignant (brain cancer). Benign tumor has slow growth rate and less harm. It has distinct borders and rarely spreads<sup>11</sup>.

Even though it is less harm, Surgery is the effective solution for this problem. The malignant tumor growth rate is rapid and uncontrolled one. For this life-threatening and invasive tumor, surgery is the one but effective solution. The assignment of the grade to the tumor is based on the appearance of the tumor cells using some characteristic measures of the tumor cells such as rate of the growth, appearance (similarity to normal cells), dead tumor cells in the center of the tumor (especially grade four), blood supply and invasive potential. According to WHO, tumors are categorized into four grades based on rate of growth, blood supply, dead cells, uncontrolled growth and healthy cells. The

# DESIGN AND VERIFICATION OF DUAL LOGIC LASMAS STATE MACHINE FOR SOC

D. Venkanna Babu<sup>1</sup>, M. Ramakrishna<sup>2</sup>, R. Durga Prasad<sup>3</sup>, J. Prasanth Kumar<sup>4</sup>

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Received: 14 March 2020 Revised and Accepted: 8 July 2020

**ABSTRACT:** The dual-core embedded System-on-Chip (SoC) will be used especially in high processing demands such as video processing, audio processing and sometimes mixing of both audio processing and video processing. On a single chip it can design two processor cores and different interfaces to restrict a bus known as 128-bit ARM advanced microcontroller bus architecture AMBA. The Lasmas state machine output can able to determine the time of latch level produced by the register. The coordination of the bus and to implementation some responsive functions will be developed by the RISC (reduced-instruction-set computing) core. The development of transformational tasks with better accuracy and regular behavior can be implemented by DSP (digital signal processing) core. The DSP design can be enhanced to a great extent by executing all these tasks. The Transport Triggered Architecture (TTA) is used to design a DSP core which can minimize the hardware complexity, increase the flexibility and reduce the market time to a greater extent. This system will be expected to give optimum performance at suitable operating frequency. Finally it will consume very less amount of power. The design and implementation of dual logic Lasmas state machine for SoC will be implemented using TTA-DSP architecture.

**KEY WORDS:** Embedded system, Lasmas, TTA, DSP, system-on-chip, RISC, Processor core.

## I. INTRODUCTION

An embedded multimedia system computing tasks will be generally divided into control-oriented and data-dominated tasks. In general these two methods of computing platforms can be used for media processing. It is required to process both control functions and data functions. The advanced reduced instruction set computer (RISC) designs will be enhanced for a better data-concentrative functions by comprise accumulators, single instruction multiple data (SIMD) data paths, or particular devices to have the capability to implement data-concentrative functions [1]. However, the execution not that much good when compared to digital signals processing (DSP) with similar computing resources. Since data- concentrative functions will be much clear from normal calculation. The green public procurement (GPP) specifications will be available in DSP but these specifications are not perfect [2].

The primary responsibility of the design engineer is to fabricate a millions of transistors on a single chip to meet requirements of fast developing fields like mobile communication and digital signal processing (DSP) [3]. This technology is called as integrated circuit (IC) and this will lead to diminishes power consumption, delay and area. In present days there is a remarkable growth in the engineering and technology fields like industrial, mechanical, electrical and electronics. The integration density increased to double for every two years as described by the Moore's law. Due to this growth, at a fixed area of chip the complexity of IC will be enhanced drastically [4]. The design engineers will be developed a new technologies in order to manage the complexity with large chips. There is lot of limitations in WISHBONE open core technique especially in terms of system design. In this paper all these problems will be solved by using dual logic LASMAS state machine for SoC design.

## II. LASMAS STATE MACHINE FOR SOC

An IC with a single chip and fabricate total circuit on a chip, is popularly known as a system on chip (SoC). The SoC means an entire system on a single chip. Based on the size of the chip that a system can able to reduce , it has various applications such as artificial intelligence, communications and signal processing .The major requirements of this design is minimize in power, low form factor and less total cost . The better performance can be achieved with a less occupied area by using a SoC technique. The pre designed and pre verified cores are key points in SoC design. The design reuse technique uses reusable IP (intellectual property) blocks to assist in the concept of integration. The concept of reuse technique can also capable to



# Compact UWB-MIMO Triple Notched Antenna for Isolation Reduction

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## Abstract

In this article compact multiple input multiple output (MIMO) antenna with triple notch at the ultra-wideband application having two identical monopole antennas is proposed. The two inverted 'U' shaped slots are etched on the antenna geometry. The proposed antenna gets notch obtain notch characteristics at three frequencies i.e. 3.51–4.3 (WiMAX), 5.5–5.6 (WLAN) and 8.4–8.8 (X-band applications in UWB spectrum the proposed antenna is designed on FR4 substrate with a compact size of  $20 \times 34 \times 1.6$  mm<sup>3</sup>. The proposed antenna was designed and analysed HFSS 13. An excellent triple notch characteristic is obtained after insertion of Inverted 'U'-shaped compact slot on the radiators. At the centre of the triple notch bands a significant drop in the gain, efficiency of the antenna is seen this indicates a good suppression in the interference of two elements. The simulated and measured results show that the proposed is used for UWB MIMO diversity systems. Thus the proposed antenna two elements are used reduce isolation between channels for ultra wideband MIMO diversity systems.

**Keywords** Ultra-wideband (UWB) · Multiple input multiple output (MIMO) · Notch band

## 1 Introduction

The recent years witnessed an extensive growth in ultra wide band technologies due to its essential needs such as high data rate, low cost with low power. The Federal Communication Commission (FCC) allowed 3.1–10.6 GHz band as ultra wideband which is unlicensed [1]. The gradual rise in the different antenna configurations given rise to MIMO technology in the antenna scenario. The main challenge for the MIMO antennas to minimize the elements placed in the antenna geometry and the other is to enhance the isolation between those elements. The directional gain antennas which are integrated in MIMO antennas to reduce the mutual coupling which will have slight effect in the wideband impedance matching for ultra wide band applications.

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## IMPACT OF SRR ON DEFECTED METALLIC ANTENNA FOR BIOMEDICAL AND WIRELESS APPLICATIONS

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### Abstract

Last three decades onwards health care industries are continuously rising and advancing technologies towards implementing more suitable efficient systems for biomedical applications. In this work, a flexible and compact, low -profile defected metallic patch antenna (DMA) is proposed for biomedical and advanced wireless communication applications. This multiband antenna operates at 2.83GHz, 3.73GHz, 4.39GHz, 4.81GHz, 6.25GHz, 8.05GHz, 9.73GHz, 10.84GHz, 11.80GHz and 14.44GHz. The proposed antenna printed on Flame Retardant epoxy glass material with thickness of 1.6mm with a size of  $1.45\lambda_g \times 1.45\lambda_g \text{mm}^2$ . The simulated electrical and far field characteristics, surface magnitude current distribution are presented in it.

---

2010 Mathematics Subject Classification: Please provide.

Keywords: Defected metallic patch antenna (DMA), Transmission line feed, DGS, Single ring resonator (SRR), Multiband, Biomedical.

Received Month Day, 2020

# Low Power and area Efficient Clock Circuit Design

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**Abstract**-Pulsed latch came out as an standard sequence constituent for lowering power digital circuit, accommodating as an different of flip-flops. In this section we will be discussing about less Power n-bit pulsed latches which are projected to construct pipeline point in synchronous circuits. The process of integrating the projected n-bit size pulsed latches in the economic design flows is withal introduced. By using the n-bit pulsed latches nearly 45% potency savings can be accomplished for a class of Low Power Pulsed Generator designs Moreover, the potency utilization of the clock spreading network is reduced by 83% and layout area is reduced 16% with the projected n-bit pulsed-latches as corelated to the flip-flop predicated designs.

**Keywords:** Latch, Pulsegenerator, clock distribution network, power consumption, flip-flops.

## Introduction

In high performance and ultra-low power integrated circuits up to 70% of power in total power is consumed by the sequential circuits and the clock driven .Edge sensitive flip-flops are utilized for a synchronous digital circuits. Digital circuits which are utilizing flip-flops are tested, designed and verified under EDA tools (i.e., Electronic Design Automation).EDA implements have inhibited support for latch based designs. Moreover latches are smaller, expeditious and highly efficient when compared to flip-flops. Latches are rarely utilized in digital circuits due to the less support of EDA. Pulsed-latches are the possible choice which occurred from both the extremes of latches and flop-flops. Pulsed latches are combination of latch and flip-flop. Advantages of pulsed-latch are consumption of power is low and flexible time budgeting. Pulsed-latch contains a typical level sensitive latch in which a limited pulse is engendered taken away a pulse generator. Moreover the conveyance of the pulsed-latch is susceptible because of the pulse broadness that is resolved by the pulse generator. The designing of low power and robust pulse generator for a pulsed-latch is complicated because the pulse generator which is embedded is also power consuming.

Developing low power pulsed clock generator has been developed by using various techniques in place of utilizing one bit pulsed latches, Multi bit pulsed -latches are projected for low power synchronous implementation. In this proposed system pulse generators can be reduced by using n-bit i.e; one pulse generator can be used for n number of latches. By grouping many latches the deduction of the clock spreading network is also interpreted to a large extent. For different versions of n-bit latches under parameter variations robust operations are designed. i.Design of low power pulsed Clock Generator ii.Utilization of robust low power pulsed Clock Generator to operate n-bit pulsed latch.This paper includes related issues that are scheduled as Existing & Related works are discussed in Section 2. Designing of pulser circuit is deliberate in Category 3. Design of single bit Pulsed Latch are discussed in Section 4. Design of Multi Bit Pulsed latch is discussed in Section 5. Experimental results are discussed in Section 6. At last ended up with the conclusion in Section 7.

## Related Work

Anterior concepts are related to converting Flip- Flop predicated design to pulsed latch predicated design. In this paper we replace flip-flop and substitute pulsed latch to acquire pulsed latch based design. By this substitution we can achieve 22% of power is saved in addition 10% of boost in clock frequency. In Comparison to the flip-flop design pulsed latches work efficiently. Pulsed latches can reduce 25% of power saving and 4-7% of Performance advancement over the flip-flop based design.10% energy savings and 40% performance improvement are accomplished in the pulsed latch because of the width of the Pulse which is generated from the pulse generator. The concept of clock gating technique, Mux based Design and PL SW switch is withal examined for pulsed latch based design which is exhibiting power savings can be achieved.

# IOT BASED GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) GROUND MONITORING SYSTEM USING CLOUD

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**ABSTRACT:** These days, the Internet of Things is a quickly developing innovation that grants to include advanced gadgets into a system. Utilizing the Internet of things innovation to gather facts from an assortment of Internet associated GNSS beneficiaries gives an interesting chance to get continuous data about the uncommon and Fleeting movement of ionospheric attributes with excessive desires. The capacity to make a thick sensor arrangement is accomplished through the utilization of modest single-recurrence GNSS beneficiaries dependent on the Arduino innovation. This methodology can be actualized to acquire ongoing information on the all-out total electron content of the ionosphere. The assured information of the ionosphere deferral to radio signal of Global navigation for system satellite /Global positioning system satellite TV for PC and the estimation of the ionospheric TEC are accomplished straightforwardly within the Global navigation for system satellite beneficiary. The consequences are transmitted over a remote correspondence medium through Web to the cloud server, in which maps of the TEC to the ionosphere are developed. Now are proposed the new Architecture, by using this architecture we can directly store the data into the cloud. By using this architecture, we can provide remote monitoring.

**KEYWORDS:** IoT-(INTERNET OF THINGS), TEC-(TOTAL ELECTRON CONTENT), GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM), GPS- (GRAPHICAL POSITIONING SYSTEM).

## I. INTRODUCTION

The rise and improvement of the remote detecting technique have fundamentally expanded the measure of data got about procedures happening in this ionosphere and have opened up new zones of research for researchers. One of the attributes of this ionosphere is absolute electronic substance. The adjustment in Total electronic content signals different procedures happening in this ionosphere and that is reflected in resulting surface occasions. Strategy for observing the ionosphere depends upon the utilization based on the ground enrolment of radio flag by the worldwide route satellite framework and ensuing assurance of the TEC of the ionosphere depended on the handling of code and stage estimations of radio sign postponement.

To make unique minimal effort gadgets for implementation single-recurrence strategy for ionosphere total electronic content observing is conceivable with the assistance of the Arduino innovation. This is an open programmable equipment stage dependent on the utilization of period circuit sheets with a microcontroller. To make a ground-based recipient, a GNSS module is associated with the card that approaches the internet using a remote Wi-Fi arrange. The assurance of ionosphere deferral to radio sign and the computation of ionosphere TEC are done legitimately in the GNSS collector. As of late, the innovation of "Web of Things" is effectively creating. Internet of Things is a solid system of gadgets, worked with hardware, programming, and sensors. Internet of things innovation enables one to transmit Total electronic content information over a remote correspondence channel, freely process them without needing human support.

For a few packages, as an instance, airborne assessment, revised Global navigation for system satellite positions are not required constantly. for pc, estimations are accumulated and dealt with for dealing with post-fundamental. In no way like RTK GNSS masterminding, post-overseeing does not require the predictable transmission of

## A SECURE DOUBLE INTEGRITY CHECKING SYSTEM USING HYBRID STORAGE CLASS MEMORIES

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**ABSTRACT:** In this paper the design of secure double integrity check system using hybrid storage class memories is implemented. Basically, the integrated chips are very complicated to increase the density of chip and decrease the size of chip. So to overcome this SCM array is implemented. Migration handler will handle the memories like non volatile memory and Dynamic random access memory. The memory controller bank will control the saved data following from NVM and DRAM manager. Now, this saved data will get mixed up by using double integrity controller. In this read and write operations are performed based on the W-SCM and R-SCM. At last the obtained data will be saved in memory cache bank. Hence from results it can observe that the hybrid SCM will reduce the delay in effective way.

**KEY WORDS:** Random Access Memory (RAM), SCM (Storage Class Memories), Dynamic Random Access Memory (DRAM), Non Volatile Memory (NVM), W-SCM (Write Storage Class Memories) and R-SCM (Read Storage Class Memories).

### I. INTRODUCTION

Random Access Memory (RAM) involves a huge segment of a System on chip (SoC) and has a remarkable commitment to the all out force utilization and region of the SoC. Since region is an Important factor when structuring circuits, memory configuration engineers mean to put however many cells as would be prefer per segment to permit sharing of fringe hardware [1]. The regular 6T and 8T cells are incredibly restricted by their failure to work in longer segments. In most recent couple of years to achieve the superior CMOS gadget, scaling is utilized [1].

Low power circuit operation is a vital metric for the present incorporated circuits. As compact battery powered electronic devices like small radio devices, cell phones and convenient computers are winding up more mind amazed and common, the interest for expanded battery life requires to search out new innovations and circuit systems that give superior and long operational circumstances. In non-compact applications additionally, lessening power scattering is turning into an important basic issue [1]. Additionally, so as to meet the ongoing execution in computers is complex applications, it is important to have a base event moreover. However, as technology is invariably scaled, spilling currents turn into a noteworthy supporter of the separate power spreading.

A diminishment in power supply voltage is important to lessen dynamic power and stay away from unwavering quality issues in profound sub micron administrations [2]. Voltage scaling goes with supply voltage scaling to keep up the execution, yet it exponentially builds the sub threshold spilling currents. This lessened supply voltage and expanded spilling cause securely and untrustworthy operation of circuits. Thus, in this proposal, an active is made to outline digital CMOS circuits that have lessened dynamic and spilling power with a worthy deferral and noisy edge. Different power decrease methods are proposed and investigated for their application in three different digital CMOS circuits [3].

# LOW POWER DESIGN STRATEGIES ON FORCED LECTOR STACK TECHNIQUE IN VLSI CIRCUITS

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**ABSTRACT:** In the present era of Very Large Scale Integration (VLSI) technology low power plays a vital role. The scaling of threshold voltage in CMOS circuits results an increase in sub-threshold leakage current. Leakage current has become a major factor in total power dissipation of integrated circuits. This leakage current is reduced by introducing a forced lector stack technique for a CMOS circuits in this paper. The proposed method of forced lector stack technique can be implemented with the supply voltage of sub-threshold Voltage for designing CMOS gates in order to reduce the leakage current in active mode and standby mode without compromising the dynamic power dissipation and reduce the delay at the same time. In addition optimization techniques of power dissipation at different levels of abstraction are presented in this paper. The simulation results show the analysis of proposed forced lector stack technique circuit.

**KEYWORDS:** Dynamic power dissipation, Sub threshold leakage current, VLSI technology and Forced lector stack technique.

## I. INTRODUCTION

The actual experiment on VLSI in the last decades concentrates on the performance, area, cost and power consumption. Recently this has been progressed to change in any case and consequently power consumption is almost equal to the power required for area and speed consideration. For a circuit to circuit and application to application, the idea of reducing power consumption is varied. The main objective, in the field of application of small scale integrated circuits such as mobile phones is to maintain the lifetime battery, low weight and low designing cost. The business of semiconductors has been enabled by the scaling of CMOS devices in order to meet the demand of high performance and high synchronization density. However, when the component measurement becomes significantly smaller it generates a leakage current below the sub-threshold in a given short forwarded lengths which expands when turned off by a transistor. The transistors do not completely turned off. This was the other reason for the expanded sub-threshold leakage current. Therefore, for the innovations of silicon devices, the leakage power dissipation plays a vital role for a considering a total power consumption. Area, speed and power are the three kinds of parameters to be considered. The dynamic, static and short-circuit are the generally three main factors for the cause of power dissipation in VLSI CMOS circuits. Some developed methods and techniques are proposed to reduce the leakage current.

A key aspect of the configuration of the VLSI CMOS circuit is to reduce power dissipation by maintaining the better performance of the circuit. Hence for these purpose of maintaining the performance of circuit it must be required to scaling the threshold voltage. For the VLSI circuit designing, power consumption is turned into a major problem. Therefore, configuration of versatile framework performs an actual experiment by the use of outlined developments for reducing the power consumption in coordinated circuits. Scientists have proposed a variety of approaches to solve the problem of power consumption. There is no influence to meet trade-off among the area, power and speed in any case. It must be required to select suitable systems that meet application and objective requirements.

Finally, there are no battery-powered frameworks for the better performance, e.g. set-beat Personal computers and interactive media computerized flag processors. Reducing the cost of framework (cooling, grouping and use of vitality) is the general objective for minimizing the power while ensuring everlasting power stability of devices. These various requirements affect how the power improvement is managed and how much the designer negotiates on cost or performance for reducing power dissipation. The advantage of design technologies with a low power is much more important than before. The main concerns in those technologies are area, cost and performance of design. Power consumption is simply a second problem.

The portable medical devices, laptops and wireless applications are some of the aggressive market sectors and the improvement in such sectors has recognized that power loss is of highest importance. The improvement in this critical market sectors such as wireless applications, laptops and mobile medical devices considers energy

## **A Precision water saving irrigation system using IOT**

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**Abstract:** India is mainly an agricultural country. Agriculture is the most important occupation for the most of the Indian families. It plays vital role in the development of agricultural country. In India, agriculture contributes about 16% of total GDP and 10% of total exports. Water is main resource for Agriculture. Irrigation is one method to supply water but in some cases, there will be lot of water wastage. Therefore, in this regard to save water and time we have proposed project titled Arduino based automatic irrigation system using IOT. In this proposed system, we are using various sensors like temperature, humidity, soil moisture sensors that sense the various parameters of the soil. In addition, based on soil moisture value land is automatically irrigated by ON/OFF of the motor.

**Keywords:** Internet of things (IOT), Arduino, Soil moisture sensor, GSM module, LED display.

### **1. INTRODUCTION**

Agriculture is the backbone of all developed countries. It uses 85% of available fresh water resources worldwide and this percentage continues to be dominant in water consumption because of population growth and increased food demand. Due to this, efficient water management is the major concern in many cropping system in arid and semi-arid areas. An automated irrigation system is needed to optimize water use for agricultural crops. The need of automated irrigation system is to overcome over irrigation and under irrigation. Over irrigation occurs because of poor distribution or management of waste water, chemical which leads to water pollution. Under irrigation leads to increased soil salinity with consequent build up of toxic salts on the soil surface in areas with high evaporation. To overcome these problems and to reduce the man power smart irrigation system has been used.

### **2. EXISTING SYSTEM**

The sensors and LED display are successfully interfaced with Arduino uno board for irrigation process. All observations and experimental tests proves that project is one solution to field activities, irrigation problems, and storage problems using remote controlled, smart irrigation system. Implementation of such a system in the field can definitely help to improve the yield of the crops and overall production.

### **3. PROPOSED SYSTEM**

In proposed system we are using GSM module for sending the notifications to farmers mobile. The system water cool monitors is connected to the arduino uno and it is acts as remote to control the overall module. It is the wireless communication make all irrigation incidents automatically. Estimates of best irrigation for greenbelt and automatic control by using this Arduino.

### **4. LITERATURE REVIEW**

- Experts study show that moisture deficit and high temperature are two main environmental region during plants growing season.
- Scholars study shows that the impact on different soil water handling on stem weight, and root weight.
- Plant leaves relative moisture content and water consumption volume per plant decrease with the reduction of soil water.
- when soil water content is too high, it will not only cause decay of the root, but also a waste of water resources at the same time, and as a result of too much irrigation, water infiltration will take away large fertilizer

### **5. OBJECTIVE**

In India, agriculture in villages plays an essential role in developing the country. Basically, agriculture depends on the monsoons which have not enough water source. Soil moisture and water level in the soil are wirelessly transmitted using wireless technology for better production. To save

## **Fault Tolerance Identification and Its Detection for FFTS Using HJB System on Chip Design**

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### **Abstract**

*In VLSI technology many errors are degrade performance, the various fault tolerance methods implemented for parallel FFT's. But, these are not suitable for present technology, so in this work HJB based FFT model has been proposed for detecting the errors in Fast Fourier Transform (FFT). In modern communication this type of FFT error correction and detection gives the efficient results. THE proposed HJB-FFT method gives the 98.9% accuracy, sensitivity is 98.1% and recall by 98.7%. The simulated results out performs the present technologies and gives the high performance.*

**Keywords:** *HJB-FFT, Xilinx 2015b, salt detection and correction.*

### **Introduction:**

The major complexity of many VLSI designs facing with fault tolerance error, in this way FFT's are major blocks to effecting the any electronic circuits. Therefore to increase the efficiency of any VLSI design or CMOS technologies we need to design a advanced FFT blocks with fault tolerance mechanism. For this various architectures are defined and implemented, in this an advanced error free multi butterfly radix-r with FFT design is implemented. At this FFT methods are screening the pipe lining technologies by dual port memories. The FFT and DFT without any advanced processing module generates the false results. The basic operations such as DFT, FFT are widely used in many communication techniques. So, this system gives the moderate results but we need to improve further [1].

With the rise in data transfer and thus noise and disturbance sources, technicians have really been fighting with the requirement for more effective and reliable methods to detect and correct mistakes in the information obtained. While several methods and methods have been suggested and implemented over the past century, there is still a issue with data reliability in communication. Thus, ED & EC methods are necessary. Most of these methods could only identify mistakes, like "Cyclic\_Redundancy\_Check"(CRC) [2 3]; others are intended to identify and right the mistakes, including Solomon Codes [4, 5], Hamming Codes[ 6], and Normal Orthogonal Codes (NoC) [7, 8]. Furthermore, current methods are not capable of achieving high effectiveness in error detection and correction as well as meeting bandwidth demands, particularly with a rise in the amount of transferred data. A method (NoC) combining the OCC and a method, Closest\_Match utilizing FPGA), has resulted in the enhancement of the NOC's detection capacities from 71.88 percent to 93.57 percent[9] in a prior job. We introduce an extended method HJB-FFT, in this document which connects parity of Orthogonal Codes vertical to parallel FFT fault. The outcomes illustrate that the planned method augment both ED and ECcapability of parallel processing fault detection with Orthogonal Codes.

**RESEARCH ARTICLE**

## **A Simple Approach to Automated Brain Tumor Segmentation and Classification**

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### **ABSTRACT:**

Brain tumor is the abnormal growth of superfluous cells in central nervous system or brain. It is fact that brain tumor is second most common of cancer death among young people. There are two key categories of brain tumor as cancerous and non cancerous. The cancerous brain tumor is called as Malignant. It spreads very quickly and difficult to remove. The non-cancerous tumor, called Benign, growth rate is very slow as compared to malignant one and easy to remove. The work proposes a simple but more efficient method to detect and segment the brain tumor from the MRI image. The proposed work based on the threshold segmentation for the segmentation of the brain tumor. The MRI image of the brain is taken and processed in such a way so that the tumor is extracted from the given MRI image and displays the segmented part of the image which contains the tumor. The otsu global threshold performs tumor segmentation and image area opening applies to remove the small components form the tumor portion. The gray level co-occurrence matrix and other image quality measures computes (extracts) the features from the segmented image. Support vector machine classifier is finally classifies the tumor, either benign or malignant, based on the extracted features.

**KEYWORDS:** Brain tumor, Threshold, Principal Component Analysis, Discrete wavelet transform, Gray-level co-occurrence matrix, Support vector machine

### **1. INTRODUCTION:**

All of us know that cell is the fundamental unit for all living things. If cells are damaged, our body produces newer cells to replace the damaged or old ones<sup>1-2</sup>. The unnecessary, unregulated growth of cells leads to the formation of tumor<sup>4</sup>. A brain tumor is defined the abnormal growth of superfluous cells in central nervous system or brain<sup>5</sup>. According to the nature of the tumor, it can be classified as primary (main) or secondary (metastatic)<sup>7-8</sup>. Primary brain tumors originated and tend to reside in the brain itself<sup>16</sup>.

Primary tumors are categorized into either benign or malignant. Table 1 clearly distinguishes both categories. It is very difficult to define the degree of malignancy or aggressiveness of a brain tumor i.e., to sort a brain tumor as “benign” or “malignant” as several issues other than pathological aspects. Metastatic (secondary) brain tumors cancer cells that initiate growing in any part of the body and stretch to the brain. For instance, breast or lung cancer cells are often spread to the brain via the bloodstream. All metastatic brain tumors are malignant (brain cancer).

**RESEARCH ARTICLE**

## Central Retinal Artery Occlusion: The Identification and Segmentation of Retinal Blood Vessels

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### **ABSTRACT:**

The Central Retinal Artery Occlusion is a retinal disorder in which blood flow through the major artery of retina gets blocked resulting in sudden vision loss without any pain in the affected eye. This blockage generally comes from a blood clot or cholesterol deposit in the blood vessel. The segmentation of retinal blood vessels and optical disc is the most vital and challenging task to investigate the rigorously of the various retinal diseases such as branch retinal vein occlusion. There is lot of methods and algorithms are developed to address this issue. The proposed method enlightens the central retinal artery occluded retinal blood vessels identification and extraction based on simple image processing techniques.

**KEYWORDS:** Central Retinal Artery Occlusion, Retinal Blood Vessel, Segmentation, Contrast Enhanced Adaptive Histogram Equalization, Green Channel.

### **1. INTRODUCTION:**

The segmentation and identification is the most important task in image processing. The segmentation is the process of partitioning of a complete image into number of sub images called clusters<sup>9-12</sup>. In color based segmentation, the image in RGB color model is transformed into other color models such as CIE Lab, HSV or YCbCr<sup>13-14</sup>. The color model is the representation of color using color components or channels in three dimensional way<sup>15-16</sup>.

Central Retinal Artery Occlusion is a retinal disorder in which one of the arteries that bring blood to the eye's retina gets blocked resulting in sudden vision loss without any pain in the affected eye.

The retina is a very thin film of nerves at the back side of the inner eye that senses light falling on it<sup>1-4</sup>. The retina converts the scene into electrical impulses<sup>5-6</sup>. These electrical signals are transmitted to brain (neurons) through the optic nerves and we are capable to perceive the illustration<sup>7-8</sup>. Therefore, an obstruction (blockage) in the retina's arteries is a very severe problem. This blockage generally comes from a blood clot or cholesterol deposit in the blood vessel. This is a very serious state which needs instant and prompt medical attention. Figure 1 illustrated the blocked artery of CRAO. The image is obtained from <https://www.epainassist.com/eye-pain/central-retinal-artery-occlusion>.

Central Retinal Artery Occlusion (CRAO) generally arises amongst the people at the age group between 50 and 70. Hardening of the arteries and atherosclerosis is the most general crisis linked with CRAO. An abnormal blood clot formation, thrombosis, is main cause of CRAO. The loss of blood flow through the major artery of retina is referred to as Central retinal artery occlusion (CRAO).

## A PRE-TRAINED MODEL BERT FOR MACHINE TRANSLATION FROM ENGLISH TO TELUGU

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### ABSTRACT:

At present, Neural Machine Translation (NMT) is an innovative and latest approach for machine translation, which is way better than statistical machine translation. It has drawn so much attention to it, that most of researchers are exploring new states of art approaches to get better translations. As the area of deep learning and transfer learning are also being implemented a lot, we are trying to fit a pre-trained model's unique way of tokenization into a NMT architecture so that the pre-trained weights gives better translation. In this work we study how BERT pre-trained models might be exploited for supervised NMT. We compare various ways to integrate pre-trained BERT model with NMT model and study the impact of the monolingual data that is used to train BERT which we are proposing to use in the translation of parallel corpus.

### 1. INTRODUCTION

Translation using machines is being done using various methods like Rule-Based MT (RBMT), Statistical MT (SMT), Neural MT (NMT) for a while now. Statistical MT uses the predictive algorithms in teaching a computer to translate the text. NMT is predicated upon the model of neural networks within the human brain, where information is shipped to the various "layers" for processing before giving output. Statistical MT doesn't work well for language pairs with significantly different ordering. Using Neural Networks, translation of longer sentences into required language is feasible. The Previous add neural MT is completed using different models like Attention mechanism in Encoder – Decoder. during this proposal we might wish to introduce a fine-tuned model Bidirectional Encoder Representations from Transformers (BERT). BERT uses a completely unique technique named Masked Language Model (MLM) which allows bidirectional training in models. Transformer may be a widely known and popular attention model, to language

modelling. This contrasts with the previous efforts which checked out a text sequence either from left to right or combined left-to-right and right-to-left training. We implement BERT for translating one language to a different language. Machine Translation may be a field of common language preparing which uses machines in converting normal language. Information driven machine interpretation has become the overwhelming field of concentrate due to the supply of considerable parallel corpora. the primary goal of data driven machine interpretation is to convert considered Language, as long as the frameworks absorb interpretation learning from sentence adjusted.

Image recognition is one of the most common uses of machine learning. There are many situations where you can classify the object as a digital image. For example, in the case of a black and white image, the intensity of each pixel is served as one of the measurements. In colored images, each pixel provides 3 measurements of intensities in three different colors – red, green and blue (RGB).

## BLOOD REPOSITORY MANAGEMENT SYSTEM

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### ABSTRACT:

To built a solution to the ever growing requirements of blood due to accidents and various health problem the system is developed for accessing the information about various blood banks, and hospitals and their blood stock. The solution should give complete information about blood donor ,and activities of hospitals and blood banks regarding the blood donation. Donors provides with registration process to maintain their information for future donations as well as to make their information available to search. In our project we need to collect the information like name, roll numbers ,bloodgroup, address ,contact number. we are going to create one page in that page having home, search, donor registration, login, contact us, about us. we need to save the information about donors and their details. if any emergency occurs their can contact us for blood donors.we are acting as a mediators between donor and receiver. Receiver can contacts us through our contact numbers(or)websites.

### 1. INTRODUCTION

Python is a general purpose, dynamic, high level and interpreted programming language. It supports Object Oriented programming approach to develop applications. It is simple and easy to learn and provides lots of high-level datastructures. Python is easy to learn yet powerful and versatile scripting language which makes it attractive for Application Development.

Python's syntax and dynamic typing with its interpreted nature, makes it an ideal language for scripting and rapid application development. Python supports multiple programming pattern, including object oriented, imperative and functional or procedural programming styles. Python is not intended to work on special area such as web programming. That is why it is known as multipurpose because it can be used with web, enterprise, 3D CAD etc. We don't need to use data types to declare variable because it is dynamically typed so we can write `a=10` to assign an integer value in an integer variable. Python makes

the development and debugging fast because there is no compilation step included in python development and edit-test-debug cycle is very fast.

Python is a general purpose and high level programming language. We can use Python for developing desktop GUI application, websites and web applications. Also, python as a high level programming language, allows you to focus on core functionality of the application by taking care of common programming tasks.

Python allows programming in object-oriented and procedural paradigms. Python programs generally are smaller than other programming language like Java. Programmers have to type relatively less and indentation requirement of the language makes them readable all the time.

Python is an object-oriented programming language like Java. Python is called an interpreted language. Python uses code modules that are interchangeable instead of a single long list of instructions that was

## BLOOD DONOR APP

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### ABSTRACT:

The main aim of this project is to save lives of people by providing blood. Our project Online Blood Donor app using Android is developed so that users can view the information of nearby hospitals, blood banks and volunteer donors. Four perspectives i.e., hospital, blood bank, volunteer donors and patient develop this project. This application helps us to select the nearby hospitals, blood banks, donors online instantly by tracing its location using GPS.

### 1. INTRODUCTION

Generally if we need blood in any emergency cases we have to search for blood in blood banks or else for any blood donor but it is a time taking process. There are also few situations where we lost few lives in search of blood. So to overcome this problem we had created a app called “**BLOOD DONOR APP**” in this app we can request for the blood group what we need very quickly. And we can also access location of the donor who had accepted the request by using geo- location. Once the donor had accepted the request the contact is shared to both the donor as well as seeker.

Appypie is an application development platform that enables users to create mobile applications compatible with operating systems such as Android, iOS and Windows mobile OS. The solutions creates applications for a variety of industries including casinos, gyms, small businesses and religious organizations. Configurable application templates allow organizations to create games, organizational apps, shopping carts, customer relationship management apps and more based on existing application frameworks.

Applications can be shared with potential customers on various social platforms that include Facebook and Twitter, as well as the Appy Pie marketplace. Appy Pie's application analytics feature enables managers to track application performance by measuring parameters such as conversion rates, engagement levels and current active users. The platform is available with monthly subscription pricing or with a one-time perpetual license fee.

### 2. REATED WORK

#### Existing System

There are many blood donor apps and websites in online but they does not provide geo location and there is no data base connection which send confirmation mails like comments mails, app rating mails, password changing mails, login details mails. So here we added both geo-location and database. Disadvantages of existing system No geo-location ,No database connection.

#### Proposed System

To create an application that matches blood donors and recipients through angeo-location. It is useful to find local

## A MACHINE LEARNING MODELLING FOR BITCOIN MARKET PRICE PREDICTION USING LONG SHORT-TERM MEMORY AND RECURRENT NEURAL NETWORKS

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Kilarapu Surya Sai Eswar Pratap<sup>5</sup>

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### ABSTRACT:

Machine learning based on Neural Network has integrated usages in a variety of fields such as translation, finance, distribution, and medical world as well as cognition. This study shows Recurrent Neural Network Learning Model on the basis of LSTM, which analyses the previous prices of a cryptocurrency, Bitcoin and predicts the next one. This model indicates the actual and predicted prices of Bitcoin for 81 days in the way that it has learned the former prices for 30 days and then anticipates the next day price. Regularized data set for Modelling is divided into test data set and training data set at the rate of 1:9. The latter set is once again separated into training data and verification ones. Machine Learning of this study needs to use Neural Network library, Keras framework. To fit the model is to look for the model's weight by optimizing the process, while using the training data. In this paper, fit function's batch size is 11 and epochs is 30. As learning gets processed more repetitively, the loss decreases more monotonously, and then it converges to more regular value. That is, it means there is no overfitting. As the result of the experiment, the machine learning proposes not only that after analysing the graphs of error rates and weight change rates, weight converges towards a particular one, but also that as learning goes over, the processing efficiency of its neural network gets better.

### 1. INTRODUCTION

In machine learning, predictive analysis supplies appropriate consultation and information, computing trends and future probabilities and then predicting potential result. Recurrent Neural Network generates following data prediction through learning the context, that is, the relationship among data in estimation problem dealing with such time series data as monthly sales, price index, unemployment rate, exchange rate, and stock price [2].

The observed value of the time series data has a time sequence. In order to analyse the temporal series data such as exchange rates or stocks, there can be several

methods: moving average which is able to anticipate the future price, computing the average of the past and the present prices, ARIMA (Auto-Regressive Integrated Moving Average) which expects the future value, while modelling the data, the regression analysis which estimates how one or more independent variables influence on International Journal of Advanced Science and Technology Vol. 28, No. 5, (2019), pp. 225-232. Along with Artificial intelligence, cryptocurrency has been recently the subject of IT Convergence to which both tremendous technologies and the social interest have been increasingly devoted. Designating Busan as the unfettered free district for the

## ACTIVITY PLANNER WEBSITE FOR SPORT EVENTS USING PYTHON

Mr.R.Siva<sup>1</sup>, Maddala Vasavi Anupama<sup>2</sup>, Keerthi Kavya<sup>3</sup>, Manjeeth Singh<sup>4</sup>, Vegesna Gayatri Meghana<sup>5</sup>

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Ramachandra College of Engineering, A.P., India

### ABSTRACT:

Activity Planner website for Sport Events manages the activity of many sports to a particular corporation, union, establishment, fellowship and center. This website allow users to consume less amount of time when compared to manual work. This website contains all the detailed information about all the vendors available who owns a playground or an event hall which allow users to choose any of them according to their interest. This website will take care of all the servicing activities in a quick manner. All the information like venue details will be clearly mentioned in the website thus providing a scope of booking them at any time. Thus, it is a user friendly website. The aim is to automate the existing system with the help of computerized equipment's and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored.

### 1. INTRODUCTION

Generally, planning for an event requires all the information to be noted regarding the event which includes the event date, time, venue and the information of the user who has requested for the event and his details includes name, phone number, email id. This entire information needs to be saved for conducting and booking slot for that particular user at a picked time manually in a book.

This entire process takes time to write. If these details were lost cannot be retrieved back. So in one or the other way, our

website is a one-step solution to this problem. Different vendors who owns playgrounds get registered into our site and add all the required information about the venue which might include address of the venue, capacity of the venue, venue name, price etc. So now, users get registered into the site, login and book for any of the playground for a particular time slot of their interest and convenience. Vendor can accept or reject the booking request made by the user and user can also cancel the booking. So our website acts as

## BRAIN TUMOR DETECTION USING DEEP LEARNING

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### ABSTRACT

The population of abnormal cells called glial cells that takes place in the brain causes brain cancer. Over the years the number of patients who have brain cancer is increasing with respect to the aging population, is a worldwide health problem. The main purpose of our project is to develop a method to detect the brain tissues which are affected by cancer especially for grade-4 tumor, Glioblastoma Multiforme (GBM). GBM is one of the most malignant cancerous brain tumors as they are fast growing and more likely to spread to other parts of the brain.

Brain Cancer identification is really a challenging task in early stages of life. Now-a-days, issue of brain cancer identification is of great interest. In order to detect the brain cancer of a patient, we consider the data of patients like MRI images of a Patient's Brain. Here our problem is to identify whether the cancer is present in Patient's or not. It is very important to detect the cancer at starting level for healthy life of a patient. This allows us to use various image processing techniques to arrive at the best result that can help us to detect brain cancers in their early stages.

### 1.INTRODUCTION

In recent times, the introduction of information technology and e-health care system in the medical field helps clinical experts to provide better health care to the patient. The tumor is an uncontrolled growth of cancerous cells in any part of the body, whereas a brain tumor is an uncontrolled growth of cancerous cells in the brain. A brain tumor can be benign or

malignant. The benign brain tumor has uniformity in structure and does not contain active (cancer) cells, whereas malignant brain tumors have a non-uniformity (heterogeneous) structure and contain active cells. Gliomas and meningiomas are examples of low-grade tumors, classified as benign tumors and glioblastoma and astrocytoma are a class of high-grade tumors, classified as

## CHAUFFEUR

Dr. M.Mohan Rao<sup>1</sup>, Sreedhar Rithanya<sup>2</sup>, Nukala Kavyasri<sup>3</sup>, Rudrapati Ajay Satya Sahit<sup>4</sup>,  
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### ABSTRACT:

‘**Chauffeur**’ is an online driving booking application. It was built to hire an unemployed person to drive a private or hired car through mobile to avoid road accidents. Background check is done for every driver before approving their application into the app. Any negative traffic reviews or bad performances on the driver in the past will be considered strictly and never let the driver to be employed. The main benefit of this application is to provide employment opportunities to several people, to reduce drunk and drive, rash driving accidents, mostly suitable to people who don't know how to drive. All the drivers will follow the safety measures and maintains social distance from the client while driving the vehicle.

### 1. INTRODUCTION

‘**Chauffeur**’ is an online driving booking application. It was build to hire an unemployed person to drive a private or hired car through mobile to avoid road accidents. Background check is done for every driver before approving their application into the app. Any negative traffic reviews or bad performances on the driver in the past will be considered strictly and never let the driver to be employed. The main benefit of this application is to provide employment opportunities to several people, to reduce drunk and drive, rash driving accidents, mostly suitable to people who don't know how to drive.

All the drivers will follow the safety measures and maintains social distance from the client while driving the vehicle. The project is categorised into two sides. The Front-end side and the Back-end side. The proposed system not only overcome the loopholes of the existing system but also provides additional features. The system consists of students' registration of new users, Login to the

portal, Book-ing of a driver, Status of their booking, User profile settings, List of previous booking history, Online payment mode, Location access. The main objective of the application is to reduce the accidents rate along with increasing employability rate. The drivers who have good track record in the field of driving are eligible. All the details of drivers, user booking history, transactions are stored in the databases and can have an easy access using RestClient API service, which makes the app work more efficiently. This software is very flexible and easy to use.

### 2. REATED WORK

#### Existing Systems

In the existing system, we only have online cab booking services but not to hire a driver for your owned vehicle. This leads to several road accidents as there are many people who don't know how to drive, doesn't having any kind of driving licences, rash driving, driving while drunk, minor aged people can cause disasters. To eradicate these type of issues we had developed this specific application

## CLIENT BASED ONLINE REVIEWSYSTEM

Mr. Pavuluri.Chakradhar<sup>1</sup>, Akella Ratna Sri Pravallika<sup>2</sup>, Mahamkali Geethika<sup>3</sup>, Neerukattu Divya<sup>4</sup>, Gottapu Kurmaya Vardhan<sup>5</sup>

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### ABSTRACT

One of the broadly identified advertising marketing principles is that retaining customers is more profitable than winning capability customers. Consequently, the manner to maintain current clients and enhance their repeat purchases is an crucial consideration for practitioners to benefit profits. The reason of this look at is to research factors influencing customer revisit aim to eating places via studying on line opinions. We used regression evaluation to analyze quantitative rankings of eating place opinions collected from an internet life community in India, and observed that meals remarkable, charge and price, company satisfactory, and atmosphere are the antecedents of eating place purchaser's revisit motive. We decided that meals awesome, rate and fee have four symptoms while issuer excellent and surroundings have indicators. The consequences are beneficial for restaurant operators to require effective actions to draw in greater customers to revisit.

### 1. INTRODUCTION

OVERVIEW There are many users who purchase products through Ecommerce websites. Through online shopping many E-commerce enterprises were unable to know whether the customers are satisfied by the services provided by the firm. Naturally, the important marketing principle is to retaining the customer's/client's and increase their purchases. The manner to maintain the current client is the main consideration and also business practitioners think that how to enhance their purchases. So, what factors made the customer's revisit? Also, how the practitioners will influence the customers?

The factors has the customer's revisit is

- Quality of food or Awesome food,
- Attractive surroundings,
- The charge and prices,
- Company(hotel) satisfactory and
- The beautiful atmosphere.

These factors will also influence the customer's revisit whenever the customer feels that he was satisfied, he gives positive response to that particular restaurant/hotel or any e-commerce site. By giving the positive review, that

particular business/hotel/e-commerce site feels happy and they were trying to improve their purchases. By seeing that positive response, people will start visiting and start purchasing. In this way business will get more profitable. If suppose, customer/client was not satisfied, he gives the negative review. By giving the negative review people will get some bad or negative impression on the particular restaurant or hotel. It impacts on the profits of the restaurant or hotel. In this way, the profits for the particular sites will be reduced slowly.

General scenario is whenever the people start purchasing the product, first they would like to check rating, reviews whether it is positive or negative. By considering the review and rating, people/customer will decide to purchase or not.

### EXISTING SYSTEM

The comments given by user for a product is taken into account positive at one situation and negative at other situation. Some people don't express opinions in the same way. Most reviews will have both positive and negative comments. Sometimes people may give fake

## DEEP LEARNING AND CNN BASED PLANT LEAF DISEASE DETECTION

Mr.O.Shiv Bhagawan<sup>1</sup>, Jujjuvarapu Tejaswini<sup>2</sup>, Mandalapu Reethika<sup>3</sup>, Narra Venkata Chandu<sup>4</sup>, Kesari Naga Ramya<sup>5</sup>

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### ABSTRACT:

The latest generation of convolutional neural networks (CNNs) has achieved impressive results in the field of image classification. This project is concerned with a new approach to the development of plant disease recognition model, based on leaf image classification, by the use of deep convolutional networks. Novel way of training and the methodology used facilitate a quick and easy system implementation in practice. The developed model is able to recognize 9 different types of plant diseases out of healthy leaves, with the ability to distinguish plant leaves from their surroundings. According to our knowledge, this method for plant disease recognition has been proposed for the first time. All essential steps required for implementing this disease recognition model are fully described throughout the project, starting from gathering images in order to create a database, assessed by agricultural experts. The experimental results on the developed model achieved precision between 91% and 98%, for separate class tests, on average 96.3%.

### 1.INTRODUCTION

When plants and crops are affected by pests it affects the agricultural production of the country. Usually farmers or experts observe the plants with naked eye for detection and identification of disease. But this method can be time processing, expensive and inaccurate. Automatic detection using image processing techniques provide fast and accurate results. This paper is concerned with a new approach to the development of plant disease recognition model, based on leaf image classification, by the use of deep convolutional networks.

Advances in computer vision present an opportunity to expand and enhance the practice of precise plant protection and extend the market of computer vision applications in the field of precision agriculture. Novel way of training and the methodology used facilitate a quick and easy system implementation in practice. All essential steps required for

implementing this disease recognition model are fully described throughout the paper, starting from gathering images in order to create a database, assessed by agricultural experts, a deep learning framework to perform the deep CNN training. This method paper is a new approach in detecting plant diseases using the deep convolutional neural network trained and fine-tuned to fit accurately to the database of a plant's leaves that was gathered independently for diverse plant diseases. The advance and novelty of the developed model lie in its simplicity; healthy leaves and background images are in line with other classes, enabling the model to distinguish between diseased leaves and healthy ones or from the environment by using deep CNN.

### 2.RELATED WORK:

Existing system:

## CREDIT CARD FRAUD DETECTION USING RANDOM FOREST AND CART ALGORITHM

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### ABSTRACT:

As we know that the usage of credit cards transactions has been increased drastically. With the increase in utilization of credit cards, there is a considerable rise in fraudulent activities too. So, the project is mainly focused on credit card transactions in the real world. The objective of the intruders is to obtain the products/goods without crediting the amount from their accounts or by crediting it from other accounts. Previously there are many unsupervised machine learning techniques like ANN for credit card fraud detection which yields less accuracy. So with the technology advancements, in this project we use the supervised machine learning techniques like Random forest & Cart algorithms in order to increase the accuracy of the model. Accuracy is considered because the performance of the techniques is evaluated based on accuracy, specificity, sensitivity & precision.

### 1. INTRODUCTION

There are various fraudulent activities detection techniques that have been implemented in credit card transactions. They have been kept in researcher minds to develop methods to develop models based on artificial intelligence, data mining, fuzzy logic and machine learning. Credit card fraud detection is significantly difficult, but also a popular problem to solve. In our proposed system we built the credit card fraud detection using Machine learning. With the advancement of machine learning techniques, Machine learning has been identified as a successful measure for fraud detection. A large amount of data is transferred during online transaction processes, resulting in a binary result: genuine or fraudulent. Within the sample fraudulent datasets, features are constructed. These are data points namely the age and value of the customer account, as well as the origin of the credit card. There are hundreds of features and each

contributes, to varying extents, towards the fraud probability.

In existing system, a research about a case study involving credit card fraud detection, where data normalization is applied before Cluster Analysis and with results obtained from the use of Cluster Analysis and Artificial Neural Networks on fraud detection has shown that by clustering attributes neuronal inputs can be minimized. And promising results can be obtained by using normalized data and data should be MLP trained. This research was based on unsupervised learning. Significance of this paper was to find new methods for fraud detection

and to increase the accuracy of results. The data set for this paper is based on real life transactional data by a large European company and personal details in data is kept confidential. Accuracy of an algorithm is around 50%. Significance of this paper was to find an algorithm and to reduce the cost measure. The result obtained was by 23% and the algorithm

## DIGITAL EXAMINATION SET-UP

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### ABSTRACT

The system entitled "DIGITAL EXAMINATION SET-UP" is mainly used to solve various problems regarding examination preparation and implementation, faced by the students, teachers during COVID19. The main aim of this project is to develop a system through which students can take their objective exams online. With this system, we have implemented the mock preparations for the placement trainings. As we all know, COVID19 scenario has taken a toll upon the education sector too, especially in conducting exams, which is one of the main reasons why the graduation dates are sliding away. Taking this as a challenge, we are implementing this project that provides users with the specialized set of questions upon each course that are designed by our expert teachers. Once the exam is taken by the students, the system evaluates the responses and generates the result automatically. Our expert teachers monitor the results, and send the necessary course pdfs to the poorly performed students to improve their performances. So, our system helps the students to develop skills, and make them ready to take online examinations with the same enthusiasm with which they take the offline exams. This project is our team's step forward contribution towards Digital India

### 1. INTRODUCTION

#### 1.1 PROJECT OVERVIEW

Digital Examination Set-up is a web application developed to automate the objective examination take-up digitally in this new normal. Like we discussed in the abstract, we are implementing this project that provides users with the specialized set of questions upon each course that are designed by our expert teachers. Once the exam is taken by the students, the system evaluates the responses and generates the result automatically. Our expert teachers monitor the results, and send the necessary course pdfs to the poorly performed students to improve their performances.

This whole project is divided into three modules. This system consists of students' accessing various courses, giving exams with questions that are specially designed by our expert faculty who maintains the challenging environment around the system. The expert teachers are hired by our admins who will go for a thorough background check about the teacher before hiring him/her to maintain the quality, as we consider the faculty to be the backbone

of our system. Faculty constantly keep a check on students' performance, and help them in improving their skill by sharing the needed knowledge sources. The data of the users of the system are well protected for personal use/as well as per institutional use and makes the processing very fast.

This software is very flexible and easy to use and is designed for Institutional purposes. This web application contains Login page for the superuser, and registration and login forms for users (student, faculty). Admin manages the users.

#### 1.2 EXISTING SYSTEM

In most of the existing systems available in the market today, are automatically evaluated. But there is no such system that constantly monitors the student's performance on the subject, and help him/her in increasing his/her skill, performance by sharing some knowledge sources. If evaluation and monitoring is the game, the available systems take time to release the result and help the student. In addition, if any proper guidance is needed, one need to pay bucks to access

## DROWSINESS DETECTON SYSTEM

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Ramachandra College of Engineering, A.P., India

### ABSTRACT:

Drowsiness of the driver's is main cause of accidents in the world. Due to lack of sleep and tiredness, drowsiness can occur while driving. The best way to avoid accidents caused by driver's drowsiness is to detect drowsiness of the driver and warn him before fall into sleep. For this we proposed this "**Drowsiness Detection System**" in this we find out whenever the driver feels sleepy and alert him/her with an alarm. To detect drowsiness we used facial feature recognition technique using Machine Learning and Deep Learning. Here we have a score card to understand how sleepy the driver got. Initially the score is in zero(0) position. If the driver got unconscious/close his eyes the score increases and alert him with an alarm. When he open his eyes score decreases automatically. Therefore, we rapidly decrease the rate of accidents with the help of our project.

### 1. INTRODUCTION

While Driving during night times or may on drunk and drive and in some other instances there are high chances to met with an accident. We can also find that the main cause of accidents was due to driver's fatigue. The driver's drowsiness may put the life of driver and sometimes other's life in risk. Hence to avoid this we found a way to identify the state of driver and we can warn him to take some rest. And hence can reduce the rate of accidents as well as deaths. Our 'Drowsiness Detection System' will find the driver's state so can help to reduce the accidents that cause mostly due to drowsiness of the driver due to overtime, lack of sleep, tiredness if the driver.

We can find the Drowsiness of a driver in various ways by eye blinking rate, eye's open/close status, yawning, tiredness of driver from drivers face, facial features.

Here we take eye's open/close status to find the drowsiness of driver.

Here in our project we find the eye's open or close statues of the driver by monitoring his face with cam. And if he closes eye's our score increases and open's decreases the score. When ever the score reaches some point we can find the driver's active status.

While monitoring the driver we track the eyes from the region of intrest and find the position of them with the help of our model.

Hence we connect our model to a system which monitors the driver and find face and eyes of the driver and our model predicts the status of the eyes and reports to system and if they are close our system warns the driver and alerts him. If they are open it continuous to take input. And our model and our system both combined to form the drowsiness detection system.

### 2. REATED WORK

## E-COMMERCE WEBSITE USING WORDPRESS

Mr.G.Hari Hara Kumar<sup>1</sup>, Guntupalli Venkata Naga Lavanya<sup>2</sup>, Kankipati Kautilya<sup>3</sup>, Muni Bhaskar<sup>4</sup>, Pusapati Sravani<sup>5</sup>

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### ABSTRACT

E-commerce is the process of selling and buying goods through the internet. Businesses have seen the benefits of using the internet to increment the number of customers and at the same time reduce their operations expenses. Therefore, IT companies are developing e-commerce platforms that can be used by any kind of business, from entrepreneurs to big companies. Content Management Systems are programs that allow the users create and update their websites without requiring strong programming skills. Some content management systems, such as WordPress, have increased their functionalities in order to allow their users create e-commerce site. The aim of this thesis was to create the e-commerce site BrownBoyGraphics. BrownBoyGraphics is an online sticker store that will sell various products that are included in our sticker store. Thus, it was required to create a site which handles online payments and multilingual content. The thesis report includes the theoretical information about e-commerce, content management systems and it describes the development process of the e-commerce site. The result of this thesis was a responsive e-commerce site. Although the site was not tested in physical devices, it was tested through a website that simulates the screen of different devices.

### 1. INTRODUCTION

#### 1.1 Overview

What is WORDPRESS? WordPress started in 2003 when Mike Little and Matt Mullenweg created a fork of b2/cafeblog. The need for an elegant, well-architected personal publishing system was clear even then. Today, WordPress is built on PHP and MySQL, and licensed under the GPLv2. It is also the platform of choice for over 42% of all sites across the web. The WordPress open source project has evolved in progressive ways over time — supported by skilled, enthusiastic developers, designers, scientists, bloggers, and more. WordPress provides the opportunity for anyone to create and share, from handcrafted personal anecdotes to world-changing movements. People with a limited tech experience can use it “out of the box”, and more tech-savvy folks can customize it in remarkable ways. Most of content management systems are made of two components, the content management

application (CMA) and the content delivery application (CDA).

The content management application function is to allow the user create, change and remove the content of the site. On the other hand, the content delivery application is in charge of rendering the website with the content introduced by the user.

#### WordPress plugins

A plugin is a program that is installed in WordPress in order to add more functionalities to the site. It can help the users create a slider or even transform their website into an e-commerce site without needing to code it. The programming language used to create a WordPress plugin is PHP, but other languages, like JavaScript, can be used to create more complex plugins. (Wordpress.org 2015c, cited 24.05.2016.) WordPress includes two plugins that are already installed, but it is possible to add more plugins that are developed by the WordPress community.

## EMPLOYEE MANAGEMENT SYSTEM

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### ABSTRACT:

The main conceptual idea of the Employee Management System is based on a JAVA application. It is a distributed application, developed to maintain the details of the employees. It contains employee's information like employee id, name, age, email, location and so on including project details also. This application stores all the employee's information in a database. In prior days managing employee details was entirely based on manual effort and it is a time-consuming process.

The employee Management System has been proposed to overcome such problems. This helps to store Employee data and access the data whenever required for higher authorities.

### 1.INTRODUCTION

Generally, data mining (sometimes called data or knowledge discovery) is the process of analyzing data from different perspectives and summarizing it into useful information - information that can be used to increase revenue, cuts costs, or both. Data mining software is one of a number of analytical tools for analyzing data. It allows users to analyze data from many different dimensions or angles, categorize it, and summarize the relationships identified. Technically, data mining is the process of finding correlations or patterns among dozens of fields in large relational databases.

While large-scale information technology has been evolving separate transaction and analytical systems, data mining provides the link between the two. Data mining software analyzes relationships and patterns in stored transaction data based on open-ended user queries. Several types of analytical software are available: statistical, machine learning, and neural networks. It's one of the most effective services that are available today. With the help of data mining, one can discover precious information about the customers

and their behavior for a specific set of products and evaluate and analyze, store, mine and load data related to them. An analytical CRM model and strategic business related decisions can be made with the help of data mining as it helps in providing a complete synopsis of customers.

An endless number of organizations have installed data mining projects and it has helped them see their own companies make an unprecedented improvement in their marketing strategies (Campaigns). Data mining is generally used by organizations with a solid customer focus. For its flexible nature as far as applicability is concerned is being used vehemently in applications to foresee crucial data including industry analysis and consumer buying behaviours. Fast paced and prompt access to data along with economic processing techniques have made data mining one of the most suitable services that a company seeks.

### 2.RELATED WORK

By using Data mining, we created an application Employee Management System. In our application we included login pages for both employee and admin.

## EMAIL SYSTEM FOR BLINDS THROUGH VOICE BASE

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### ABSTRACT:

In today's world communication has become so easy due to integration of communication technologies with internet. However the visually challenged people find it very difficult to utilize this technology because of the fact that using them requires visual perception. Even though many new advancements have been implemented to help them use the computers efficiently no naïve user who is visually challenged can use this technology as efficiently as a normal naïve user can do that is unlike normal users they require some practice for using the available technologies. This paper aims at developing an email system that will help even a naïve visually impaired person to use the services for communication without previous training. The system will not let the user make use of keyboard instead will work only on mouse operation and speech conversion to text.

### 1.INTRODUCTION

The project is a python-based application for visually impaired persons using speech to text voice response, thus enabling everyone to control their mail accounts using their voice only and to be able to send, Read, Exit. The system will prompt the user with voice commands to perform certain action and the user will respond to the same. The main benefit of this system is that the use of mouse is completely eliminated, the user will have to respond through voice only. Internet is considered as the most important means of information and has become factor methods used in communication. Email is one of the most common form of communication. However,

It is completely useless for visually impaired and illiterate people. Currently available systems like screen readers TTS (Text-To-Speech) And ASR (Automatic Speech Recognition) does not provide full efficiency to the blind people to use internet. As nearly 285 million people worldwide are visually impaired so it is necessary to make internet facilities for communication usable for them. This paper deals with "Voice Based System in

Desktop and Mobile Devices for Blind People". Voice mail architecture helps blind people to access e-mail and other multimedia functions of operating system (songs, text). Also in mobile application SMS can be read by system itself. Now a days the advancement made in computer technology opened platforms for visually impaired people across the world. The improvement and accessibility alone in the field of speech recognition are worth considerable. It allows the physically and the elderly and visually challenged people to collaborate with state of the art products and services quickly and naturally no graphical user interface is needed. If you want to use speech recognition or simply convert speech to text in your python it is very easy to use.

### 2.RELATED WORK

#### Interactive voice response(IVR)

Voice Response(IVR) Interactive voice response (IVR) is a technology that allows a computer to interact with humans through the use of voice and DTMF tones input via a keypad. In telecommunications, IVR allows customers to interact with a company's host system via a keypad or by speech recognition, after which services

## FACE MASK DETECTION USING MACHINE LEARNING

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### ABSTRACT

The purpose of the project “Face Mask Detection Using Machine Learning” is to create a tool that identifies the image of a human that can calculate the probability that he/she wearing a mask or not. Due to COVID, wearing a face mask is must in order to stay safe. As the country starts going through various stages of reopening, face masks have become an important element of our daily lives to stay safe. Wearing face masks will be required in order to socialize or conduct business. So, this application utilizes a camera to detect if a person is wearing a mask or not.

### 1. INTRODUCTION

#### 1.1 OBJECTIVE:

The year 2020 has shown mankind some mindboggling series of events amongst which the COVID19 pandemic is the most life- changing event which has startled the world since the year began. Affecting the health and lives of masses, COVID19 has called for strict measures to be followed in order to prevent the spread of disease. From the very basic hygiene standards to the treatments in the hospitals, people are doing all they can for their own and the society's safety; face masks are one of the personal protective equipment. People wear face masks once they step out of their homes and authorities strictly ensure that people are wearing face masks while they are in groups and public places.

To monitor that people are following this basic safety principle, a strategy should be developed. A face mask detector system can be implemented to check this. Face mask detection means to identify whether a person is wearing a mask or not. The first step to recognize the presence of a mask on the face is to detect the face, which makes the strategy divided into two parts: to detect faces and to detect masks on those faces. Face detection is one of the applications of object detection and can be used in many areas like security, biometrics, law enforcement and more.

There are many detector systems developed around the world and being implemented. However, all this science needs optimization; a better, more precise detector, because the world cannot afford any more increase in corona cases.

### 2. SYSTEM ANALYSIS

#### 2.1 Introduction

The trend of wearing face masks in public is rising due to the COVID- 19 corona virus epidemic all over the world. Before Covid-19, People used to wear masks to protect their health from air pollution. While other people are self-conscious about their looks, they hide their emotions in the public to hide their faces.

More than five million cases were infected by COVID- 19 in less than 6 months across 188 countries. The virus spreads through close contact and in crowded and overcrowded areas. We can tackle and predict new diseases by the help of new Technologies such as artificial intelligence, Iot, Big data, and Machine learning.

People are forced by laws to wear face masks in public in many countries. These rules and laws were developed as an action to the exponential growth in cases and deaths in many areas. However, the process of monitoring large groups of people is becoming more difficult in public

## FARMER BUDDY

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### ABSTRACT

Farmers Buddy is implemented on a pure Java2EE architecture with Oracle database. It is a web based open discussion portal providing information and solutions about crops, fertilizers, soil and climate to small farmers and agricultural students. The portal provides soil analysis for various regions and suggestions based on the soil condition and climate. It explores questions such as: "which fertilizers to use where and in what quantity", "which crop, vegetable, or herb should be grown where and in which season" etc. Additionally, farmers buddy helps farmers and agricultural students in making decisions on the current market and best prices crops and herbs. It also features training and online query handling for all users. Training can be request by students and general public. Similarly, queries can post on the portal via mails. Queries can be forwarded to a particular officer

### 1. Introduction

#### 1.1 About Project

This is a web based project which is useful for farmers and agricultural students. This is an open discussion portal providing solutions to small farmers and agricultural students. It also provides soil analysis for all regions and suggestions on which fertilizers to use where and how much? And which crop, herb or vegetable to be grown where and in which season? It also helps to make decisions on market and best prices. Information about major crop markets and their current price for the crop will be published daily. NGO's are trying to spread messages to make agriculture more eco-friendly through this site. This also includes training scheduled by agricultural officers. Training is requested by students, general public. Training provides information about crops, fertilizers, and market details that are requested. Online query handlings for all users. Queries can be posted by students, general public through mails. Queries can be directed to a particular officer. Information pages should be dynamic so that agricultural officers and administrator can change it.

### 2. PROJECT ANALYSIS

#### 2.1 Purpose of the Project

It is an open discussion portal used for agricultural students and farmers. Any general public can use this system for knowing the information about various crops, and the usage of fertilizers to those crops and in which soil these crops give more yield and the climatic conditions for those crops. Training is requested by the students, general public. These trainings are scheduled by agricultural officer. Information about major crop markets and their current price for the crop will be published daily. Current prices of the markets are updated daily by the NGO. It gives information regarding all the states in India.

#### 2.2 Existing System

Complexity in managing the data related to the agriculture products, soils, fertilizers, mandi/market details.

##### 2.2.1 Problems in existing system

- Lack of security.
- This system does not provide category wise classifications of products.
- Inefficiency in querying details.
- Periodic Report generation takes lot of time.

#### 2.3 Proposed system

## FAKE NEWS DETECTION USING MACHINE LEARNING NLP

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### ABSTRACT

Fake news is one of the biggest issues in the current trend of the internet and social media. Fake news is misleading people by spreading news from the non-reputable sources. To stop spread of the fake news to some extent a (Natural Language Processing) NLP and Machine Learning based web application is used for detecting fake news. Detecting the fake news is a classic text classification problem. The data is collected from the Kaggle data sets, after that pre-processing is done. And, for the classification purpose Multinomial Naive Bayes classifier is used and TF-IDF Vectorizer is used from which a model is built that can differentiate “Real” news and “Fake” news based on training set and test set. And accuracy from the test data set is almost 95.71%. Technologies used are HTML, Bootstrap, Django, and some of the machine Learning libraries from Python.

### Introduction

As the Internet continues to grow in size and importance, the quantity and impact of online reviews is increasing continuously. Reviews can influence people across a wide range of industries, but they are particularly important in e-commerce, where comments and reviews on products and services are often the most convenient, if not the only, way for a buyer to decide whether to buy them. Online reviews can be generated for a variety of reasons. Online retailers and service providers may often ask their customers to provide feedback on their experience with the products or services they have purchased in order to improve and enhance their businesses. Customers may also feel inclined to review a product or service if they had an exceptionally good or bad experience with it. While online reviews can be helpful, blind trust of these reviews is dangerous for both the seller and buyer. Many look at online reviews before placing any online order; however, the reviews may be poisoned or faked for profit or gain, thus any decision based on online reviews must be made cautiously. Furthermore,

business owners might give incentives to whoever writes good reviews about their merchandise or might pay Someone write bad reviews of the products or services of their competitor. These fake reviews are considered spam review and due to the importance of reviews can have a great impact on the online marketplace. Someone to write bad reviews about their competitor’s products or services. As review spam is a pervasive and harmful issue, it is an important but challenging issue to develop methods to help businesses and consumers distinguish true reviews from fake ones. It’s not only the case related to e-commerce online reviews there is fake news that is leading people to wrong paths and wrong perceptions because of which people may loose trust in internet in upcoming years.

### Existing System

Initially context related n-grams and shallow parts-of-speech tagging has been used for classification tasks. Later, Deep Syntax analysis using Probabilistic Context Free Grammars (PCFG) have used in combination with n-gram methods. An N-gram is a

## HEART DISEASE PREDICTION USING NEURAL NETWORKS

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### ABSTRACT

The heart is very important part of human body which pumps blood into the entire body. If circulation of blood in body is inefficient the organs like brain suffer and if heart stops working death occurs within minutes. The term Heart disease refers to disease of heart & blood vessel system within it. To predict the presence or absence of heart disease in human body using machine learning techniques on data set provided by using sequential model. The Main idea of this project is to predict whether the patient suffers from heart disease or not. And also predicting the risk of heart disease that is patient it is at high risk or low risk. The user enters the appropriate input values from his/her health report. After this, the historical dataset is uploaded and then transform the uploaded data into structured data with the help of a data cleaning and data imputation process. Then the neural network model is implemented on the input values and on the bases of this heart disease is predicted. By using the neural network model, we increase the prediction heart disease with more accuracy than existing system and in this we adding some new attributes in data set like whether the patient smokes or not and if the patient have obesity or not which helps in increasing the accuracy of the project.

### INTRODUCTION

We know that Heart is the important part of our body. Life is itself dependent on efficient working of heart. It is a world known fact that heart is the most essential organ in human body if that organ gets affected then it also affects the other vital parts of the body. There are many factors which increases risk of Heart disease. Some of them are:

- Family history of heart diseases.
- Smoking. • Cholesterol.
- High blood pressure.
- Obesity.
- Lack of physical exercise.

As World Health Organization has estimated that 12 million deaths occur worldwide, every year due to the Heart diseases. In 2008, 17.3

million people died due to Heart Disease. Over 80% of deaths in world are because of Heart disease. WHO estimated by 2030, almost 23.6 million people will die due to Heart disease Predication should to be done to reduce risk of Heart disease. Diagnosis is usually based on signs, symptoms and physical examination of a patient. As all the doctors are predicting heart disease by learning and their experience. The diagnosis of disease is a difficult task in medical field. Predicting Heart disease from various symptoms is a big issue which may lead to unpredictable effects. Healthcare industry generates large amounts of complex data about patients, disease diagnosis, electronic patient records etc. This large amount of data to be processed and analyzed for knowledge extraction that enables for cost-savings and decision making. Only human intelligence alone is not enough for proper diagnosis. As we are facing many difficulties, to improve the accuracy of diagnosis and to

## HIGH RESOLUTION DOCUMENT IMAGE CONSTRUCTION FROM VIDEO USING MACHINE LEARNING

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### ABSTRACT:

Today, smartphones with high-quality built-in cameras are very common. People prefer to take pictures from documents with smartphones instead of scanning them with a scanner. Due to the limitation of scanners input size, it is difficult to scan everything with them. Resolution and quality of smartphone cameras are not enough to take a picture from large documents like posters. The documents scanned by mobile phones may not be that accurate. In this project, we propose a pipeline to make a high-resolution image of a document from its captured video. We suppose that during the record of the video, the camera was moved slowly all over the surface of the document from a close distance. In this method we find the location of each frame in the document and we use a sharpness criterion to select the highest possible quality for each region of the document among all available frames. We evaluate our method on the SmartDoc Video dataset and report the promising results.

### 1.INTRODUCTION

imagery is captured by an array of smaller sensors sharing an optical center, instead of one large sensor. It is desirable to generate a single image (mosaic) from the sensor array, since it simplifies higher level vision tasks. It is important that the mosaic be of high quality, without noticeable seams, and be estimated efficiently for every frame of the video. They proposed a piecewise affine model to handle image distortions not captured by a homograph.

Capturing aerial imagery at high resolutions often leads to very low frame rate video streams, well under full motion video standards, due to bandwidth, storage, and cost constraints. Low frame rates make registration difficult when an aircraft is moving at high speeds or when global positioning system (GPS) contains large errors or it fails. We present a method that takes advantage of 2 persistent cyclic video data collections to perform an online registration with drift

correction. The data we consider in this paper has circular motion camera trajectories. They perform global alignment using only the imagery itself since it is possible for GPS/INS to fail and since some areas may not have accurate or existing 3D DEM's. They also propose a method to combine long video sequences into multi-view stereo panoramas using a layering approach.

### 2.RELATED WORK

#### Existing System

Image mosaicking approaches this problem by aligning high-quality pictures of various parts of the scene, and then, stitching those partial images in a seamless manner. It is applicable in numerous areas such as aerial imaging, where aerial vehicles scan the earth's surface by taking various images and it is required to integrate these images into a single map [1], [2]. Panorama image creation [3], mosaic of endoscopy videos [4], and stitching microscopic images [5] are other

## **HYPERSPECTRAL IMAGE CLASSIFICATION USING MACHINE LEARNING**

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### **ABSTRACT:**

Hyperspectral image (HSI) classification is a phenomenal mechanism to analyze diversified land cover in remotely sensed hyperspectral images. Remote sensing technology is improving day by day which has also increased the uses of hyperspectral imaging tremendously. Exact classification of ground features from hyperspectral images is an important and a popular research area and also has attracted widespread attention. In our research, a brief description among different classification models i.e., SVM, with PCA, has been described. The study has been carried upon one common hyperspectral datasets i.e., Indian Pines which comprise various landscape fields like dense vegetation, barren land, grasslands, etc. For noisy band reduction, PCA has been used.

### **1. INTRODUCTION**

Imaging is a good way to work with materials, identify them and to define their properties is to study how light interacts with them. Spectroscopy is a study that examines how light behaves in the target & recognizes materials based on their different spectral Signatures. A human eye can see electromagnetic waves with wavelengths between 380 and 780 nanometers. Wavelengths beyond this range such as Infrared are invisible to humans and also human has 3 color receptors red, blue and green but Hyperspectral Imaging is a new analytical technique based on spectroscopy that measures the continuous spectrum of the light for each pixel of the scene with fine wavelength resolution, not only in the visible but also in the near infrared. Hyperspectral imaging (HSI) is a method for capturing images that contain information from a broader portion of the electromagnetic spectrum. This portion can start with UV light, extend through the visible spectrum, and end in the near or short-wave infrared. This extended

wavelength range can reveal properties of material composition that are not otherwise apparent. Hyperspectral Image (HSI) classification is a phenomenal mechanism to analyse diversified land cover in remotely sensed hyperspectral images. Remote sensing technology is improving day by day which has also increased the uses of hyperspectral imaging tremendously. Exact classification of ground features from hyperspectral images is an important and a popular research area and also have attracted a widespread of attention. A good classification results are achieved by many methods for the classification of hyperspectral

Imaging. Purpose Hyperspectral imaging, like other spectral imaging, collects and processes information from across the electromagnetic spectrum. The goal of hyperspectral imaging is to obtain the spectrum for each pixel in the image of a scene, with the purpose of finding objects, identifying materials, or detecting processes. Hyperspectral imaging (HSI) integrates conventional imaging and spectroscopy, to obtain both spatial and spectral information from a specimen. This

## IMAGE BASED DEEP LEARNING FOR COVID-19 DIAGNOSIS

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### ABSTRACT:

Covid-19 is a rapidly spreading viral disease that infects not only humans but animals are also infected because of this disease. A clinical study of COVID-19 infected patients has shown that these types of patients are mostly infected from a lung infection after coming in contact with this disease. Chest x-ray (i.e., radiography) is the most effective imaging technique for diagnosing lung-related problems. Health industry following the manual process for diagnosing. So, we developed this project to bring the latest trend of technology into the diagnosis of medical sciences. Deep learning is the most successful technique of machine learning, which provides useful analysis to study a large amount of chest x-ray images that can critically impact on screening of Covid-19. In this work, we have taken the PA view of chest x-ray scans for covid-19 affected patients as well as healthy patients. After cleaning up the images and applying data augmentation, we have used deep learning based CNN models and compared their performance.

### 1. INTRODUCTION

The main aim of the project is to train and build a model that can be efficiently used for classifying covid-19 images from non covid-19 images and extend the model for medical image classification based on deep learning. Hence “covid-19 diagnosis using image based deep learning” is designed to meet the needs of health industry and implemented developed to enhance the entire process of extracting patterns and learning relationships in this kind of ‘unstructured’ data. Other aims include reducing the human interaction and time.

The application of deep learning in the field of COVID-19 image processing reduces false-positive and negative errors in the detection and diagnosis of this disease and offers a unique opportunity to provide fast, cheap, and safe diagnostic services to patients.

There is a much need of the system entitled “covid-19 diagnosis using image based deep learning”. The alternative to an automated diagnosis system would be to have an expert clinician look at your data (perhaps discuss it with fellow experts) to determine the outcome. Every time clinician observes the reports and gives a manual report to doctors for the future treatment. This process involves time and effort.

The health care industry is one of the largest industries in the world, and it has a direct effect on the quality of life of people in each country. Health care is the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments in humans.

Deep learning is an Artificial Intelligence (AI) function that imitates the working of the human brain in processing data and creating patterns for use in decision making. Deep learning is a subset of machine learning in Artificial Intelligence that has networks capable of learning

## MACHINE LEARNING ALGORITHMS IN AGRICULTURE AND APPLICATIONS

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### ABSTRACT:

Machine Learning(ML) makes machines independent and self-learning component. Researchers applying machine learning algorithms to solve various real world problems in various domains. Nowadays agriculture affects by various factors such as global warming, climatic changes, lack of manpower, etc. To help the farmers from the above factors and increase agriculture production, recently many machine learning techniques are utilized in the agricultural field. In this paper, we studied different applications of machine learning techniques in the agriculture domain. We classified applications of machine learning algorithms in agriculture by four categories namely, machine learning in plant monitoring, machine learning in soil analysis, machine learning in detection (or) prediction process in agriculture, machine learning in animal monitoring. We also analyzed the important features of machine learning applications in agriculture.

### 1.INTRODUCTION:

Agriculture is one of the ancient businesses. Agriculture suffers due to various factors such as climatic change, unpredictable rainfall, pollution, lack of manpower, etc. Due to high population growth create a great demand for agriculture products [1]. To feed the world population, it is necessary to increase agriculture production. To increase agriculture production, researchers utilizing various technologies such as sensor networks [2], image processing [3], remote sensing [4], machine learning [6], etc. Machine learning is a fast growing technique, which makes machines are intelligent also machines able to work without any instructions. The machine learning techniques are applied in various applications such as health care, smart cities, health care, automobile, etc [5]. Now a day's various machine learning algorithms are used in agriculture to solve various issues. In this paper, we studied applications of machine learning in agriculture field. The machine learning algorithms are used in various real-world agricultural applications; we classified

these applications as machine learning in-plant monitoring, machine learning in soil analysis, machine learning in detection (or) prediction process in agriculture, machine learning in animal monitoring. The various agricultural applications of machine learning techniques are discussed in next section. The field of agriculture suffered due to various challenges, such as lack of water, excess rain, soil pollution due to plastics, synthetic fertilizer, etc. To help the farmers from these issues,

researchers applying machine learning in different fields of agriculture. The machine learning algorithms are mainly applied in the following four areas of agriculture such as plant monitoring, soil analysis, prediction (or) detection in the agricultural process, animal monitoring..

### 2.RELATED WORK

Using Internet of Things (IOT) and data analytics in agriculture. By this technology implementation they need the hardware for the prediction. Without hardware they can predict the agriculture analysis. The Main objective is to predict

## IMAGE RECOGNITION USING PYTHON IN AWS CLOUD

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### ABSTRACT

Responsiveness and scalability are important quality-of-service attributes for any Web applications. While performing image classifications online. Web sites that are slow, either because of poor responsiveness or lack of scalability, can produce user dissatisfaction by slow image processing, loss of revenue and productivity, and potentially more serious consequences. To avoid these problems, it is important to know whether users will be able to access information in a timely fashion, whether the hardware will be able to handle the incoming load, and whether the system will scale to meet project demand before the system is deployed. Amazon Web Services (AWS) is used to deploy this application and solve these problems. Classification of image is processed using Flask. Application will perform backend predictions using Keras a module of Tensorflow. User will input a Image file by clicking on upload image or by using drag & drop feature implemented by using JavaScript, that input data is processed through Keras to predict the image online Pre- Trained data present in Tensorflow and produces image kind as output in text format.

### 1. INTRODUCTION

#### 1.1 Introduction

Keras is one of the most popular python libraries for Deep Learning. It is the finest choice for Deep Learning models and programs. It is very simple and easy and written in Python. Keras is an API for training different programs. It can run on the top of Theano and TensorFlow. It is a high-level library. Keras was invented to make the Deep Learning task fast and efficient. It is one of the most useful libraries in Deep learning. It provides an effective and convenient way to learn and train Deep Learning models and programs. Keras can execute on GPU and CPU both. It is compatible with Python 2.7 to 3.6 to date and has cross-platform compatibility. Keras supports both recurrent networks and convolutional networks. It also enables the combination of both. It enhances the use of multiple platforms. Keras also supports the use of backends. It is because Keras does not handle low-level computations. So, it makes use of other libraries to do this. Keras focuses on the idea of the model. It enables you to develop deep learning projects with fewer lines of code.

It is a very useful library for Deep Learning. It enables the prototyping tasks of Deep Learning easy and fast. Many developers prefer Keras because it helps to optimize their tasks. It saves time and energy. There are many famous organizations that make use of Keras like Google, Netflix, Uber, Microsoft, Huawei, etc. It has a large adaptation by various industries and research communities. There is around 200,00 user who considers Keras the best platform for Deep Learning. Many of the start-ups working with the model of Machine Learning prefer Keras. Amazon Web Services Automatic Scaling with Elastic load Balancer monitors the applications and automatically adjusts capacity to maintain steady, predictable performance while performing the prediction of image using Python. With AWS Auto scaling, the applications always have the right resources available at the right time.

#### 1.2 Existing System

In earlier days when a simple image needs to be preceded it first need to be trained by similar images in bulk to get identified which gets process slowed down which cause more delay, we have to manually

## ONLINE NOTICE BOARD SYSTEM

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### ABSTRACT:

The system entitled "**Online Notice Board System**" is mainly used to know the updates regarding college. Although it is being shared via what's up or any other social media, but not available all at one place. This web application helps the students to retrieve all the notices and articles directly through their cell phone, laptops and computers. The primary aim of the Online Noticeboard Software project is to create a fully functionally digital noticeboard system which will efficiently handle all tasks. Through this students can login and can see the notices regarding exams, fee events etc., and faculty have a rights to post the notices. Admin have aright to manage the notices and users.

### 1. INTRODUCTION

The notice board is a place where people can read about different announcements such as, attendance, seminars, events or they can share some information regarding any study anomaly. Although notices are being shared through some social media's, it is like mixing one's social life with professional. Keeping this in mind, educational institutes will find this software extremely useful. This application will become an easy interface for both students and the faculty. Following are the problems encountered due to this paper based notices or shared messages in different groups. There is unregulated display of information, difficulty in storage and no efficient reference to the past relevant information being posted. Some people don't have the sufficient time to stand and read from notice board. It is time taking process to post same message or notice in different groups of social media and also searching is difficult to view past notices. If in case

due to storage issues the notices may not be available in mobile. This research is mainly focused on information dissemination within the key locations of a university, so as to create out official and academic operations within a paperless community. The application comprises of the Online Notice Board System(ONBS), touch based interface, separate student and teacher accounts, admin interface and high end animations. The application is aimed to serve administrative and academic protocols, thus making administrative and academic duties easier, flexible and more efficient. The application would cover following aspects: Daily announcements. Separate student and teachers account. Easily communicate with each other by sticking or posting notices. Can like or comment on specific post or notices. Can conduct the events by adding voting poll. Keeps the professional and social life separately. Online Notice Board System is a web application which is engaged in providing up-to-date articles and notices and other information's for all the users and students associated with particular campus. In today's world everything is digitalized and paper is being used less

## SALES PREDICTION USING MACHINE LEARNING TECHNIQUES

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### ABSTRACT:

In this project, we will be creating a model which will help us to predict the sales in future. We will be training the model with 5 different algorithms to see which algorithm will give us the best performance, based on that we will be using the same model for predicting the sales in an organization. For this we would be using several classification algorithms like KNN, SVM, LDA, Logistic Regression, Decision Tree, Naive Bayes etc. model. The dataset will be divided into training set and test set. Using the training set the model will be built and using the test set we will determine the accuracy of the algorithm by applying the test set to the training set.

We will be generating a confusion matrix which will help to determine our results accurately. Using this project several reports will be generated to determine the accuracy of the model.

### 1.INTRODUCTION

Earlier companies used to produce goods without considering the number of sales and demand. For any manufacturer to determine whether to increase or decrease the production of several units, data regarding the demand for products on the market is required. Companies can face losses if they fail to consider these values while competing on the market. Different companies choose specific criteria to determine their demand and sales.

In today's highly competitive environment and ever-changing consumer landscape, accurate and timely forecasting of future revenue, also known as revenue forecasting, or sales forecasting, can offer valuable insight to companies engaged in the manufacture, distribution or retail of goods. Short-term forecasts primarily help with production planning and stock management, while long-term forecasts can deal with business growth and decision-making.

Sales forecasting is particularly important in the industries because of the limited

shelf-life of many of the goods, which leads to a loss of income in both shortage and surplus situations. Too many orders lead to a shortage of products and still too few orders lead to a lack of opportunity.

In this project, we will be creating a model which will help us to predict the sales in future. We will be training the model with 5 different algorithms to see which algorithm will give us the best performance based on that we will be using the same model for predicting the sales in an organisation. For this we would be using several classification algorithms like KNN, SVM, LDA, Logistic Regression,

Decision Tree, Naive Bayes model. The term 'machine learning' is often, incorrectly, interchanged with Artificial Intelligence, but machine learning is actually a subfield/type of AI. Machine learning is also often referred to as predictive analytics, or predictive modelling.

## SIGN LANGUAGE RECOGNITION USING MACHINE LEARNING

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### ABSTRACT:

The only way the speech and hearing impaired (i.e dumb and deaf) people can communicate is by sign language. The main problem of this way of communication is normal people who cannot understand sign language can't communicate with these people or vice versa. Our project aims to bridge the gap between the speech and hearing impaired people and the normal people. Sign Language Recognition by technology is an overlooked concept despite there being a large social group which could benefit by it. There are not many technologies which help in connecting this social group to the rest of the world. Understanding sign language is one of the primary enablers in helping users of sign language communicate with the rest of the society. Image classification and machine learning can be used to help computers recognize sign language, which could then be interpreted by other people. Convolutional neural networks have been employed in this paper to recognize sign language gestures.

### INTRODUCTION

Sign language, as one of the most widely used communication means for hearing-impaired people, is expressed by variations of hand-shapes, body movement, and even facial expression. Since it is difficult to collaboratively exploit the information from hand-shapes and body movement trajectory, sign language recognition is still a very challenging task. This paper proposes an effective recognition model to translate sign language into text or speech in order to help the hearing impaired communicate with normal people through sign language.

Technically speaking, the main challenge of sign language recognition lies in developing descriptors to express hand-shapes and motion trajectory. In particular, hand-shape description involves tracking hand regions in video stream, segmenting hand-shape images from complex

background in each frame and gestures recognition problems. Motion trajectory is also related to tracking of the key points and curve matching. Although lots of research works have been conducted on these two issues for now, it is still hard to obtain satisfying result for SLR due to the variation and occlusion of hands and body joints. Besides, it is a nontrivial issue to integrate the hand-shape features and trajectory features together. To address these difficulties, we develop a CNNs to naturally integrate hand-shapes, trajectory of action and facial expression. Instead of using commonly used color images as input to networks like [1, 2], we take color images, depth images and body skeleton images simultaneously as input which are all provided by Microsoft Kinect.

Kinect is a motion sensor which can provide color stream and depth stream. With the public Windows SDK, the body joint locations can be obtained in real-time as shown in Fig.1. Therefore, we choose Kinect as capture device to record sign

## STUDENT ONLINE FEEDBACK AND REVIEW SYSTEM

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### ABSTRACT

The Student Online Feedback and Review System is a web based system which collects the feedback from every individual student and provides an collective feedback which has been taken by the students. We have developed a feedback system to provide the feedback in an easy and quick manner. The existing system takes more time to get the feedback from the students, thus the online feedback system is implemented. Students will fill online feedback using a standard form provided online. This online feedback system is the perfect place to find feedback evaluated according to the requirements and it is the efficient one to get feedback analysis of students and staffs.

### 1. INTRODUCTION

#### 1.1 Overview

The Online Feedback System is used to manages feedback provided by students. Online Feedback System allows students to select particular subject and respective teacher to give feedback about teacher and subject. A Online Feedback System is an feedback generation system which gives proper feedback to teacher provides the proper feedback to the teachers about their teaching quality on basis of points. In the existing system students requires giving feedback manually. In existing system report generation by analyzing all feedback form is very time consuming. By online feedback system report generation is consumes very less time. In online feedback system student gives feedback for teacher of particular subject for particular period of time may be at month end. Feedback is send to HOD of particular department as well as all departments' feedback to principal. HOD has rights to whether feedback shows to respected teacher or not. After analyzing report HOD or principle conducts the meetings for staff by send mail to them.

### 2. SYSTEM ANALYSIS

#### 2.1 Introduction

Analysis can be defined as breaking up of any whole so as to find out their nature,

function etc. It defines design as to make preliminary sketches of; to sketch a pattern or outline for plan. To plan and carry out especially by artistic arrangement or in a skillful way. System analysis and design can be characterized as a set of techniques and processes, a community of interests, a culture and an intellectual orientation.

The various tasks in the system analysis include the following.

- Understanding application.
- Planning.
- Scheduling.
- Developing candidate solution.
- Performing trade studies.
- Performing cost benefit analysis.
- Recommending alternative solutions.
- Selling of the system.
- Supervising, installing and maintaining the system.

This system manages to the analysis of the report generated by the students. First design the students, Faculty and admin login details in the tables called users. Next, the creation of tables of various categories in Feedback system like give feedback, view feedback, Manage records. This project will helps the feedback form system for the department feasibility report of student due details. This application system will provide flexible report to the faculty.

## SKIN CANCER DETECTION USING MACHINE LEARNING

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### ABSTRACT:

Skin cancer is an alarming disease for mankind. The necessity of early diagnosis of the skin cancer have been increased because of the rapid growth rate of Melanoma skin cancer, its high treatment costs, and death rate. This cancer cells are detected manually and it takes time to cure in most of the cases. This web application proposed an artificial skin cancer detection system using image processing and machine learning method. The features of the affected skin cells are extracted after the segmentation of the dermoscopic images using feature extraction technique. A deep learning based method convolutional neural network classifier is used for

the stratification of the extracted features. An accuracy of 89.5% and the training accuracy of 93.7% have been achieved after applying the publicly available data set.

### 1. INTRODUCTION

Skin cancer is an alarming issue and it must be detected as early as possible. The diagnostic is a manual process that is time consuming as well as expensive. But, today's world science has become advanced by using machine learning and it can be helpful in many ways. Hence, machine learning can make easy for detecting cancerous cells and that is why machine learning specially convolutional neural network is used to detect cancerous cell more quickly, and efficiently.

In this they proposed an efficient system for prescreening of pigmented skin lesions for malignancy using general-purpose digital cameras. These images can be captured by a smartphone or a digital camera. This could be beneficial in different applications, such as computer aided diagnosis and telemedicine applications. It could assist dermatologists, or smartphone users, evaluate risk of suspicious moles. The proposed method

enhances borders and extracts a broad set of dermatologically important features. These discriminative features allow classification of lesions into two groups of melanoma and benign. The algorithm used to

classify the images is ANN(Artificial Neural Networks).they proposed and evaluated six methods for the segmentation of skin lesions in dermoscopic images. This set includes some state of the art techniques which have been successfully used in many medical imaging problems (gradient vector flow (GVF) and the level

set method of Chan et al. (C-LS). It also includes a set of methods developed by the authors which were tailored to this particular application (adaptive thresholding (AT), adaptive snake (AS), EM level set (EM-LS), and fuzzy-based split- and-merge algorithm (FBSM). The segmentation methods were applied to 100 dermoscopic images and evaluated with four

different metrics, using the segmentation result obtained by an experienced

## TRAINING AND PLACEMENT PORTAL

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### ABSTRACT

In present situation, the student doesn't have any clarification of the current drives and upcoming drives for those information students have to meet the TPO officer. Training and Placement Portal (TAPP) application provides the complete details about the current and upcoming drives. It also maintains the details of students those are registered for the drives. The main aim of this project is making easy for the students to know the details of the drives and it also maintains the details of students attended for different training classes. The TAPP is a web based application developed in windows platform for the placement department of the college in order to provide information of different drives. Through this application, we are providing placement details like current drives, upcoming drives and their corresponding registration links and training details to students So, they can easily access the info of training and placements and the details of student like who registered and how many students registered for a particular drive can be access by TPO.

### 1. INTRODUCTION

#### 1.1 Overview

The "Training and Placement Portal (TAPP)" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner. The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Training and Placement Portal (TAPP), as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping.

Thus it will help organization in better utilization of resources. Every organization, whether big or small, has challenges to overcome and managing the information of Job, Applicant, College,

Salary, and Student. Every Training and Placement Portal (TAPP) has different Applicant needs, therefore we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also, for those busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources.

#### 1.2 Features TAPP

- Product and Component based.
- Creating & Changing Issues at ease.
- Query Issue List to any depth.
- Reporting & charting in more comprehensive way.
- User Accounts to control the access and maintain security.
- Simple Status & Resolutions.
- Multi-level Priorities & Severities.
- Targets & Milestones for guiding the programmers.

# Integration of Knowledge Management with Adaptive Performance: An Exploration Role of Organizational Learning in Hindustan Aeronautics Ltd (HAL)

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**Abstract:** The Business scenario today is changing rapidly the business is totally depending upon the customer needs. The days are gone where the customers used to buy the products which are manufactured as per the manufacturer choice. Now the market is totally depending upon the customer needs and with the rapid emerging of technology the business scenario is changing at the speed of a blink. Increasingly firms find themselves, either by design or circumstances, operating in business environment, fraught with unprecedented, unparalleled, unrelenting and largely unpredictable changes. As a result, knowledge management is rapidly being seen as a critical source of sustainable competitive advantage. Maintaining a competitive edge is a constant struggle for both businesses. In the changing environment to retain the competitive advantage, adaptive performance is the means to meet unexpected or changing demands of business scenario. The present study focuses on whether Knowledge Management promotes the adaptive performance and explores the mediating role of Organizational Learning.

**Keywords:** Knowledge Management, Adaptive Performance, Organizational Learning, Competitive Advantage

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## 1. Introduction

We have witnessed the growth of human resource discipline from welfare role to a strategic business partner role. The Human Resource Management has grown in many folds since the date of evolution. Several factors have converged over the last decade to influence the position, importance, and practices of human resource management in organizations [2] These dynamics work on a variety of levels which present significant problems and difficulties for organizational management. With the levels of employment of the most educated workforce increasing, changing demographics of workforce, changing technologies, Human Resource Management has now become the key role for the success of any business.

Change is everywhere and all the time. Along with growth Human Resource management is facing many challenges because of its dynamic nature. There is Quest for improvement of Productivity through Human Resources. The

Potentiality of Human Resources is being utilized for various benefits of the organization. [1] Many HRD interventions from the Employee Selection to Employee separation, has been evolved to make the Organization more profitable. In a world of increased Volatility, Uncertainty, Complexity and Ambiguity (VUCA) Human Resource issues matter more than ever [3] The rapid changes in the business scenario and growth of competition in the market is posing various challenges to Human Resource management. Human Resource management which has started as business function has assumed the role of Business partner and now it is emerging as the strategic business partner. This Strategic Human Resource Management is involving in shaping up the Human Resources to contribute to the business success and in integration of human capital to the business strategy.

### 1.1. Knowledge as Competitive Advantage

In an economy where the only certainty is insecurity, awareness is the only form of sustainable competitive

# PERSPECTIVES OF INTERACTIVE AND DIGITAL MARKETING IN 21<sup>ST</sup> CENTURY

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## Introduction

Most corporations must now “market in a digital world”. The “always on” consumer (and business consumer too) is able, and increasingly likely, to search, enquire, interact, complain, buy and pay through mobile devices. Marketing for most corporations is becoming increasingly interactive and “always on”. Delivering an efficient (for the customer and the company), relevant (personalised) and engaging experience increasingly relies on a deep knowledge of the consumer; who they are, the devices they use to connect to the company and the content they want to see. Modern interactive marketing demands deeper understanding of customers and their behaviour and how they like to interact with the company and the ability to deliver personalised experiences which they find useful and engaging. There are few marketing, sales and service situations where the corporation is not able – at least in principle – to gather the logistic, operational, marketing, sales and service data which tells the corporation whether the customer has been served well or not, and the number of situations where it cannot are diminishing. So long as customers have smartphones, data can be gathered from customer to support all these activities.

Interactive marketing and its associated analytics, particularly real-time high-performance analytics, are opening up new marketing opportunities, leading to improved marketing return on investment, and then identify why so many companies fail to obtain the expected benefits. The value of the social approach has been demonstrated in many markets, e.g. in mobile telephony, although one must not overestimate the power of social media to engage – hence Don Schultz’s warning (Schultz and Peltier, 2013) that much social media advertising engages the already engaged.

This interactivity is not only in marketing, sales and service. The “social business”, deeply connected with its staff and suppliers, knows how to harness its collective knowledge, using social systems such as Salesforce.com’s Chatter and Microsoft’s SharePoint, enabling information once locked into one channel or department to be shared across a company. Logistics and operations flow through a

## Implementation of Machine Learning Techniques for Effective Predictive Analysis in Health Care Management

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### ABSTRACT

The health division has seen a huge transformation subsequent the introduction of latest computer technology & this has led to added medicinal information producing various sectors of research. In recent years, there has been surges in interest in study on assessment sustain appliances in healthcare, for example individuals relating to analysis, forecast, behavior forecast, and so on. This progress is due to increased data availability, breakthroughs in artificial intelligence and machine learning research, and contact to computational assets. Data Mining and Predictive Analysis are being used by a number of healthcare organizations. Predictive analysis utilizes assortment of statistical procedures as well as representation, machine learning & data mining to approximate the future by breaking into past and current realism. Appropriate to the information ambitious environment of machine learning algorithms, artificial intelligence trends has achieved its full prospective when back up by large information positions. Our study examines the implications of current breakthroughs in information analytics and how these will be used to the healthcare industry, with a focus on analytical & prophecy applications.

**KEY WORDS:** PREDICTIVE ANALYTICS, HEALTHCARE, MACHINE LEARNING, LEARNING ALGORITHMS.

### INTRODUCTION

During rising national healthcare costs, healthcare companies need relationships dynamically to discover ways to lower costs without jeopardizing patient results. One of the strategies to achieve these goals is by focusing

on patients who are likely to be readmitted to treatment, given that these individuals are a huge amount of administrative costs (Cucciare and O'Donohue, 2006). Government Accountability Office stated that 5 percent of Medicaid beneficiaries accounted for half of programme expenses (Quinn et al 2016). These patients generally face complex, permanent problems that are difficult to assess and control. If these patients are differentiated by healthcare providers, the latter can possibly reduce costs and help them manage their ailments better.

This research examines and perhaps benefits a strategy for distinguishing patients with and without the danger of readmission. These patients are supplied with solutions tailored to their specific needs and can be utilized to

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## Outline

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Keywords

1. Introduction

2. Literature review

3. Feature extraction

4. Machine learning approaches

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6. Conclusion

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# Performance validation of wind turbines using machine learning methodologies

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