

## Low Power and Area Efficient Image Compressing by Using Fuzzy Logic

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**Abstract:** In the digital electronics era, video and image processing, storage, data transmitting, data streaming, data retrieval, video playback features increasing exponentially. These requirements data processing and storage improvement results to necessity of hybrid compression, efficient encoding and decoding, compression ratio techniques in demand for modern real time applications. For that spatial domine technology of compression is prefer to satisfy the computational constraint for real time gadgets. DWT (discrete wavelet transform) & multi-level Block Truncation Coding (BTC) mainly used for special domine. Discrete Wavelet Transform procedure is used to constant and motion images and implemented to all average pixel estimation of the image. Loss type compression technology BTC is implemented for grayscale image processing. It designed that original image splitted as square blocks with help of quantize for decrease the gray intensity images every portion of square box having equal standard deviation and Mean values. In this proposed methodology is analysis of Discrete Wavelet Transform & Multi-level BTC compression technologies for binary and color images

**Index Term:** VLSI, BTC, DWT,

### 1. INTRODUCTION

The improving and headway of media GU situated programming innovation done modernized picture information a trademark bit of current life. a 2-D power control limit was examined and encoded quantized for making moved picture, extent information made in huge in the sound bated domine to accomplishes massive collecting, preparing, and correspondence necessities. In that capacity, the hypothesis of information pressure winds up being logically progressively basic for reducing picture data wealth to ensure more prominent apparatus data move limit. Writing computer programs is structuring and data theory, information weight is as far as encoding idea which used for lessening information. Weight factor is basic as it diminishes utilization of cost. Square Truncation Coding is a plain and misfortune weight picture pressure framework for dim scale pictures. The primary plan of BTC is execution of quantization idea for square blocked pixels. Info unique picture opened as 4x4 or 8x8 networks for simple figuring of mean and standard devition. Thresholding limit is deciding utilizing mean and remake esteems done by the assistance of standard deviation. Limit esteem determine for the finding the bitmap of the square. BTC offices that men, standard deviation,

**Skin Tumor Segmentation Using Artificial Neural Network in Ultrasonic Images**Md Ejaz Ahamed<sup>1</sup> Ziaul Haque<sup>2</sup><sup>1,2</sup> Associate Professor In Department Of Electronics And Communications Engineering, Medak  
College Of Engg & Tech. Telangana, India<sup>1</sup>[aemny9@gmail.com](mailto:aemny9@gmail.com) , <sup>2</sup>[ziaul.haque197@gmail.com](mailto:ziaul.haque197@gmail.com)**Abstract:**

One of the world's most popular and rising health conditions is the skin. The human skin tumour, because of the nuances in texture, colour, hair appearance and other attributes, is the most volatile and one of the toughest organisms to immediately identify and determine. In this project we have proposed a device that uses Artificial Neural Network to identify skin tumours. Different forms of dermatological tumours are effectively identified. It primarily comprises of three steps of picture preparation, teaching and identification. We add algorithms including a transition from grey to HSV to the input picture during the image processing step. The input image is observed with artificial neural network algorithms after HSV values are collected. The percentage of contamination is often identified as an exception to the identification.

**1. INTRODUCTION**

Human skin is the main organ of the body. Somewhere between 6 and 9 pounds its weight, while the surface area is around two square metres. Skin separated from the exterior environment by the interior part of the body. It offers protection against pathogens, microorganisms, hypersensitivity, diseases and controlling body temperature. Circumstances which deceive, alter skin surfaces, or damage the skin can trigger side effects such as widening, eating, redness and tingling. Hypersensitivity, aggravations, genetic structure and particular tumours may contribute to dermatitis, hives and other skin problems, and to insensitive issues of the framework. Massive quantities of skin tumours such as skin outbreak, alopecia, tingling, dermatitis often impair the appearance. Skin may also develop multiple malignancies. Images are used to classify these tumours through various methods, such as dividing, scanning, extraction etc It is important to turn the image into computerised form and to conduct capability later in this image to get an improved image or to get important details from an image.

The ANNs' willingness to respond to temperature shifts by adjusting their association content or composition is a significant component of them. This aspect promotes the normal adaptation of neural organisational systems. ANNs are horribly streamlined representations of the human mind in their present structure. This is because of the significantly more obstructive behaviour involved with the action of the cerebrum that the ANN model suggested. In comparison to ANN capacities of simpler sensory systems, seen in crude animals like creeping creatures, which can be adapted to an intricate environment, it is more adaptive. An picture of a normal neuron that is disengaged is as it was used.

In Brause (2001) a 1971 case study showed these essential real factors in the clinical zone. His analysis found that people had different barriers to identifying. The findings of the review were as follows:

- Highest HR (most accomplished specialist) assurance: 79.7%
- Ace database computer: 82.2 percent
- 600 patient data computer: 91.1 percent This finding suggested that people who have been assigned cannot uniquely investigate complicated data without botches.

**2. LITERATURE SURVEY**

There is a significant cost-effective and development loss in a plant skin tumour. There are some tumours now several days on the leaves of the herb. It is important to track these dangerous tumours in order to improve the development volume and quality standards. For this a particular tumour has to be identified. Different forms of skin tumours cause losses in plants. Insect injury, fungal damage, the primary tumours are bacteria. Skin tumours are often found on stems, stalks of plants. Because of their adverse effects on birds, insecticides are not effective. The method of feeding animals is often risky. The biologist's primary goal is to measure the harm inflicted by tumours on plant leaves by measuring the harmed region of plants. In certain instances the branches, the roots of the plant, produce parasites or tumours.



# GSM Based Industrial Safety Detection and Prevention System Using Arduino

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**Abstract:** A GSM (Global System for Mobile Communications) based industrial fault detection and prevention system is a system that uses GSM technology to detect and prevent faults in industrial equipment or processes. The system may include sensors and other monitoring devices that are installed on industrial equipment or in the environment in which the equipment is located. These sensors can detect a variety of different types of faults, such as temperature changes, vibration, and pressure changes. When a fault is detected, the system can send an alert via GSM to a designated recipient, such as a maintenance technician or supervisor. This allows for timely response to the fault, which can help prevent further damage to the equipment and minimize downtime. Overall, a GSM based industrial fault detection and prevention system can help improve the reliability and efficiency of industrial equipment and reduce the risk of costly breakdowns or accidents.

**Key words:** GSM, Arduino uno

## I. INTRODUCTION

An industrial safety detection system plays a vital role in ensuring a secure and controlled environment within industrial settings. By utilizing an Arduino microcontroller, along with various sensors and modules, it becomes possible to monitor multiple parameters such as temperature, humidity, smoke, fire, and pressure. This comprehensive system not only detects potential hazards but also provides real-time feedback through an LCD display. Additionally, it is designed to initiate immediate actions by activating safety mechanisms such as water pumps, exhaust fans, and buzzers, while also notifying pre-fed contact numbers via a GSM module. The integration of Arduino as the central control unit allows for efficient data collection, processing, and decision-making based on the sensor inputs. With the

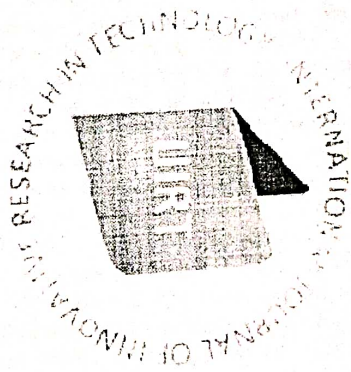
ability to connect multiple sensors to the Arduino board, the system can continuously monitor critical environmental variables in industrial environments. By incorporating a temperature sensor, potential overheating situations can be identified, preventing equipment damage or the risk of fire. The humidity sensor helps in maintaining optimal moisture levels, preventing adverse effects on machinery or products. The smoke and fire sensors ensure prompt detection and response in case of any fire outbreak, minimizing the risk of extensive damage and ensuring the safety of personnel. The pressure sensor enables the monitoring of critical pressure levels in pipes or vessels, preventing potential leakages or bursts. To provide real-time feedback, an LCD display is utilized, allowing users to quickly view and analyze the sensor readings. In the event of any fault or hazardous condition, the system can trigger appropriate safety measures. These safety mechanisms may include activating a water pump to extinguish a fire, initiating the exhaust fan to remove smoke or harmful gases, and activating a buzzer for audio alerts within the premises.

Furthermore, the system incorporates a GSM module, enabling it to communicate with predefined contact numbers. In critical situations, where immediate action is required, the system can make automated phone calls or send text messages to alert responsible personnel or emergency services. This feature ensures that appropriate authorities can respond swiftly and take necessary measures to mitigate risks or handle emergencies effectively.

By combining Arduino's programmability, sensor inputs from temperature, humidity, smoke, fire, and pressure sensors, and the ability to activate safety mechanisms and communicate through a GSM module, this industrial safety detection system offers comprehensive monitoring, immediate response, and

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## SOLAR POWERED AUTO IRRIGATION SYSTEM

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### ABSTRACT

Agriculture plays a vital role in the Indian economy, over 70 percent of the rural households depend on agriculture, agriculture is one manually from ages, as the world is trending into new technologies and implementations it is a necessary goal to trend up with agriculture also, we have proposed a smart agriculture monitoring and prediction of crop based on sensors, they are capable of providing information about agriculture fields, also we will be using pre trained AI model is used to predict crop. This smart agriculture using system is powered by Microcontroller, it consists of temperature sensor, moisture sensor and humidity sensor, when the agriculture monitoring system starts and it checks the temperature, humidity and moisture level, meanwhile the collected sensor data is applied to model which will predict the crop, this all is displayed on the LCD display module. In recent days, the world's population is presumed around 7.3 billion and will be expected to grow to 2.0 billion in the next 40 years, rising at 9.5 to 10.0 billion by 2050. Global population growth has affected food shortfall and the high water requirement problem; it is a worldwide scale. With the world's population increasing, farmers need to upturn food production, minimize water use and make rational

use of natural resources while protecting the environment. Moreover, traditional farming techniques do not allow them to do it. The emergence of improvements in the agricultural sector as the notion of precision agriculture stands up to the rising food requirements of the world's population. It leans on the practice of more selective resources like water, seeds, fertilizers, and other necessary things to equate productivity with environmental interests. Precision agriculture is collected field information and technology in agricultural processing systems by affording precision methods to attain optimum and sustainable profits improving their abilities to adapt to the environments around them. Precision, crop quality, over the agriculture domain and the quality of the crops and reduce negative environmental impacts on the agriculture sector.

### INTRODUCTION

Agriculture is very important because it produces food and feed which is necessity to animals and human beings. It fulfills the basic need of billions of people. It is one of the major contributors to the country's GDP and economic growth. Hence, it is widely practiced in India.

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## Waste management system using IOT

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**Abstract:** Due to urbanization and the growth of the human population, waste production has been rising. Cities with overflowing trash cans have unsanitary conditions. This has an adverse effect on the environment. So an "Waste Management" was developed to lessen the workload for ragpickers because doing so by hand puts workers' health at risk. Wet, dry, and metallic waste are divided into three categories under the suggested system. This newly created technique makes garbage management profitable in addition to being cost-effective. The appropriate sensors identify each type of garbage, which is then separated into the bins that are allotted to it. Information about the amount of waste disposed of is updated on the server on a regular basis.

**Keywords:** IOT, ARDUINO

### 1. Introduction

Poor waste disposal was a result of the population boom. Garbage management takes more time and labor than other tasks. In recent years waste disposal is becoming a huge cause. The most common method of waste disposal is unplanned and it is dumped at landfill sites this method causes ill effects to all living beings. This process can cause the environment to lose its aesthetic value by producing liquid leachate and other fungi that pollute surface and subsurface water. It can also hasten the spread of dangerous diseases. In India, ragpickers play a significant role in the process of recycling solid waste, but they also suffer from a variety of health issues, including skin disorders, infections, respiratory problems the dependent of ragpickers can be reduced if the automatic waste segregation takes place in the dustbin. The wastes are segregated into basic main streams such as metallic, dry and wet this waste has a large potential of

recycled and reused. Even if there are numerous industrial waste segregators present, it is always preferable to segregate the garbage at the source since rag pickers are not required for this sort of segregation.

Additionally, rather than sending the garbage to a segregation facility first and then a recycling facility, the segregated waste can be transported straight to the recycling facility. The primary goal of this project is to develop a small, affordable, and user-friendly trash segregation system for urban communities to streamline the waste management process since there is currently no such system for automatically separating waste into dry, wet, and metallic waste. Many individuals are currently likely to live in cities for the convenience of making their work easy for the intended goals in all directions, and other people are moving from urban or rural locations for the purpose of pursuing education or other possibilities that are lacking in their home communities. As a result,

# Study of Biomedical Instrumentation Equipments and Telemedicine

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**Abstract:** Biomedical Engineering involves developing new devices and procedures that solve medical and health-related problems by combining advanced technologies like Artificial Intelligence and Machine Learning to improve the human health. Bioengineers developing electrical circuits and software's for Biomedical Instrumentation equipments are some may be used for recording such as ECG, EEG, EMG and ERG. Some may be used for critical care patients such as pacemakers, defibrillators and ventilators. Some equipments are used to diagnose defect in human body such as X-ray, CT scan, MRI. Advantages of telemedicine in COVID are also reviewed in this paper.

**Keywords:** Biomedical equipments, Imaging, COVID, Telemedicine. and Medical Devices

## 1. Introduction

Medical Instrumentation engineering involves developing new equipments that are used to solve healthcare and medical issues with reduced cost[1]. Pulse oximetry is monitor peripheral oxygen saturation and pulse rate of the patient [2].

The importance and deployment of Telemedicine in during COVID-19 [3]. Telemedicine is not a technology or new branch of medicine but it is the delivery of health-care for long distances [4].

The important and transformation precaution during pandemic [5]. Telemedicine is a complex system which has both trust and collaboration [6]. The effectiveness of telemedicine in various domains such as Neurology, Cardiology, Dermatology, Psychiatry, Home health care[ 7].

Biomedical Instrumentation system contains five components, which are Mesurand ,Transducers or Sensors, Signal Conditioning, Output Display and Auxiliary components. Measured measures BP, ECG, IR and tissue sample such as Blood or a Biopsy. The sensor converts input physical quantity to an electric output. Signal conditioning convert analog sensor output to digital form. Display output displays the results in the form of numerical, graphical, discrete or continuous. Auxiliary components contains data storage, data transmission and data recording.

The device convert ionic potentials into electronic potentials are known as electrodes. Electrodes are mainly two types, polarized and non-polarized electrodes. There are micro-electrodes, body surface electrodes and needle electrodes are used for measuring purpose.

## 2. Review of Biomedical Equipments

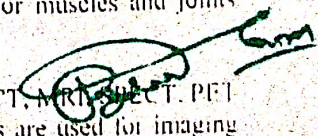
Biomedical equipments are mainly three types, type B, type BF and type CF. Type B equipments are non-invasive, BF type equipments are floating type defibrillator paddle and type CF are floating type ECG module.

There are some equipments used to measure bioelectric signals such as ECG, EEG, EMG and EOG. Electrocardiography which is used to record the electrical activity of the heart. Electroencephalography is the graph obtained by the electrical activity of brain. Electromyography is a method of recording electrical activity of muscles. Electrooculography is a technique of measuring the resting potentials of retina. For these equipments, some electrodes are used such as metal disc electrodes, chloride silver disc, dry electrodes, surface electrodes, needle electrode, single channel recorder, three-channel recorder, vector cardiograph and continuous recording.

Pacemaker, defibrillator, hemodialysis machine, spirometry, diathermy and ventilators are used when the patient in critical care. The purpose of using pacemakers was to control electrical impulses, restore normal activity and improve heart function. Pacemakers are mainly two types internal and external. Internal pacemakers are permanently placed for who suffers permanent heart attack. External pacemakers are used to temporary heart problem patients. The electronic device used for electric shock are known as defibrillator. There are two types internal and external defibrillators. AC, DC, synchronized, square pulse, double square pulse and biphasic DC are different types of defibrillators based on nature of voltage applied.

The process of removing waste products from the blood and restore normal PH value of the blood is called dialysis. Hemodialysis and peritoneal dialysis are two types of dialysis. Peritoneal dialysis takes more time than hemodialysis. The device used to take spontaneous breaths for patents are known as ventilators. The breathing support through an external interface are known as noninvasive ventilators. Invasive ventilators are for patients on long-term ventilation. A therapeutic treatment for muscles and joints known as diathermy.

Radiography, computer radiography, CT, MRI, SPECT, PET and ultrasonography these equipments are used for imaging purpose. X-rays are familiar because they are used for

  
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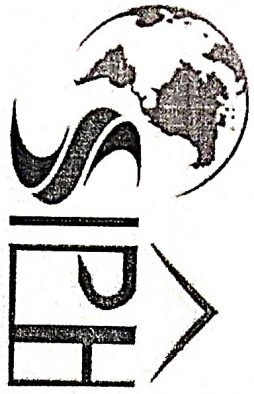
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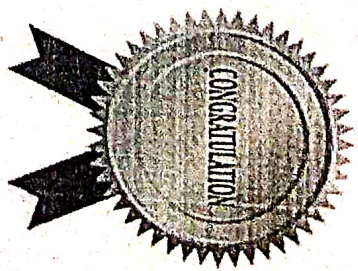
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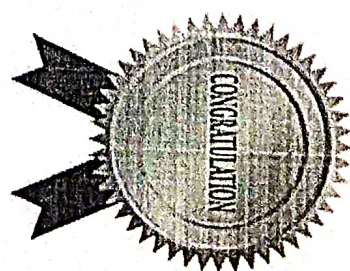
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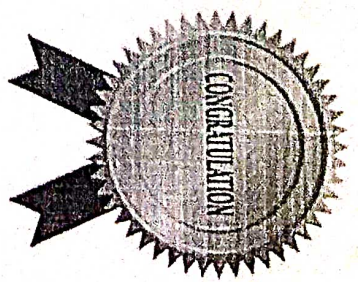
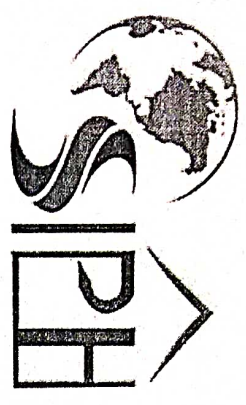
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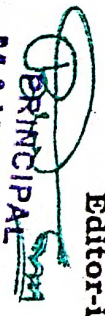
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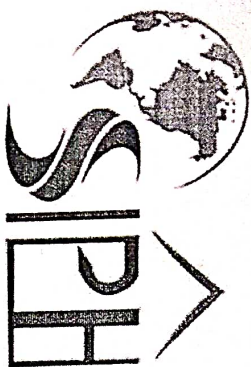


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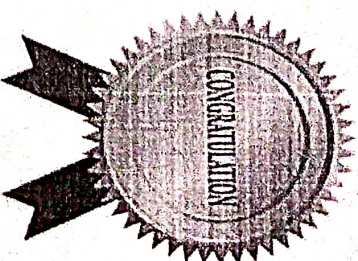


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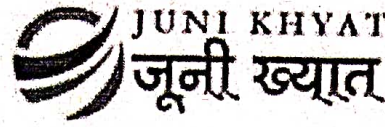
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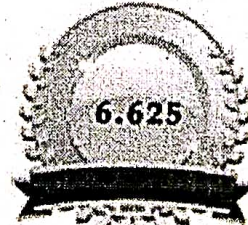
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*Principal*  
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M. VEER  
INSTITUTE OF SCIENCE & TECHNOLOGY  
Bandlaguda, Hyd-500 005.

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To  
The Principal  
Mahaveer Institute of Science and Technology,  
Bandlaguda, Hyderabad.

12.12.2022.  
Hyderabad.

Respected Sir,

Sub: Request for permission to visit Precast manufacturing unit at Fatehpur village, Shankarpally on 17.12.2022 - Reg.

To enhance the employability of our engineering graduate students and to increase the awareness of the students on using prefabricated structures, the Department of Civil Engineering intends to organise a visit to a precast manufacturing facility Preena Solutions India Pvt.Ltd located at Fatehpur village, Shankarpally, Hyderabad on 17.12.2022. The purpose of the visit is to enhance the knowledge and practical exposure of Engineering students. Students from Second, third year and fourth year B.Tech Civil Engineering program are planned for this visit. The total number of students visiting the manufacturing unit are eighty five along with five faculty members.

We need two buses to travel from our campus to the plant site and travel back to the campus. The buses will start from our college at 09.30 AM and come back by 03.30 PM. We need to arrange two banners with the Department name along with the name of the Institution for this visit.

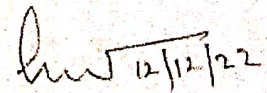
The details of the faculty accompanying the students is given below:

Sl.No.	Name of the Faculty
1	KNV Chandrasekhar
2	K. Sai Pradeep
3	M. Sai Sagar
4	G. Pushpalatha

In this regard, we request you to grant us with the permission and allow us to visit the Prefabricated unit and learn the tools and techniques along with the materials required on site for the preparation of the precast members.

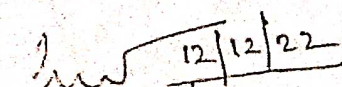
Thanking you and Regards.


Yours sincerely

  
12/12/22

Mr. Ch. Swethambar

HOD CED

  
12/12/22  
Ch. Swethambar  
Civil (HOD)

  
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MAHAVEER  
INSTITUTE OF SCIENCE & TECHNOLOGY  
Bandlaguda, Hyd-500 605.

Vysapuri, Bandlaguda Post:Keshavgiri,  
Hyderabad-500 005, Telangana, INDIA  
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E-mail: e3hod.civil@gmail.com,  
Website: www.mist.ac.in,

# MAHAVEER



Approved by AICTE, Affiliated to JNTUH,Hyd.

Counseling Code: MHVR, University Code: E3

Lr.No.MIST/001/Engineering/2022-23/IndustrialVisit/003

Date: 12.12.2022

To  
Mr.Sreedhar,  
M/s. Preca Solutions India Pvt. Ltd,  
Fatehpur village,  
Shankarpally,  
Hyderabad.

Sub: Request permission for a one day industrial visit to your precast prefabricating unit at Shankarpally on Saturday, 17.12.2022 for B.Tech Civil Engineering students - Reg.

Sir,

Mahaveer Institute of Science and Technology established in the year 2001 is one among the prominent institutions which promotes activities that are designed to enhance the employability of its Engineering students. The institution offers different courses in B.Tech with specialization in CSE, EEE, ECE, IT, AI, ML, CS, Aerospace, Mechanical and Civil Engineering. The institution also offers several M.Tech courses with specialization in DE & CS, PE & ES, VLSI, CSE, SE, AMS, MCA and MBA and II shift Diploma courses with specialization in DECE, DEEE, DCME, DME and DCE. The Department of Civil Engineering was established in the year 2011 with an intake of 60 seats. The Department is equipped with well qualified and trained faculty members.

In this regard, we would seek permission to visit your precast manufacturing facility at Shankarpally and give us an opportunity to understand and learn on "Precast Prefabricated Technology in Civil Engineering". The visit is focused on learning different methods to manufacture precast members, learn how prestressing the precast members can be done, the problems that may arise during preparation and erection of precast units, explore the latest technologies currently in use and the tools and techniques required along with the equipment used in real time projects. The purpose of the visit is to enhance the knowledge and practical exposure of B.Tech Civil Engineering students. Also, the students shall have a field demonstration of preparing the mix and casting of precast members.

The intended date of one day industrial visit is proposed on Saturday, 17<sup>th</sup> December, 2022. Your co-operation in this regard will be highly appreciated.


Thanking you

Yours faithfully

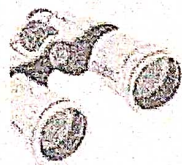
  
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Forwarded to  
Principal Sir  
Ch. Srinivas  
16/12/22  
Civil (HOD)



# MAHAVEER

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Approved by AICTE, Affiliated to JNTUH,Hyd.



DEPARTMENT OF CIVIL ENGINEERING

INDUSTRIAL VISIT

PRECA SOLUTIONS INDIA PVT. LTD



17-12-2022



brochure

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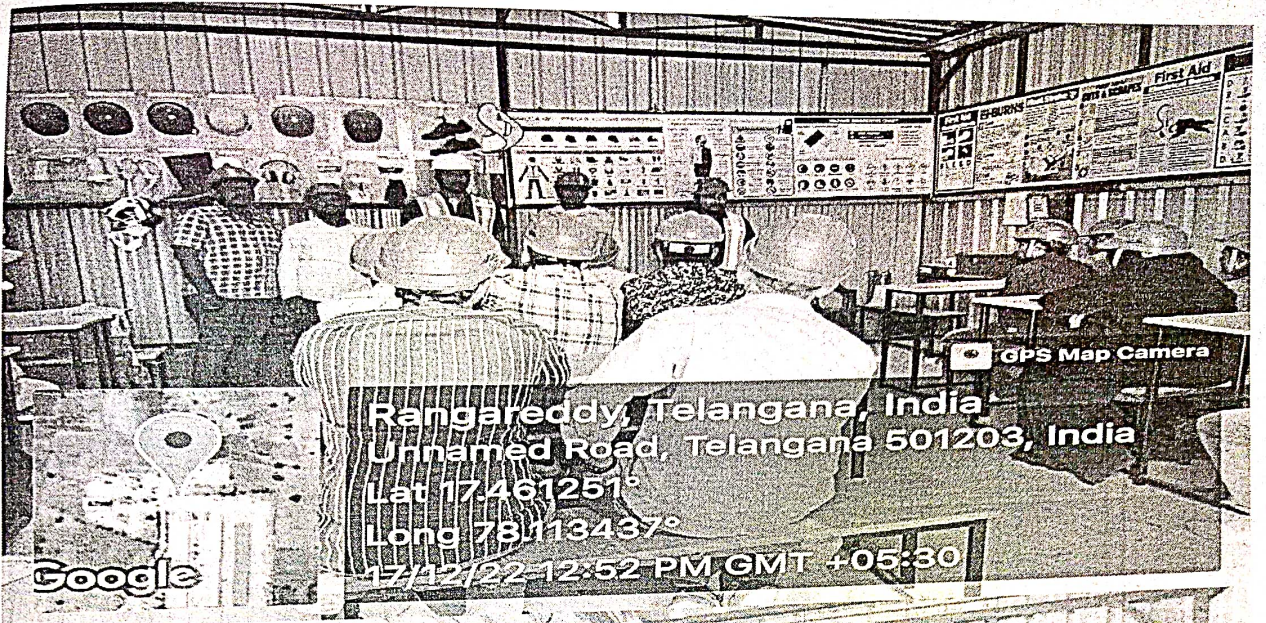
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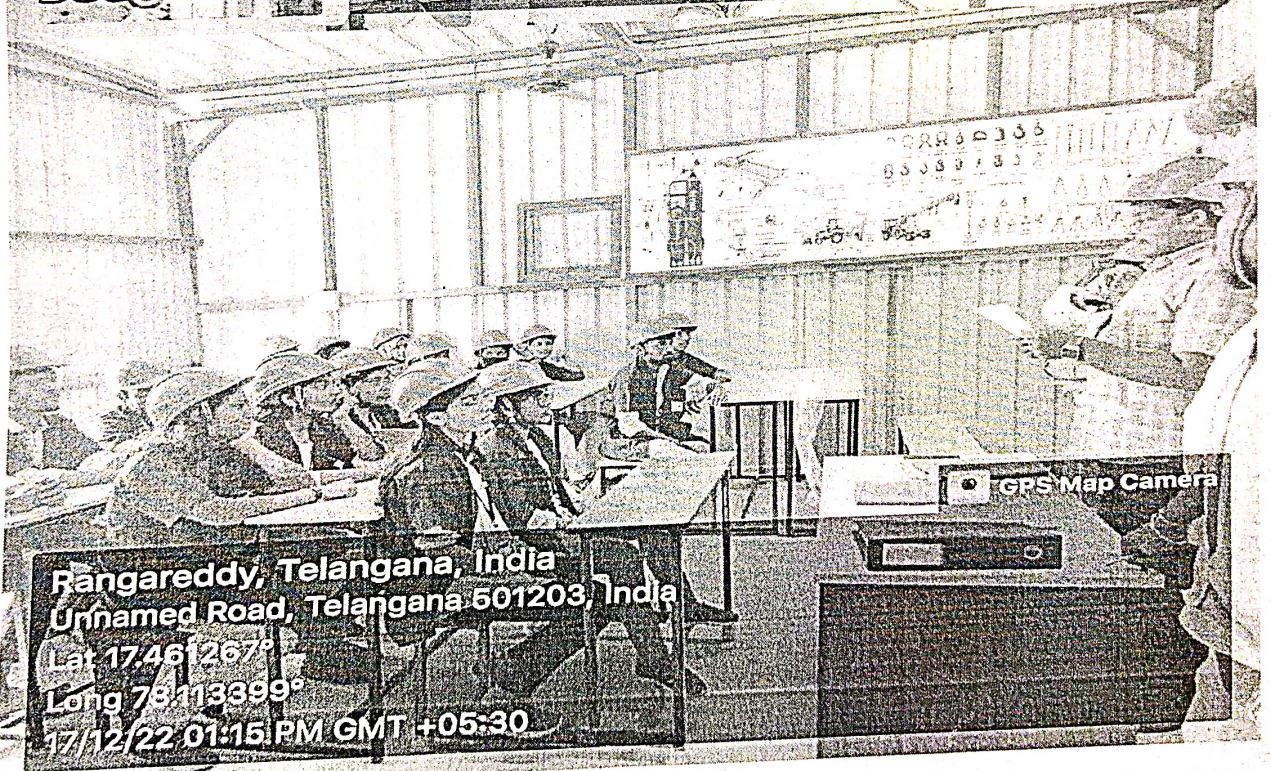
*B. S. Srinivas*

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**MESIICON  
2022**



**INTERNATIONAL INTERDISCIPLINARY CONFERENCE ON  
MATHEMATICS, ENGINEERING & SCIENCE (MESIICON)**

**11TH-12TH NOVEMBER , 2022**

*Organized By*

**Dr. B. C. Roy Engineering College, Durgapur**

**Certificate of Presentation**



**Paper Name: Multiple Criteria Decision Analysis Method for Unmanned Aerial Vehicle Airfoil Selection.**

**Authors: Sudarsan Gajula, Nilotpala Bej, Atal Bihari Harichandan.**

This is to certify that the above paper has been presented by  
Sudarsan Gajula from KIIT Deemed To Be University Bhubaneswar, India  
in the INTERNATIONAL INTERDISCIPLINARY CONFERENCE ON  
MATHEMATICS, ENGINEERING & SCIENCE (MESIICON 2022)

held during 11th - 12th November 2022, organized by Dr. B. C. Roy Engineering College, Durgapur.

Technical Co-Sponsors:



**Prof. (Dr.) Sanjay S. Pawar**

Chairman, IEEE MESIICON 2022

Dr. B. C. Roy Engineering College, Durgapur



## Blockchain for Secure EHRs Sharing of Mobile Cloud Based E-Health Systems

<sup>1</sup>Dr.A.Nanda Gopal Reddy, <sup>2</sup>Mrs.Swapna, <sup>3</sup> manasa

<sup>1</sup>HOD&PROFESSOR, <sup>2</sup>HOD&PROFESSOR <sup>3</sup> RESEARCH SCHOLAR

<sup>1</sup>DEPARTMENT OF IT, <sup>2</sup> DEPARTMENT OF CSE (AI&ML)

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### ABSTRACT

Recent years have witnessed a paradigm shift in storage of Electronic Health Records (EHRs) on mobile cloud environments where mobile devices are integrated with cloud computing to facilitate medical data exchanges among patients and healthcare providers. This advanced model enables healthcare services with low operational cost, high flexibility and EHRs availability. However, this new paradigm also raises concerns about data privacy and network security for e-health systems.. In this paper, we propose a novel EHRs sharing framework that combines blockchain and the decentralized interplanetary file system (IPFS) on a mobile cloud platform. Particularly, we design a trustworthy access control mechanism using smart contracts to achieve secure EHRs sharing among different patients and medical providers. We present a prototype implementation using Ethereum blockchain in a real data sharing scenario on a

mobile app with Amazon cloud computing. Empirical results show that our proposal provides an effective solution for reliable data exchanges on mobile clouds while preserving sensitive health information against potential threats. The system evaluation and security analysis also demonstrate performance improvements in lightweight access control design, minimum network latency with high security and data privacy levels, compared to existing data sharing models.

### 1. INTRODUCTION

Recently, there has been a growing interest in employing the blockchain technology to promote medical and e-health services [1]–[3]. Blockchain with its decentralized and trustworthy nature has demonstrated immense potentials in various e-health sectors such as secure sharing of Electronic Health Records (EHRs) and data access management among multiple medical entities [4]–[6]. Therefore, the adoption of blockchain can provide promising solutions to facilitate



# Deep Learning of Facial Depth Maps for Obstructive Sleep Apnea Prediction

<sup>1</sup>Dr.A.Nanda Gopal Reddy, <sup>2</sup>Mrs.Swapna, <sup>3</sup>Naveena

<sup>1</sup>HOD&PROFESSOR, <sup>2</sup>HOD&PROFESSOR, <sup>3</sup>RESEARCH SCHOLAR

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<sup>2</sup>MAHAVEER INSTITUTE OF SCIENCE AND TECHNOLOGY, HYDERABAD

## ABSTRACT:

Obstructive Sleep Apnea (OSA) occurs when obstruction happens repeatedly in the airway during sleep due to relaxation of the tongue and airway-muscles. Usual indicators of OSA are snoring, poor night sleep due to choking or gasping for air and waking up unrefreshed. OSA diagnosis is costly both in the monetary and timely manner. That is why many patients remain undiagnosed and unaware of their condition. Previous research has shown the link between facial morphology and OSA. In this paper, we investigate the application of deep learning techniques to diagnose the disease through depth map of human facial scans. Depth map will provide more information about facial morphology as compared to the plain 2-D color image. Even with very less amount of sample data, we are able to get around 69 validation accuracy using transfer learning. We are predicting

patients with above moderate  $> 15$  or below moderate  $\leq 15$  OSA.

## INTRODUCTION :

Social and personal activities are significantly affected by poor sleep. There are different types of sleep disorders and it is costing us at different levels. As [1] shows that only in Australia sleep disorder costs the economy around \$5.1 billion per year that comprises health care, associated medical conditions, productivity, and non-medical costs. And among all sleep disorder, OSA is the most common cause [2]. Normally during sleep, our upper airway remain open due to relaxed but strong enough muscles, lining the upper throat. But in OSA, someone can have a recurring blockage in upper airway due to different reasons, for more than 10 sec for each blockage, which causes the lungs out of oxygen and person to wake, which will



# PERFORMANCE OF SEARCH ENGINES FOR ACCURATE RETRIEVAL OF DATA IN SPEECH RECOGNITION SYSTEM

<sup>1</sup>DR.A.NANDA GOPAL REDDY, <sup>2</sup>MRS.M.SWAPNA

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INSTITUTE OF SCIENCE AND TECHNOLOGY, HYDERABAD

## ABSTRACT:

In recent Advancement growth of information is ubiquitous in nature and can be accessed anywhere by the user and needed information is provided according to the query search is the main objective in information Retrieval system. The source of information accessed can be of any form Text, audio and video etc. In the information retrieval system the information accessed is in the form of Text based retrieval, speech retrieval system and Image Retrieval system However user can get needed information retrieval of information accordingly by using Text, speech and image search criteria. In information Retrieval System text based retrieval is more reliable then speech retrieval system, where the accuracy rate in terms of precision and recall are more effective in text based retrieval system compared to speech and image retrieval system

A large number of information accessed in the form of audio and video forms the base for Multimedia information Retrieval System (MIRS). Most of MIRS today is monolithic or only using one media format like Google1 for text search, tineye2 for image search, youtube3 for video search or 4shared4 for music. The main objective is to retrieve the relevant information for query search of user in any of the form of Retrieval.

**Keywords:** Relevant Retrieval, Non-relevant retrieval, content based retrieval, context based, concept based, Ranking, MIRS

## I. Introduction:

The distinct information on the internet provides the user wide options to search the query in different forms of search in information retrieval system. The scope for search engines to Recognize the user query search in which ever form and provide needed information which is relevant information according to the user search process need which hits on the different clusters to Retrieve the relevant data. The measure of retrieval is correlated by the rate of precision and recall level. The information retrieval capabilities also provide various search



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Is hereby awarding this certificate to

**DR A.NANDA GOPAL REDDY**

In recognition of the publication of the paper entitled

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# Experimental Investigation For Process Parameters In Electric Discharge Machining Of M2 Die Steel Using Different Electrode By Taguchi Method

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Faiz Ali<sup>5</sup>

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<sup>5</sup>Assistant Professor, Department of Mechanical Engineering, Mahaveer Institute of Science and Technology, Hyderabad, Telangana, India.

\*Corresponding Author: M. Yadi Reddy

\*Assistant Professor, Department of Mechanical Engineering, Mahatma Gandhi Institute of Technology, Hyderabad, Telangana, India.

## Abstract

Electric Discharge Machining (EDM) is one of the most efficient employed non-traditional machining processes for cutting hard-to-cut materials. Modern ED machinery is capable of machining geometrically complex or hard material components. Heat treated tool steel, composites, super alloys, ceramics, etc. but the major problem is tool wear rate and low material removal rate. In the present work, an experimental investigation has been carried out to study the effect of cryogenic treatment on copper electrode in terms of Material Removal Rate, Electrode Wear Rate on M2 tool steel. The present material used for the work were having hardness up to 62 HRC and then machined with electrode materials of normal copper and cryogenic treated copper and cryogenic treated tempered copper with 12 mm diameter and 100 mm in length using different process parameters like Discharge current [A], Pulse on time [ $\mu$ s], pulse off time [ $\mu$ s] at three levels using L9 orthogonal array. Then in second part of present work optimization of output parameters such as Material Removal Rate (MRR) and electrode wear rate (EWR) during electric discharge machining of M2 tool steel using Grey-Taguchi analysis. After the comparative study the Result includes the selection of best electrode under optimal process parameters to get the High Material Removal Rate and Depth of cut and Low Tool Wear Rate.

**Keywords:** EDM Process, Microstructure, Hardness, MRR and TWR.

## 1. Introduction

In present days, there has been an expanded enthusiasm in newer and advanced materials with high strength, hardness, thermal stability and high wear resistance used in tool and die making, automotive, aircraft, aerospace, medical appliances etc [1]. More and more challenging problems are faced in producing complex geometries in such hard and difficult to machine materials by conventional machining processes [2]. To overcome such challenges several of unconventional machine materials by conventional machining processes [2]. To overcome such challenges several of unconventional machining processes have been developed. Electric discharge machining (EDM) [3], also name as spark erosion, electro-erosion or spark machining is one of the essential unconventional machining processes, broadly utilized for producing complex dies, tools and other components in hard and electrically conductive materials such as tool steel, die steel, composites, ceramics etc [4,5]. The present work aims to investigate the feasibility of copper electrode and cryogenic treated copper electrode while machining M2 tool steel in first section [6]. M2 is the 'standard' and most widely used industrial HSS. It has small and evenly distributed carbides giving high wear resistance, though its decarburization sensitivity is a little bit high [7]. After heat treatment, its hardness is the same as T1, but its bending strength can reach 4700 MPa, and its toughness and thermo-plasticity are higher than T1 by 50% [8]. It is usually used to manufacture a variety of tools, such as drill bits, taps and reamers. 1.3343 is the equivalent numeric designation for M2 material identified in ISO 4957 [9]. In this first section of EDM experimentation effect of process parameters at three levels on M2 tool steel taking response as MRR, TWR has studied [10]. Experimentation was performed on this condition with machining time 15 min. taken for each experiment and measures the performance [11]. To concluded that cryogenic treated copper feasibility rate for existing experimental conditions. It has to be observed that the output parameters such as material removal rate [12], depth and EWR of EDM whether increase with increase in pulsed current or not. Levels of process parameters are different depending on desired performance parameters [13]. Investigated work finds applications in industry for requirements such as; higher metal removal rate and depth of M2 tool steel and medium surface toughness

Research Article

# Investigation of Forming Behaviour of Metal-Polymer Sandwich Composite through Limit Dome Height Test Simulations

Tsegaye Bekele,<sup>1</sup> Perumalla Janaki Ramulu,<sup>2</sup> Habtamu Beri,<sup>1</sup> Amrela Siraji,<sup>1</sup>  
and P. Praveen Kumar Reddy<sup>3</sup>

<sup>1</sup>Department of Mechanical Engineering, School of Mechanical, Chemical and Materials Engineering, Adama Science and Technology University, Adama, Ethiopia

<sup>2</sup>Centre of Excellence for Advanced Manufacturing Engineering, School of Mechanical, Chemical and Materials Engineering, Adama Science and Technology University, Adama, Ethiopia

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Metal-polymer-metal (MPM) sandwich composites are in the class of proficient engineering materials which give outstanding strength-to-weight ratios because of their comparatively low density. These materials are vital constituents within the automobile, aerospace, marine, and civil construction industries as substitutes for sheet metals that considerably reduce weight while not compromising functionality. Moreover, these materials have supplementary qualities like sound dampening and thermal insulation capabilities. For these materials to be utilized within the aforesaid industries, they need to bear numerous forming processes that are essential in product manufacturing. This paper investigated formability analysis of metal-polymer sandwich composites made of “AW 6082-PVC-AW 6082 (APA)” and “galvanized steel-PVC-galvanized steel (GPG)” sandwich sheets, considering epoxy structural adhesives as the binding agent, via FEA simulation. All the FEA simulations were performed using Altair HyperWorks software. For evaluating the formability, the actual limit dome height (LDH)—biaxial strain path—tests were simulated using FEM software. The results analyzed are forming limit diagram (FLD), punch force distribution, and a dome height at diverse conditions of punch velocity and friction. A comparison is made to represent the best combinations for formability of the sandwich composites. Maximum formability and dome height are attained at low friction conditions and forming speed. It has also been observed that LDH simulations are very sensitive to friction, and it has a substantial impact on the test outputs. Maximum thinning (or fracture) generally moves away from the apex of the dome towards the die corner radius as the friction increases from zero upwards.

## 1. Introduction

In manufacturing engineering, it is common to specify and select suitable and reliable materials that can fulfil a product's requirements. Now and then, the existing materials are also able to accomplish these demands with or without necessary modifications. Otherwise, new materials are designed and manufactured according to necessities of the product being manufactured. The need for contemporary materials, hence, arises to deal with the requirements of

recent and economical engineering innovations. Handiness of engineering materials that meet design necessities is the major issue that influences engineering design flexibility.

Composite materials play an important role in achieving the aforesaid development. One of the ways to develop composite materials is by formation of metal-polymer-metal (MPM) sandwiches joined together to fabricate composite sheets. It consists of two metal skin sheets and a low-density polymeric core material as shown in Figure 1. The polymeric core material offers benefits for weight reduction, lower

# Formability Analysis of Metal-Polymer Sandwich Composites Made of Al and PE Sheets Using Numerical Simulations



Tsegaye Bekele, Perumalla Janaki Ramulu, Habtamu Beri, Amrela Siraji,  
and P. Praveen Kumar Reddy

**Abstract** Metal/polymer/metal (MPM) sandwiched composites are in the class of capable engineering materials which give outstanding strength-to-weight ratios because of their comparatively low density. These materials are vital constituents within the automobile, aerospace, marine, and civil construction industries as substitutes for sheet metals that considerably reduce weight while not compromising practicality such as load bearing capacity stiffness and flexibility. For these materials to be utilised within the aforesaid industries, they need to bear numerous forming processes. This paper investigates the formability of metal-polymer sandwich composites made of AA-PE-AA (APA) and Galvanised Steel-PE-Galvanised Steel (GPG) considering the adhesion strength via numerical simulation. For evaluating the formability, the actual limit dome height (LDH)—bi-axial strain path—test setup is simulated using FEM. The results analysed are forming limit diagram (FLD), punch force distribution, and dome height at diverse conditions of punch velocity and friction. All the numerical simulations were performed using Altair Hyperworks with various blank sizes. The results are noted as FLD and dome height at varied conditions. A comparison is made to represent the best combinations for formability of the sandwich composites. Maximum formability and dome height are attained at low friction conditions and forming speed.

**Keywords** MPM sandwich · Formability · Adhesion · Dome height · Limit dome height


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Authored by  
Dr.V.V.Prathibha Bharathi, Professor

From  
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# PROCESS PARAMETERS OPTIMIZATION FOR MAXIMIZING TENSILE STRENGTH IN FRICTION STIR WELDED JOINTS

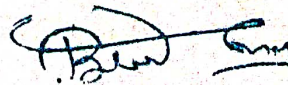
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**ABSTRACT:** A solid-state joining process called friction stir welding (FSW) welds two facing work parts without melting the material of the work pieces. Non-ferrous materials are routinely combined using this technique. Most people don't believe that aluminium alloy series can be welded using traditional methods. They are commonly used in the manufacturing of aeroplanes. The frequency with which technology is merged is intriguing. When welding these metals, a novel the welding method known as friction stir welding (FSW) has shown promising results. In this thesis, we examined the possibility of replacing riveting on stringer-reinforced panels in aeroplane structures using FSW technology. More optimisation approaches were advised and steps in the production process were identified. A knowledge base for establishing basic welding parameters has been built and compared with a sample of riveting and FSW technologies on a simple finite element model sample in order to find differences in the stress distribution character in FS welded samples.

## 1.1 Friction stirs welding:

Friction stir welding (FSW) is a solid-state joining process that uses a non-consumable tool to join two facing work pieces without melting the work piece material. Heat is generated by friction between the rotating tool and the work piece material, which leads to a softened region near the FSW tool. While the tool is traversed along the joint line, it mechanically intermixes the two pieces of metal, and forges the hot and softened metal by the mechanical pressure, which is applied by the tool, much like joining clay, or dough. It is primarily used on wrought or extruded aluminum and particularly for structures which need very high weld strength. FSW is also found in modern shipbuilding, trains, and aerospace applications.



## EXPERIMENTAL INVESTIGATION OF CUTTING PARAMETERS FOR TURNING BY EN8 STEEL BASED ON TAGUCHI METHOD

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### Abstract:

Recently en8 having better mechanical properties and it is used for manufacturing rollers, bolts, screws and connecting rods. turning operation is the basic metal removal process: during this process heat is generated between the work piece and cutting tool which affects the surface finish of the work piece. the advantage of using this cnc turning process is to reduce the cost and also enhance the quality of the finished component. in this experimental work conducted on en8 material using cnc lathe with sinumerik 802d control system with variable spindle rotating speed of 600 rpm, 800 rpm and 1000 rpm based on the 19 orthogonal array. the turning parameters such as spindle speed, feed rate and depth of cut was selected and investigated at three different levels to study the effect of metal removal rate. the optimum level of turning parameters was determined by using taguchi design of experiments.

### 1. Introduction

Turning operation is widely used in workshop practice for applications carried out in conventional machine tools, as well as in NC and CNC machine tools, machining centers and related manufacturing systems. Turning involves the use of a lathe and is used primarily to produce conical and cylindrical parts. With common attachments, flat faces, curved surfaces, grinding and boring can be done with a lathe. Therefore, it is valuable to increase tool life, to improve surface accuracy, to reduce main cutting force, feed force and to reduce machining zone temperatures (chip-tool interface temperature) in turning operations through an optimization study. Cutting fluids are generally used in machining process to reduce friction and wear, thus improving the tool life and surface finish. These are also used to reduce the forces and energy consumption, to cool/lubricate the machining zone, wash away the chips, and to protect the machined surfaces from environmental corrosion.

Machinability is defined as ease of machining of a material, characterized by low cutting forces, high material removal rate, good surface finish, accurate and consistent work piece geometrical characteristics, low tool wear rate and good curl or chip breakdown of chips etc. In machinability studies investigations, statistical design of experiments is used quite extensively. Statistical design of experiment refers to the proper planning of the experiment so that a reliable data may be obtained under all possible combinations of parameters and can be analyzed using statistical methods, resulting invalid and objective conclusions (Montgomery, 2005), statistical design of experiments large data is selected in small number of experimental values.



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# OPTIMIZATION PROCESS PARAMETERS OF TUNGSTEN INERT GAS TIG WELDING FOR STAINLESS STEEL 3041 USING TAGUCHI METHOD

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## ABSTRACT

A notable method of connecting that makes use of weight and heat is welding. One of the most frequently used processes in multiple businesses is TIG welding. In the current assembly environment, welding process optimization is essential for an assembly unit to respond successfully to competitiveness and expanding value requests, which must be completed with the least amount of expense. To improve quality attributes for this TIG Welding method, many procedure parameters and their communications are advanced using Taguchi strategies.

Key Words: Welding, Process Parameters, ANOVA

## 1. Introduction:

By melting the components together at a high temperature, allowing them to cool, and then fusing them together, welding is a construction or creative technique that joins materials, often metals or thermoplastics. Welding is distinct from lower temperature metal-joining techniques like brazing and soldering that don't melt the base metal.

After melting the base metal and adding a filler material to generate a pool of molten material (the weld pool), the joint may be stronger than the base metal depending on the weld design (butt, complete penetration, fillet, etc). (parent metal). Pressure can be used alone, in conjunction with heat, or both simultaneously to form a weld. A shield is also required to avoid contamination or oxidation of the filler metals or molten metals when welding.

A number of energy sources, including gas flames (chemical), electric arcs (electrical), lasers, electron beams, friction, and ultrasound, can be used for welding. Although welding is often an industrial activity, it may also be done in a number of environments, such as the open air, underwater, and in space. Because welding is a dangerous activity, precautions must be taken to avoid burns, electric shocks, vision loss, breathing in poisonous fumes, and exposure to intense UV radiation.



# INFLUENCE OF PROCESS PARAMETERS ON MECHANICAL PROPERTIES OF 3D PRINTED COMPONENTS

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## ABSTRACT

You can rapidly and affordably build engineering components using the emerging sophisticated process known as additive manufacturing. One of the popular forms Rapid prototyping using 3D printing is an application of additive manufacturing used in engineering applications. This approach loads the data into the machine, preferably in STL format, and then generates 3D digital drawings layer by layer. The mechanical properties of the product may be used straight away for engineering requests when they consume remained thoroughly tested. Fused deposition, a kind of 3D printing, melts and deposits material layer by layer in line with the design provided to the machine using wire that is fused at a certain temperature. A amount of process variables, including The mechanical features of the manufactured component, such as elongation and tensile strength, Factors like raster angle and orientation affect shear strength and flexural strength, layer thickness, velocity of material deposition, and nozzle diameter. In this study. tensile, shear, flexural, and other process issues are inspected for their effects on the mechanical characteristics of 3D printed items. elongation strengths.

## 1. INTRODUCTION

A three-dimensional solid item may be produced via 3D printing, sometimes referred to as additive manufacturing, from a digital file. Although the technology has been present since the 1980s, it wasn't until the first decade of the twenty-first century that it really took off. Today, 3D printing is employed in a variety of industries, including consumer products, healthcare, aviation, and building.

The capacity of 3D printing to create elaborate and sophisticated patterns is one of its main advantages. The need to remove material in order to make a finished product places restrictions on conventional production techniques like injection moulding and machining. However, with 3D printing, material is added layer by layer, enabling the creation of considerably more elaborate and sophisticated patterns. This enables the production of items It would be difficult to manufacture using traditional methodstechniques.

The quickness and effectiveness of 3D printing is another benefit. Even producing the most basic components may take a long time and require a lot of effort using traditional manufacturing



# IMPACT ANALYSIS OF NOZZLE DESIGN IN STEAM TURBINES

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## Abstract

In the field of energy conversion, Steam turbines play a crucial part. The design and operational procedures of steam turbine is highly advanced and considered as fully fledged technological components. This steam turbine converts heat energy of steam to mechanical energy. Every industry comprises of these turbines for they regarded as a perfect replacement of many heat engines and prime movers and also used in power plants for possessing greater thermal efficiency and high power to weight ratio. Above all, the turbine is an assembly of nozzles which were used to generate high kinetic energy. These nozzles are great devices for understanding the working features of steam turbines. A different kinds of sizes and shapes of nozzles are feasible, among those Convergent Divergent nozzle is frequently used. When steam turbine works the flow loss of steam increases as the disrupt of profile and surface smoothness occurs because of solid particle erosion on nozzle surface.

**Key Words:** steam turbine nozzle, CATIA, ANSYS FLUENT

## INTRODUCTION

Steam turbines are used in all of our major coal fired power stations to drive the generators or alternators, which produce

electricity. The turbines themselves are driven by steam generated in 'Boilers' or 'Steam Generators' as they are sometimes called. Energy in the steam after it leaves the boiler is converted into rotational energy as it passes through the turbine. The turbine normally consists of several stages with each stage consisting of a stationary blade (or nozzle) and a rotating blade. Stationary blades convert the potential energy of the steam (temperature and pressure) into kinetic energy (velocity) and direct the flow onto the rotating blades. The rotating blades convert the kinetic energy into forces, caused by pressure drop, which results in the rotation of the turbine shaft. The turbine shaft is connected to a generator, which produces the electrical energy.

## Introduction to steam turbine nozzle

Nozzles are wont to guide the steam to hit the moving blades and to convert the pressure energy into the K.E. within the case of small turbine, the nozzles are located within the lower half the casing. But within the case of the larger turbine, the nozzles are located on the upper half the casing. During this work we mainly focused on nozzles and its types. In a great number of machines the work is performed at the expense of external K.E. of the working fluid. The K.E. of working



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# Anisotropy effects on the tensile properties of AA5052 and AA5052-PVC-AA5052 sandwich sheets

Praveen Reddy, Chinmaya Prasad Padhy and Perumalla Janaki Ramulu

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## Abstract

The essence on sheet metal industry innovation for making light weight bodies has been increasing day-to-day in the automotive sector. Based on the current demand and significance of sheet metals, the present work has been carried out on AA5052-PVC-AA5052 sandwich sheets to find out its tensile behaviour and hence related mechanical properties. The tensile behaviours of as received AA5052 alloy sheet of 1mm thickness, PVC sheet of 0.5 mm thickness and AA5052-PVC-AA5052 sandwich sheet of 2.5 mm thickness were investigated. From the test results, the mechanical properties like yield strength (YS), ultimate tensile strength (UTS), uniform elongation (UE), total elongation (TE), strain hardening exponent ( $n$ ) and material strength coefficient ( $K$ ) were evaluated. From the experimental results, rolling direction of base metal AA5052 alloy sheet has an influence on the mechanical properties; moreover, among three rolling directions such as  $0^\circ$ ,  $45^\circ$  and  $90^\circ$ , better mechanical properties have been observed in  $90^\circ$  rolling direction. Similar tendency is seen in the case of sandwich sheets of  $90^\circ$ -P- $90^\circ$  rolling direction than other sandwich sheets. From this work, one can understand the improvement of mechanical properties with different combinations and rolling directions of AA5052 alloy sheet. The manufacturing industry can use these data as it is for their inclusion to the future products.

**Keywords:** tensile behaviour; rolling direction; mechanical properties; MPM; sandwich sheets; AA5052

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# OPTIMIZATION OF PROCESS PARAMETERS OF DIE SINKING EDM PROCESS ON ALUMINUM MMC

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## Abstract :

Aluminum alloys are widely used in aerospace and automobile industries due to their low density and good mechanical properties, better corrosion resistance and wear, low thermal coefficient of expansion as compared to conventional metals and alloys. The excellent mechanical properties of these materials and relatively low production cost make them a very attractive candidate for a variety of applications both from scientific and technological viewpoints. Electric Discharge Machining (EDM) is a machining method primarily used for hard metals likely for removing unwanted material in the form of chips. This is basically an unconventional machining process.

The objective of the present work is to investigate the effects of the various DEDM process parameters on the machining quality and obtain the optimal sets of process parameters so that the quality of machined parts can be optimized. Experiments are conducted on the pieces varying parameters. The work piece and electrode materials used for machining are aluminum alloy MMC (Al with boron) and copper tungsten. The process parameters considered are Pulse Time on, Pulse Time off, and peak current. The range of values varied are Time on – 100µsec, 200 µsec and 500 µsec, Time off – 200 µsec, 500 µsec, 900 µsec, Input power –7amp, 15amp, 22amp.. The optimization is done by using TAGUCHI technique by considering L9 orthogonal array. Optimization is done using Minitab 19 software.

## 1.INTRODUCTION

Metal Matrix Composites (MMCs) are supreme auspicious in attaining greater mechanical and wear properties due to the existence of reinforced elements. The MMC have greater properties as related to huge substantial. Between these MMCs, aluminum matrix composites (AMCs) entice much responsiveness due to high strength, adequate temperature of casting, lightness and additional properties in it. Behind the evolving of the MMCs are to combines the properties of the metal matrix and the ceramic reinforced materials. The AMCs are currently used in many applications, namely

automotive drive shafts, connecting rods, brake rotors and cylinder liners. Due to the better strength ratio of AMCs permits to be useful widely in aerospace engineering . The developing demand, particularly in the aircraft industry, gives intensification to continuous exploration for the opportunities of improving the useful properties, with the tribological ones, in direction to learn new about the mechanisms/instruments of wear & tear and functioning possibilities of mechanism parts through the composites.

## Boron Carbide as Reinforcement

Boron Carbide is the only chemical compound of carbon and silicon. It was originally produced by a high temperature electro-chemical reaction of sand and carbon. Boron carbide is an excellent abrasive and has been produced and made into grinding wheels and other abrasive products for over one hundred years. Today the material has been developed into a high quality technical grade ceramic with very good mechanical properties.

It is used in abrasives, refractoriness, ceramics, and numerous high-performance applications. The material can also be made an electrical conductor and has applications in resistance heating, flame igniters and electronic components. Boron carbide is composed of tetrahedral of carbon and Boron atoms with strong bonds in the crystal lattice. This produces a very hard and strong material. Boron particles are shown in Figure

## 2.LITERATURE REVIEW

This chapter presents a review of the literature data available on the effect of various reinforcement types, their size and volume fraction, ageing behavior with Al based MMC's. Metal matrix composites are a combination of two phases, matrix and the reinforcement. Matrices can be selected from a number of Aluminum alloys e.g. AA 2000, 6000, 7000, A356 and many reinforcement types SiC, B4C, Al<sub>2</sub>O<sub>3</sub>, AlN, and C etc. are available in different sizes, morphologies (particulates, short fibers, long fibers and platelets) and volume fractions. These reinforcements can be combined with the different matrices, resulting in large composite systems. Furthermore, several different processing routes, such

# EXPERIMENTAL INVESTIGATION ON COMPOSITES REINFORCEMENT MATERIAL

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## ABSTRACT:

In this research, carbon fiber and graphene nanoplates (GNP) reinforced hybrid composites with different weight percentages of GNP (0, 0.1, 0.3 and 0.5 wt%) were prepared using hand lay-up technique and subsequent compression molding. Design of experiments and analysis of variance (ANOVA) were used to understand the correlation between control parameters (wt% filler, normal load, speed and sliding distance) and response measures (weight loss). Control variables such as normal loads (5, 10, 15, and 20 N), speed (1, 2, 3, and 4 m s<sup>-1</sup>), and glide distance (200, 300, 400, and 500 m) were selected. For research. Carbon fiber/epoxy composite filled with 0.5 wt% GNP was observed to have higher tensile and flexural strength than the other composite. Addition of GNP was found to reduce wear relative to weight loss. Scanning electron microscopy (SEM) was used to examine the worn surfaces of the composite materials. The analysis confirmed that the experimental results are close to the optimal results.

## 1. INTRODUCTION

The use of glass fiber reinforced plastics (GFRPs) composite has been increased considerably in various industries such as aerospace, automotive, chemical industry, marine, machine elements, domestic applications and many other areas. Polymeric composites have many advantages over conventional materials such as high stiffness and strength vs weight, good damping properties, good toughness, high impact resistance, low thermal expansion, good corrosion, high wear resistant and tailorability of material. Presently, advancement of cutting edge composites with improved properties is of most extreme significant, particularly composites which are light in weight yet with better mechanical, electrical and chemical properties is the need of great importance. To additionally improve the properties of the GFRPs they can be reinforced with other filler materials to acquire better properties. Recently, graphene has been given a lot of attention because of its particular attributes and properties. Graphene is viewed as an ideal filler for epoxy and responds effectively with it to get a superior grip among

# Morphological Evaluation of Steel using ZnO Nano Particles during Coating Process

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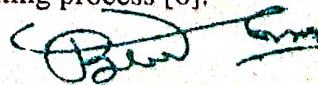
## ABSTRACT

Nanotechnology in less period of time has become one of the most wanted technologies in the recent times. Nano particles have gained lot of demand and its usage has become necessary in electronic, medicine and bio engineering industries too. Zinc oxide (ZnO) nanoscale materials are available in a number of forms like in the form of nano dots, in the form of nano fluids used for various applications and acting as a substitute for many working fluids and also in the form of nano crystals. For this in this particular study, ZnO nanoscale particles will undergo synthesis process by making use of the combustion solution process. A number of techniques are adopted to find out the characteristics possessed by the particles. Plate samples of standard dimensions of mild steel were used as a substance. Polishing of the nanoparticles was done till about  $R_a$  20  $\mu\text{m}$  by using an aluminium oxide solution. The specimen were first cleaned in the acetone and later cleaned in with ethanol later heat treatment was applied at various range of temperatures like 400°C and 500°C in the muffle furnace. After heat treatment process the specimens were coated with ZnO nanoscale particles at 500°C with device called airbrush. Finally the Coated specimens were gone through testing for the roughness of the surface. By using X-Ray Diffraction technique and then Scanning Electron Microscopy was used following by EDX and Rockwell Hardness tester.

**Keywords:** Airbrush device, XRD, SEM and EDX.

## 1. INTRODUCTION

It promises quantum leaps in areas such as nanoelectronics, medicine, material production, medical management, power generation, bioscience, information science, and nation security. It is widely sensed that nanotechnology has all possibilities of becoming one of the most Industrial trends worldwide [1]. This earth nature has many wonderful creations which include a number of materials, and procedures that show functioning in tiny scales in other words in nanoscales [2]. On the Earth there are numerous objects that possess characteristics of valuable interest. These include land, plantation, and aquatic life [3]. The need for relative motion between two surfaces and initial mechanical contact between asperities is an important distinction between mechanical wear compared to other processes with similar outcomes [4]. N.Sudheer kumar et al. (2015) described the Influence of Nano Solid Lubricant Emulsions on Surface Roughness of Mild Steel When Machining on Lathe Machine [5]. A thin layer of  $\text{Al}_2\text{O}_3$  nano particles on steel can be obtained by various means i.e., liquid and solid process of particle deposition under various machining process [6].



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## WELD ANALYSIS OF SIMILAR AND COMPARED METALS, MONEL 400 AND AISI 316L, WITHOUT MICRO- OR MACRO-DEFECTS

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### ABSTRACT

The petrochemical and nuclear sectors, where the weldments are often exposed to hot corrosion, frequently utilise dissimilar combinations of Monel 400 and austenitic stainless steel AISI 316. In this study, the mechanical and metallurgical characteristics of these bimetallic junctions, which were produced via the examination of the gas tungsten arc welding technique, are evaluated. By employing the right filler wire and welding technique and the best or most effective process parameters, you may weld Monel 400 and AISI 316l metals that are similar and different without micro- or macro-defects and decrease residual stresses in welded joints. Making use of the ANSYS workstation, create and analyse transient thermal fields. to put mechanical and metallurgical tests through to create strong dissimilar welded structures

### 1. INTRODUCTION

#### 1.1 WELDING

Welding forms a durable connection that fuses two pieces of metal together into one by heating them to their melting points. Additional metal, referred to as filler metal, is injected during the heating process to help bond the two components together.

#### 1.1.2 CLASSIFICATION OF WELDING PROCESSES:

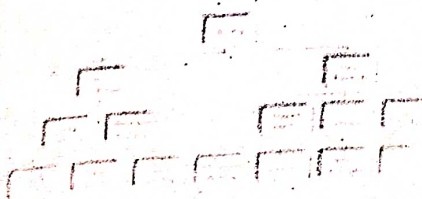


Figure 1.1 classification of welding

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# DIE SINKING EDM PROCESS PARAMETERS MONITORING PROCESS CONDITIONS

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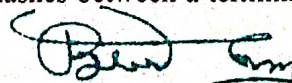
## Abstract:

Electrical discharge machining (EDM) is a popular nonconventional machining approach that is often used on hard materials. This method is popular because of the fact that EDM can machine any materials irrespective of its hardness. Modern engineering materials that are deployed in extreme conditions are often shaped or manufactured by EDM process. Electrical Discharge Machining is a one of the electrical energy based Unconventional Machining Technique. The electrical energy is directly used to remove or cut the metals. It's also called as Spark Erosion Machining or Electro Erosion Machining. The metal is removed by electrical spark discharge between tool (Cathode) and work piece (Anode). Electrical Discharge Machining is used in mould and die making industries, Automobile industries and making of Aerospace components.

Keywords: Die sinker EDM, MRR, TWR, SR, Taguchi

## 1. INTRODUCTION

In this innovative period, production is faced with hard-to-machine components, i.e. (High surface quality, high accuracy, high quality, complex shapes, high lung distortion, great control limit, low warm growth and good fatigue properties) and matching expenses. There is a development model for use in the following years of low weight and small mechanical portion; In this manner, the edge businesses have been built with expanded enthusiasm for developmental issues. A new idea is to assemble inefficient power sources such as sound, light, mechanical, artificial, electric, electrons and particles. Mechanical tools do not use traditional tools for metal evacuation, and they use a wide variety of energy, as the matching forms are not custom. In the previous two years, EDM has been used for machines with shape, measurement and precision specifications. EDM is a simple non-machine machine, which is machine-made electronic conducting materials using the precise controlled flashes between a terminal and work-component



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## Blockchain for Secure EHRs Sharing of Mobile Cloud Based E-Health Systems

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### ABSTRACT

Recent years have witnessed a paradigm shift in storage of Electronic Health Records (EHRs) on mobile cloud environments where mobile devices are integrated with cloud computing to facilitate medical data exchanges among patients and healthcare providers. This advanced model enables healthcare services with low operational cost, high flexibility and EHRs availability. However, this new paradigm also raises concerns about data privacy and network security for e-health systems.. In this paper, we propose a novel EHRs sharing framework that combines blockchain and the decentralized interplanetary file system (IPFS) on a mobile cloud platform. Particularly, we design a trustworthy access control mechanism using smart contracts to achieve secure EHRs sharing among different patients and medical providers. We present a prototype implementation using Ethereum blockchain in a real data sharing scenario on a

mobile app with Amazon cloud computing. Empirical results show that our proposal provides an effective solution for reliable data exchanges on mobile clouds while preserving sensitive health information against potential threats. The system evaluation and security analysis also demonstrate performance improvements in lightweight access control design, minimum network latency with high security and data privacy levels, compared to existing data sharing models.

### 1. INTRODUCTION

Recently, there has been a growing interest in employing the blockchain technology to promote medical and e-health services [1]–[3]. Blockchain with its decentralized and trustworthy nature has demonstrated immense potentials in various e-health sectors such as secure sharing of Electronic Health Records (EHRs) and data access management among multiple medical entities [4]–[6]. Therefore, the adoption of blockchain can provide promising solutions to facilitate



# Deep Learning of Facial Depth Maps for Obstructive Sleep Apnea Prediction

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## ABSTRACT:

Obstructive Sleep Apnea (OSA) occurs when obstruction happens repeatedly in the airway during sleep due to relaxation of the tongue and airway-muscles. Usual indicators of OSA are snoring, poor night sleep due to choking or gasping for air and waking up unrefreshed. OSA diagnosis is costly both in the monetary and timely manner. That is why many patients remain undiagnosed and unaware of their condition. Previous research has shown the link between facial morphology and OSA. In this paper, we investigate the application of deep learning techniques to diagnose the disease through depth map of human facial scans. Depth map will provide more information about facial morphology as compared to the plain 2-D color image. Even with very less amount of sample data, we are able to get around 69 validation accuracy using transfer learning. We are predicting

patients with above moderate  $> 15$  or below moderate  $\leq 15$  OSA.

## INTRODUCTION :

Social and personal activities are significantly affected by poor sleep. There are different types of sleep disorders and it is costing us at different levels. As [1] shows that only in Australia sleep disorder costs the economy around \$5.1 billion per year that comprises health care, associated medical conditions, productivity, and non-medical costs. And among all sleep disorder, OSA is the most common cause [2]. Normally during sleep, our upper airway remain open due to relaxed but strong enough muscles, lining the upper throat. But in OSA, someone can have a recurring blockage in upper airway due to different reasons, for more than 10 sec for each blockage, which causes the lungs out of oxygen and person to wake, which will

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# PERFORMANCE OF SEARCH ENGINES FOR ACCURATE RETRIEVAL OF DATA IN SPEECH RECOGNITION SYSTEM

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## ABSTRACT:

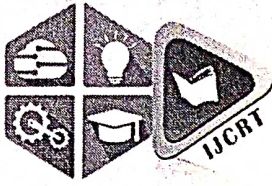
In recent Advancement growth of information is ubiquitous in nature and can be accessed anywhere by the user and needed information is provided according to the query search is the main objective in information Retrieval system. The source of information accessed can be of any form Text, audio and video etc. In the information retrieval system the information accessed is in the form of Text based retrieval, speech retrieval system and Image Retrieval system However user can get needed information retrieval of information accordingly by using Text, speech and image search criteria. In information Retrieval System text based retrieval is more reliable then speech retrieval system, where the accuracy rate in terms of precision and recall are more effective in text based retrieval system compared to speech and image retrieval system

A large number of information accessed in the form of audio and video forms the base for Multimedia Information Retrieval System (MIRS). Most of MIRS today is monolithic or only using one media format like Google1 for text search, tineye2 for image search, youtube3 for video search or 4shared4 for music. The main objective is to retrieve the relevant information for query search of user in any of the form of Retrieval.

**Keywords:** Relevant Retrieval, Non-relevant retrieval, content based retrieval, context based, concept based, Ranking, MIRS

## I. Introduction:

The distinct information on the internet provides the user wide options to search the query in different forms of search in information retrieval system. The scope for search engines to Recognize the user query search in which ever form and provide needed information which is relevant information according to the user search process need which hits on the different clusters to Retrieve the relevant data. The measure of retrieval is correlated by the rate of precision and recall level. The information retrieval capabilities also provide various search



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## A REVIEW OF PYTHON LIBRARIES TO DEVELOP APPLICATIONS IN ALL DOMAINS

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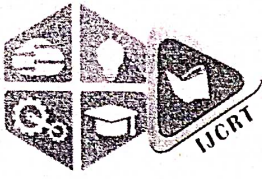
**Abstract:** In last few years most of the applications are using Python for development because it supports multiple programming paradigms, provides a large collection of comprehensive standard libraries and Embedded Libraries. It is a high-level programming language, Platform independent, dynamically typed, Portability, procedure oriented Object-oriented Language. We can build python application which help data analysts to analyze large amounts of data for scientific computing and machine Learning applications which enables computers to learn automatically from past data. In this paper, I explored all the built-in libraries to develop different computer science applications such as Image Processing, Data Science, Data Visualization, Cloud Computing, Machine Learning, Deep Learning, Natural Language Processing, Speech recognition, etc. And also, different frameworks for Python which can make the front-end work easier are also mentioned.

**Keywords:** Python, frameworks, Data Science, Artificial Intelligence (AI), Machine Learning, Deep Learning, Image Processing, Data Science, Data Visualization, Cloud Computing, Machine Learning, Deep Learning, Natural Language Processing, Speech recognition

### I. INTRODUCTION

Python since its creation in late 1980's by Guido van Rossum has gained a lot of popularity in various domains and application developments due to its simple but effective syntax making it easy for developers to develop their applications. It also paved the way for developers to dwell and return profitable returns in the domains of artificial intelligence, machine learning, neural networks, natural language processing and various other fields.

The main concept of python that made it achieve this level of success is the collection of standard libraries that it has which perform complex tasks and there is a library for just about anything in python. From basic functions to developing gui based applications using "tkinter" or "turtle" to developing protocols based using "telnetlib" to using "pandas" or "numpy" to deal with numerical and then proceed to statistical analysis, python eases this process. These libraries hold a fair value for python to be used to various



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# Concept Learning and the General-to-Specific Ordering of Hypotheses in Machine Learning

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**Abstract**—The problem of inducing general functions from specific training examples is central to learning. This paper considers concept learning: acquiring the definition of a general category given a sample of positive and negative training examples of the category. Concept learning can be formulated as a problem of searching through a predefined space of potential hypotheses for the hypothesis that best fits the training examples. In many cases this search can be efficiently organized by taking advantage of a naturally occurring structure over the hypothesis space—a general-to-specific ordering of hypotheses. This chapter presents several learning algorithms and considers situations under which they converge to the correct hypothesis. We also examine the nature of inductive learning and the justification by which any program may successfully generalize beyond the observed training data

**Index Terms**— General-to specific, concept Learning, FIND-S, Boolean-valued Function

## I. INTRODUCTION

Much of learning involves acquiring general concepts from specific training examples. People, for example, continually learn general concepts or categories such as "bird," "car," "situations in which I should study more in order to pass the exam," etc. Each such concept can be viewed as describing some subset of objects or events defined over a larger set (e.g., the subset of animals that constitute birds).

Alternatively, each concept can be thought of as a boolean-valued function defined over this larger set (e.g., a function defined over all animals, whose value is true for birds and false for other animals). In this paper I consider the problem of automatically inferring the general definition of some concept, given examples labeled as members or non members of the concept. This task is commonly referred to as concept learning, or approximating a Boolean-valued function from examples.

## II. CONCEPT LEARNING TASK

To ground our discussion of concept learning, consider the example task of learning the target concept "days on which my friend Amar enjoys his favorite water sport." Table 1.1 describes a set of example days, each represented by a set of attributes. The attribute EnjoySport indicates whether or not Amar enjoys his favorite water sport on this day. The task is to learn to predict the value of EnjoySport for an arbitrary day, based on the values of its other attributes. What hypothesis representation shall we provide to the learner in this case? Let us begin by considering a simple representation in which each hypothesis consists of a conjunction of constraints on the instance attributes. In particular, let each hypothesis be a vector of six constraints, specifying the values of the six attributes Sky, AirTemp, Humidity, Wind, Water, and Forecast. For each attribute, the hypothesis will either

- indicate by a "?" that any value is acceptable for this attribute,
- specify a single required value (e.g., Warm) for the attribute, or
- indicate by a "0" that no value is acceptable.

If some instance  $x$  satisfies all the constraints of hypothesis  $h$ , then  $h$  classifies  $x$  as a positive example ( $h(x) = 1$ ). To illustrate, the hypothesis that Amar enjoys his favorite sport only on cold days with high humidity (independent of the values of the other attributes) is represented by the expression

(?, Cold, High, ?, ?, ?)

# Requirement Gathering and Classification: An Engineering Perspective



Thakur Ritesh Bankat Singh, S.V.A.V. Prasad, Malla Reddy Jogannagari, Tapsi Nagpal

**Abstract:** Gathering the requirement is the vital steps for every successful quality software. Requirement Engineering is the key role for gathering the requirement. The good quality software development require useful data requirement. In recent Software Engineering achieve the data centric with the involvement of big data, artificial intelligence (AI) and machine learning. The most of data gathered from different sources with the evolution of technology, social media and other sources. There are many factors while gathering the requirement to produce the product with good quality. This Paper highlights and extends the research scope of existing requirement engineering to meet the new challenges of requirement clusterization and increase the productivity of product in regards to customer requirement. There is need of applying classification and clustering technique to form requirement clusterization.

**Keywords:** Requirement Analysis, Classification, Clustering, Requirement Engineering, Requirement Elicitation.

## I. INTRODUCTION

Requirement Engineering is a important phase of software development life cycle. The purpose of requirement engineering is deal between the client and developer. The collection of full and consonant requirements can lead the quality of software product and can fulfill the user requirements. The requirement engineering is a tough exercise that considers the product requirement demands from the number of viewpoints, roles and responsibilities [2]. The proper execution of requirement engineering will have direct effect on the product quality of the software.. In this paper, we highlight the role of requirement engineering and its activities in the development of quality software product. Requirement engineering is the incremental process.

It is the systematic technique for requirement elicitation, requirement analysis, requirement specification, requirement management. Traditionally, the requirement engineering is performed in the first phase of the software development life cycle [1]. The requirement engineering has dominant impact on the software product. The irrelevant or noise requirement present in a initial stage will be continued to the next stages of product implementation. Identification and modification of error at initial stage is more easier than the later stage in terms of time and cost.

Because of this requirement engineering is the important phase to reduce the errors at the initial stage of the good quality software development. There are many factors while gathering the requirement to produce the Software with good quality. There is a need of applying classification and clustering technique to segregate the requirements of same type. This Paper extends the research scope of existing requirement engineering to meet the 'new challenges of requirement clusterization and increase the productivity of product in regards to customer requirement. In this we form the cluster of same requirements based on number of requirements' received from the different users.

During the software development the quality of software project is decided in terms of requirement elicitation and requirement managing process.

Research paper provides comprehensive view of the role of requirement gathering in the requirement Engineering. The different sections in the paper are as follows. The Section II focused on the literature review of requirement engineering. Section III describes the taxonomy of requirement engineering. section IV describes various challenges & issues. Section V contains conclusion.

## II. LITERATURE REVIEW

In the field of requirement engineering number of researches share their knowledge as follows J Malla Reddy, et al [1], discussed about the requirement engineering concept Huma Hayat Khan, et al [2], discussed the factor generating the risk in the mean time of requirement engineering process in paradigm of Global software development. The work is useful for the people with less experience working in the global software development. Dr. Rajinder Singh [3]. conducted the survey on different software development organizations. He analyzed with evidence how quality of software product co-related with the reengineering process Swarnalatha, K.S, et al [4] proposed the dynamic framework for requirements engineering process model to produce better requirements for any software. The successful implementation of proposed requirement engineering process can have a good impact on the production of quality and quantitative software product.

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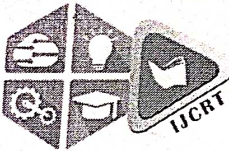
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# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## A ROLE OF INTERNET OF THINGS IN HUMAN LIFE : A PERSPECTIVE OF SMART HOME

<sup>1</sup>Dr. J. Malla Reddy, <sup>2</sup>Mr. M. Kamal Nadh, <sup>3</sup>Mr. M. Harsha Vardhan, <sup>4</sup>Ms. N. Priyanka

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**Abstract :** Smart home is the automation and control of electronic appliances and light energy systems.. In this paper, a smart home system was designed and implemented using Internet of Things (IoT). The system consists of two sub systems the Remote System and Cloud System. The Remote System (mobile system or remote-control device) is a messaging service used to send and receive data messages from the Application Program Interface. The cloud system consists of all the remote business logic and networking. This paper introduces new design for smart home which is based on 3D Virtual technology. The Virtual 3D engine is used to create a remote virtual home in user application. Users are able to monitor and control their remote virtual smart home using 3D virtual reality from remote application. This system utilizes a Virtual Machine Manager as a Wi-Fi-based gateway to connect different sensors and updates their data in Home Assistant cloud server. The collected data from several sensors can be accessed via remote devices such as smart phones and laptops over the Internet regardless of their location.

**Index Terms -** Smart home, 3D virtual model, Internet of Things, Virtual Machine, Cloud System, Remote System, 3D Virtual technology, home appliances.

### I. INTRODUCTION

Internet of Things is a collective network of physical objects embedded with sensors, software and other technologies which exchanges the data with other devices and system through the internet. These physical devices range from household to sophisticated industrial tools. It is a collective network of connected devices and the technology that facilitates communication between devices and the cloud, as well as between the devices themselves. Today 10 billion IOT devices are interconnected over internet and that may grow 22 billion by 2025. In the 21st century, the Internet of Things plying vital role in human life by connecting everyday objects such as kitchen appliances, thermostats, cars and baby monitors through the internet. The Internet of Things facilitates low-cost computing, collect and share data among the cloud, big data, analytics and mobile technologies and physical things with minimum human intervention. The Internet of Things is making the world as digital with more smarter and responsive, merging the digital and physical universes.

A smart home is also one of the applications of Internet of Things. It achieved tremendous popularity in this decade which increases the comfort and quality of life. The success of smart homes depends on their adoption and use by people in the context of daily life. Smart home setup includes home appliances and equipment can operate in remote with Smartphone or network computer with internet facility. It is a residential extension of building automation that involves the control and automation of all its embedded technology. The smart home includes appliances, heating, lighting, air conditioning, computers, TVs, refrigerators, security and camera systems capable of communicating with each other being controlled remotely. Smart home provides security, energy efficiency, low operating costs and convenience. Installation of smart products provides convenience and savings of time, cost and energy.

Smart applications are that incorporate actionable, data-driven insights into the user experience. The derived insights that enable users to more efficiently fulfill the desired task and actions. This paper presents the development of Smart home using Internet of Things to reduce the human intervention. The organization of the rest of the paper is as follows. The Section 2 describes the related work focusing on prior work on smart home using IOT. The section 3 states the overview spectrum & taxonomy of Smart home. The section 4 presents design and development of smart home using IOT. Finally, concluded with future extension in the Section 5.

# Well-Posed Learning Problems and Designing Learning System

Dr. Kothuri Parashu Ramiulu<sup>1</sup>, Dr. Jogannagari Malla Reddy<sup>2</sup>  
<sup>1</sup>Associate Professor, Indur Institute of Engineering & Technology  
<sup>2</sup>Professor, Mahaveer Institute of Science & Technology

**Abstract**—Machine learning is the study of computer algorithms that can improve automatically through experience and by the use of data. It is seen as a part of artificial intelligence. A computer program is said to learn from experience with respect to some set of tasks and performance measure, if its performance at set of tasks improves with experience. A well-defined learning problem will have the features like class of tasks, the measure of performance to be improved, and the source of experience examples. To get a successful learning system, it should be designed properly, for a proper design several steps may be followed for perfect and efficient system.

**Index Terms**— Direct feedback, Indirect feedback, Estimating Training Values, LMS, Performance System, Generalizer, Critic, Experiment Generator.

## I. INTRODUCTION

A computer program is said to learn from experience E with respect to some set of tasks T and performance measure P, if its performance at set of tasks in T, as measured by P, improves with experience E. A well-defined learning problem, have to identify three features: The class of tasks, the measure of performance to be improved, the source of experience Examples [3]. The various examples are Checkers game: A computer program that learns to play checkers might improve its performance as measured by its ability to win at the class of tasks involving playing checkers games, through experience obtained by playing games against it.

A checkers learning problem: Task T→playing checkers, Performance measure P→ percent of games won against opponents, Training experience E→ playing practice games against itself. The checkers game board will be as in figure 1.1.

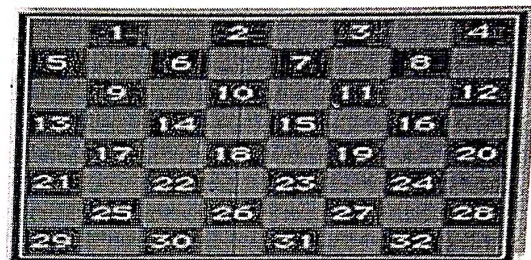


Figure 1.1

A handwriting recognition learning problem: Task T→recognizing and classifying handwritten words within images, Performance measure P→ percent of words correctly classified, Training experience E→a database of handwritten words with given classifications.

A robot driving learning problem: Task T→ driving on public four-lane highways using vision sensors [2], Performance measure P→average distance travelled before an error (as judged by human overseer) Training experience E→ a sequence of images and steering commands recorded while observing a human driver

## II. DESIGNING LEARNING SYSTEM

To get a successful learning system, it should be designed properly, for a proper design several steps may be followed for perfect and efficient system [1]. The basic design issues and approaches to machine learning are illustrated by designing a program to learn to play checkers, with the goal of entering it in the world checkers tournament

1. Choosing the Training Experience
2. Choosing the Target Function
3. Choosing a Representation for the Target Function
4. Choosing a Function Approximation Algorithm
  - a. Estimating training values
  - b. Adjusting the weights
5. The Final Design



# Real Time Object Detection based on YOLOv3 using Python

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**Abstract**— Object Detection is one of the stimulating tasks in the applications of Computer Vision. Computer Vision is an AI discipline, empowering computers and systems to extract significant insights from digital images, videos, and various forms of visual data. Object detection is the identification of objects by the help of properties like size, shape, color etc. in our environment. It is gaining a lot of attention in many real time applications such as surveillance, self-driving cars, detection of number plates at the traffic signals, detection of vehicles in the parking slot and detection of animals in agriculture farm etc. It can recognize objects in different formats like images, video, and live stream. In this presentation we are using the YOLO algorithm which uses Convolutional Neural Network which can process Single forward direction. In the implementation we are creating and designing YOLOv3 model for the detection of objects. You Only Look Once (YOLO) based model comes under the Deep Learning approaches. This model contains three main files: COCO (names dataset), YOLO (configuration file) and WEIGHTS (measurement dataset). These files are added to python modules through the present directory. The YOLO model can present better computer vision and give the best output through images, videos, or live stream.

**Keywords**—Object Detection, YOLO, Convolutional Neural Network, YOLOv3 model, COCO dataset, WEIGHTS dataset, Neural Network, image, video, live stream, objects.

## I. INTRODUCTION

In the realm of computer vision, object detection refers to the process of recognizing and precisely localizing objects within images or videos. It is an important part of many applications, such as surveillance, self-driving cars, or robotics and it also includes detecting people, cars, chairs, stones, and buildings. By utilizing abundant annotated visuals during the training phase, object detection models are equipped to effortlessly process new data, allowing users to input visuals and receive output visuals with comprehensive annotations.

### A. Computer Vision

Computer vision, an AI discipline, empowers computers and systems to extract valuable insights from digital images, videos, and various visual inputs, enabling them to make

informed decisions or provide recommendations based on the derived information. While AI grants computers the ability to think, computer vision equips them with the power to visually perceive, observe, and comprehend their surroundings.

By training machines to fulfill these functions, computer vision enables a system to efficiently examine products or monitor production assets, rapidly analyzing thousands of items or processes per minute. This allows for the detection of imperceptible defects or issues that may surpass the capabilities of human observers.

### B. YOLO

YOLO is short form of "You Only Look Once" which refers to an algorithm that performs real-time object detection and recognition in images. In YOLO, object detection is approached as a regression problem, yielding the probabilities of different classes for the detected objects.

Utilizing convolutional neural networks (CNN), the YOLO algorithm excels in delivering real-time object detection. True to its name, this algorithm accomplishes object detection by performing a single forward propagation through a neural network, eliminating the need for additional iterations.

This paper presents the development of YOLOv3 model using Python libraries and YOLO datasets. The organization of paper as follows. Section 2 describes the related work focusing on prior work on Object Detection based on YOLOv3. Section 3 states the Existing System of Object Detection and traditional approaches. Section 4 presents the Proposed System of Object Detection. Section 5 exposes the System Architecture of Object Detection. Section 6 presents System Implementation of Object Detection. Finally, concluded with future extension in Section 7 and Section 8.

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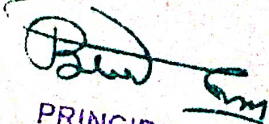
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(57) Abstract :  
ABSTRACT Performance enhancement and cost-effectiveness are the critical factors for most industries. There is a variation in the performance and cost matrices based on the industrial sectors; however, cybersecurity is required to be maintained since most of the 4th industrial revolution (4IR) are based on technology. Internet of Things, IoT, technology is one of the 4IR pillars that support enhancing performance and cost. Like most Internet-based technologies, IoT has some security challenges mostly related to access control and exposed services. Artificial intelligence (AI) is a promising approach that can enhance cybersecurity. This chapter explores industrial IoT (IIoT) from the business view and the security requirements. It also provides a critical analysis of the security challenges faced by IoT systems. Finally, it presents a comparative study of the advisable AI categories to be used in mitigating IoT security challenges.

No. of Pages : 21 No. of Claims : 10

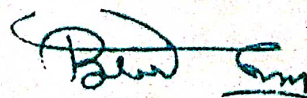
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# Automation of Seating Plan for Examinations using Round-Robin Policy

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**Abstract:** This paper introduces a Python-based Graphical User Interface (GUI) application designed to automate the seating arrangement process for examinations, specifically catering to the needs of examination departments. Leveraging the openpyxl and pandas libraries for Excel file manipulation and creating Dataframes the application aims to replace the laborious manual process traditionally employed by colleges. The main objective is to reduce the time and effort invested by examination departments in seating arrangement tasks. The user-friendly GUI simplifies data input, while the application's algorithm automates seating assignments, ensuring that no two students writing same exam can't sit in same bench in optimal manner using excel and python. Results demonstrate a significant reduction in time spent on seating arrangement, with outputs including detailed room-wise seating sheets and comprehensive summaries listing roll numbers by regulation and branch. This innovative approach not only streamlines examination management but also enhances accuracy and efficiency. From this GUI we can add, edit and delete the halls in which the exams are being conducted. Further we input the excel sheet in which the roll numbers of students were there as per their branch and regulation as input and generates formatted excel sheets that generate seating arrangement. Formatting the font and size of rows and columns and wrapping the columns when required are done automatically.

**Keywords:** Examination Seating Arrangement, Openpyxl, Pandas, Tkinter, Round-Robin.

## I. INTRODUCTION

Seating arrangement play a pivotal role in maintaining order and fairness, especially during examinations, but the manual process of arranging seats can be cumbersome and prone to errors. This research paper delves into the development of an automated seating arrangement system using Python and the openpyxl library, aiming to streamline the process and reduce the workload for examination departments. The traditional manual approach to seating arrangement involves time-consuming tasks, such as posting detailed sheets near examination rooms, which can be replaced by an automated system. Leveraging a user-friendly Graphical User Interface (GUI), the application allows efficient way of inputting data to excel sheets for room no, rows and columns from user and check if the given rooms capacity is sufficient to allocate these students and further generate the seating arrangement by considering the primary goal of significantly reducing the time and effort expended by examination departments. The automated system utilizes a round-robin seating algorithm to ensure a fair distribution of students and prevent individuals from the same group or regulation from sitting adjacent to each other. By taking roll number of student populations, the system can adapt to diverse regulations and academic years seamlessly. The generated outputs include detailed summary sheets for each examination room, visually representing the seating arrangement, and a comprehensive summary sheet categorizing students by roll numbers, groups, and regulations and room number. These outputs help students to check their room numbers and positions as well as Examination cell to make fast decisions during paper distribution. The introduction of an automated seating arrangement system marks a significant improvement in examination management. By harnessing the capabilities of Python and automation, this system not only enhances efficiency but also contributes to the creation of a fair, secure, and streamlined examination environment. The research and development of such systems hold immense potential for revolutionizing administrative processes in educational institutions.

## II. LITERATURE SURVEY

Seating arrangement is one of the primary concerns in the colleges during the hectic examination schedules. It's a time-taking manual process that makes the Examination cell much fussy. In order to reduce this various methods have been proposed previously. However these systems used various algorithms like using random allocation or taking alphabetical order. Later some researchers proposed to use genetic algorithm and graph theories.

# PV- Vortex Blade-less Wind Hybrid System Based Cuckoo Search Maximum Power Point Tracking Algorithm

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<sup>1,2,3,4</sup>Department of Electrical and Electronics Engineering ( Power Engineering and Energy System)  
Mahaveer Institute of Science and Technology, Affiliated to JNTU Hyderabad, Vyasapuri, Bandlaguda,  
Keshavgi, Hyderabad

**Abstract** - Finding a PV-Vortex Blade-less Wind hybrid system with maximum power point using Cuckoo search MPPT is the major objective of this article Blade-less freestanding hybrid systems employing wind and solar energy may now be built at a fraction of the cost. It is difficult to keep up with quickly changing environmental circumstances using typical MPPT algorithms (incremental conductance, P and O, and particle swarms). The Cuckoo Search Algorithm (CSA), an evolutionary algorithmic approach, is used to find the best quantity of electricity. For both WIND and PV, the DC-DC step-up boost converters are being employed using the CS artificial intelligence technique. After the maximum power point tracking technique is proposed to the DC link or DC loads, the DC/DC converters raise the voltage of the two sources. Matlab Simulink is used to develop and verify the outcomes of the Blade-less hybrid system.

## 1.INTRODUCTION

The amount of electricity that is being used is rising at a faster rate than the amount of power that is available. Because of these two problems, one approach is to use renewable energy sources that are infinite and non-polluting to generate electricity. Many benefits may be which may be found in renewable energy resources such as wind and solar electricity The horizontal axis wind turbine, the vertical axis wind turbine, and the Darius wind turbine are among the many wind turbines that have been produced throughout the years. However, these turbines have a number of downsides, including large initial investment prices, noise and bird deaths, as well as a lack of constant wind supply. It is possible to generate power using solar, but the problem is that solar is not accessible at night and does not produce electricity. As a result, employing a single renewable energy source may not be sufficient to fulfil

the system's demands, and therefore a hybrid system is created by mixing different sources [2, 3]. Hybrid power production systems [4-6] employ more than one source of energy to generate electricity and may be used to operate the load in the event that one is unavailable. Self-contained Although the typical wind turbine has drawbacks including higher wind speed requirements, high investment costs, the murder of birds, and excessive noise, the solar wind hybrid power producing system makes use of both the sun and the wind as its sources of energy. The Blade-less wind turbine's notion of vortex-induced vibrations is superior to the conventional horizontal-axis wind turbine design in many ways [4]. The oscillatory movements induced by wind moving through a building are known as vortex vibrations. In order to convert these oscillations into electrical energy, devices such as piezoelectric cells, crank and shaft mechanism, linear alternator, and transducer [7] may be employed. However, they provide small energy and need a lot of maintenance. A high gain step-up DC-DC converter might be used instead of a regular boost converter if the quantity of energy that can be produced is a concern. To reduce filter requirements and output energy total harmonic distortion, a three-level inverter may be used instead of a normal two-level inverter.

## 2.RENEWABLE ENERGY SOURCES

### 2.1 Introduction:

There has been a continuous growth in the need for renewable energy sources due to the shortage of fossil fuels and the effect of global warming. Due to advances in power electronics, solar and wind energy



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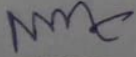
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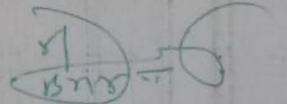
It is hereby informed to all the MBA Students that **National Institute of Securities Markets** is conducting a two day workshop on **16<sup>th</sup> and 17<sup>th</sup> of October, 2023** at 9.30 am in the **Department of Management Studies**. All the students are informed to attend this program as it will give better understanding of the **securities market** and will help to find career opportunities in Securities Markets. Participants will be given **e-certificate** after the successful completion of the program.

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**SECURITIES MARKETS**

**16<sup>th</sup> & 17<sup>th</sup> October, 2023**

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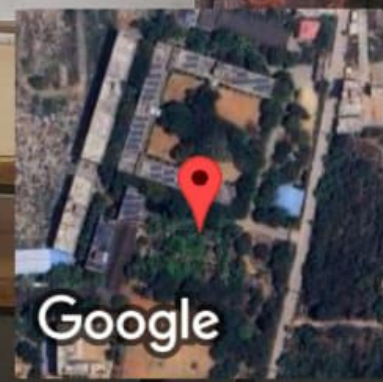
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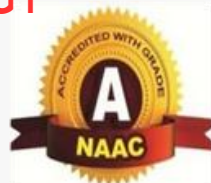
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