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NAAC "B++" Grade



NATIONAL CONFERENCE ON

"ROLE OF ENGINEERS IN NATION BUILDING"

In Association with



**15TH & 16TH
MARCH 2024**

NCRENB - 2024

ISBN: 978-81-950600-8-5

VIVA-TECH IJRI ISSN: 2581-7280



www.viva-technology.org

Proceedings of
12th National Conference on Role of Engineers in Nation
Building
(NCRENB-2024)

15th and 16th March 2024

Organized by:



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Published by: VIVA Institute of Technology, Virar, Maharashtra

VIVA Institute of Technology (VIVATECH, Virar -401305, Maharashtra)

*Proceedings of 12th National Conference on Role of
Engineers in Nation Building
(NCRENB-2024)*

ISBN: 978-81-950600-8-5

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Published by Dr. Arun Kumar, Principal VIVA Institute of Technology

PREFACE

On behalf of VIVA Institute of Technology, I take great pleasure and pride to formally welcome you all to the 12th National Conference on Role of Engineers in Nation Building (NCRENB 2024) in association with VIVA-TECH International Journal for Research and Innovation (VIVA-TECH IJRI), and ICT Academy.

We are living in an age of remarkable competition of technology among the countries. In this competition we need to consider the role of Engineers in development of our nation. Looking at the immense rise in the technological area and the demands that are being placed, it is necessary for us to commence researches that will help to build a technologically advanced nation. The national/ international conferences provide common platform to contemplate the issues related to latest developments in the technology, research and development activities in this area.

We held the first national conference in 2013 with various disciplines such as Civil Engineering, Computer Engineering, Electronics & Telecommunication Engineering, Electrical Engineering, Mechanical Engineering, Humanities and Sciences and Master of Computer Applications.

NCRENB 2024 has received total 145 papers in 7 tracks. The selected full length papers will be sent for VIVA-TECH IJRI journal and UGC Care journal. These papers can be used as a reference for future work which will widen the horizon of technical advancement of our nation.

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PAPER ID: CIVIL_01

WASTE PLASTIC USE IN ROAD CONSTRUCTION

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Abstract : *The review explores the use of Advanced System Simulator (HFSS) software to*
Abstract : *The study includes the preparation of waste plastic used in flexible road pavement. The last decade due to ever-growing environmental concerns, the use of waste plastic has gained momentum and acceptance. Plastic provides the advantage of being economical and waterproof at the same time. Plastic waste is one such resource, a major component of solid waste that is abundantly available and disposed of without proper treatment. There has been an exponential growth in municipal plastic waste disposal especially in urban areas which deteriorates the beauty of the landscape. Plastic was found to be an effective binder for bitumen mixes used in flexible pavements. This efficient method helps the pavements to resist higher temperatures by minimizing the formation of cracks and reducing rainwater infiltration which otherwise leads to the development of potholes. These pavements have shown improved crushing and Abrasion values and Reduced water seepage. Plastic roads would be a boon for India's hot and extremely humid climate, where temperatures frequently cross 50°C and torrential rains create havoc, leaving most of the roads with big potholes.*

Keywords – Plastic Road, Aggregate, Plastic wastes, Bitumen, Plastic-bitumen-Aggregate mix.

PAPER ID: CIVIL_02

INSULATED CONCRETE FORMWORK

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Abstract: *Insulating Concrete Formwork (ICF) represents a durable and cost-effective construction system widely employed in Europe and North America for diverse building projects. This innovative approach utilizes lightweight formwork crafted from insulating materials to provide support for in-situ concrete wall casting, with the formwork left in place to serve as built-in insulation. The resultant ICF structures offer comprehensive thermal insulation for the building's walls, presenting a seamless surface for the direct application of finishes and cladding systems. As indicated by literature reviews, ICF outperforms conventional building systems, boasting 10% greater airtightness and a 15% cost-efficiency advantage. Furthermore, ICF panel cubes exhibit impressive characteristics, including a 40% increase in compressive strength and a 10% improvement in thermal resistance compared to PCC cubes, demonstrating ductile failure rather than brittle failure. The ongoing project entails the casting of a 150mm * 150mm cube sandwiched between ICF panels of varying thickness (50mm and 100mm). This experimentation aims to evaluate compressive strength, thermal insulation, and water/moisture absorption, while also conducting a comparative analysis of the cost implications between conventional formwork and ICF panels.*

Keywords-

Awareness, Economic Viability, Heat Insulation, Axial Compressive Durability.

PAPER ID: CIVIL_03
**APPLICATION OF METAKAOLIN IN HIGH
PERFORMANCE CONCRETE**

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Abstract : *Cement concrete is the most extensively used construction material. Maintenance and repair of concrete structures is a growing problem involving significant expenditure. As a result, carried out worldwide, it has been made possible to process the material to satisfy more stringent performance requirements, especially long-term durability. HPC is the latest development in concrete. It has become very popular and is being used in many prestigious projects such as nuclear power projects, flyovers multi-storeyed buildings. When using HPC, the addition of supplementary materials in cement has dramatically increased along with the development of concrete industry, due to the consideration of cost saving, energy saving, environmental concerns both in terms of damage caused by the extraction of raw materials and carbon dioxide emission during cement manufacture have brought pressures to reduce cement consumption. Metakaolin looks to be a promising supplementary cementitious material for high performance concrete. Properties of concrete with metakaolin is mostly preferred additives in high performance concrete. A possible lower cost, due to large availability in our country itself may be advantages to metakaolin usage in HPC. The substitution proportion of metakaolin is to be used was 5%, 10%, 15%, 20% by the weight of cement. To make this cubes and cylinders to determine the strength and durability of concrete of it. The results indicate that the replacing mix up to till last percent has to noted and effect on strength in comparing with mixer without metakaolin.*

Keywords – *Concrete mix, Compressive strength, Flexural strength, High performance concrete, Metakaolin, Split Tensile strength*

PAPER ID: CIVIL_04
**EXPLORING THE FEASIBILITY OF REPURPOSING WASTE
RICE HUSK AND OLD NEWSPAPER AS FIBER
COMPOSITES FOR CONCRETE ENHANCEMENT**

Prashant Gondane¹, Yash Gawai², Aditya Dalvi³, Akash Kokare⁴
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Abstract: *This study explores an innovative approach to produce fiber-cement panels for prefabricated building panels by incorporating waste rice husks and old newspapers. This eco-friendly method not only addresses waste management issues but also provides a cost-effective solution to the construction industry. With growing environmental concerns, natural fibers have garnered significant attention in recent years. This research focuses on utilizing rice husks, an agricultural byproduct, as a natural fiber for bio composites, offering an economical and sustainable alternative to conventional engineering materials. Additionally, the study examines the suitability of rice husks as fibers with various polymers, along with different modification techniques to enhance their mechanical properties. The research provides insights into the manufacturing process of rice husk-based bio composites, offering valuable*

information on potential future applications. The findings suggest that incorporating rice husks and old newspapers into natural fiber cement boards for building partitions is a feasible option. By developing products based on natural fiber-reinforced composites, traditional engineering materials can be replaced with alternatives that offer low cost, low density, competitive specific mechanical properties, and sustainability, making them suitable for the construction industry. However, numerous challenges remain, necessitating further research and development in this field.

Keywords – Cement Fiber Panel, Rice Husk, Old Newspaper, Economical, Building Partition, Physical Properties.

PAPER ID: CIVIL_05
HYBRID BRICK

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Abstract: *The construction industry is one of the largest consumers of natural resources and generates a significant amount of waste, including plastic waste and construction and demolition (C&D) waste. Conventional methods of waste management often lead to environmental degradation and resource depletion. Thus, there is growing need to explore sustainable alternatives for waste utilization and reduction. The manufacturing process involves sorting, cleaning, shredding the plastic waste, followed by mixing it with crushed C&D waste particles. The incorporation of plastic waste enhances the thermal and sound insulation properties of the bricks, while C&D waste provides structural strength and stability. The hybrid bricks exhibit promising mechanical properties, including compressive strength, water absorption, and density, meeting the standards for construction materials. This study highlights the potential of hybrid bricks as a sustainable solution for waste management in the construction industry. By promoting the utilization of plastic waste and C&D waste in brick production, this approach not only reduces environmental pollution but also conserves natural resources and supports the transition towards a circular economy.*

Keywords: *Construction and Demolition waste, Plastic, Brick*

PAPER ID: CIVIL_06
**PARTIAL REPLACEMENT OF COCONUT SHELL AND
COCONUT FIBRE AS COARSE AGGREGATE IN
CONCRETE**

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Abstract : *Concrete structures require a combination of strength, durability, serviceability, and longevity. This project aims to study the strength parameters of concrete by adding coconut fiber to both controlled and coconut shell concrete. The study also explores the potential use of coconut shell and fiber in building materials. The project focuses on*

evaluating the compression strength, split tensile strength, and flexural strength of concrete with coconut fiber volume fractions ranging from 1% to 8% in both conventional and coconut shell concrete. The optimized percentage of coconut fiber is determined to be 5% and 4% for conventional and coconut shell concrete, respectively. Finally, the study examines the mechanical properties, such as split tensile and flexural strength, of both conventional and coconut shell concrete with the optimized percentage of coconut fiber.

Keywords : [1]Coconut Shell [2]Coconut Fibre [3]Coir Fibre [4]Split Tensile [5]Compressive Strength

PAPER ID: CIVIL_07

APPLICATION OF GEOSYNTHETIC IN FLEXIBLE PAVEMENT

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Abstract: *In India, roads often suffer from issues such as potholes, cracks, and localized depressions and settlements, particularly during the rainy season. These problems stem from the subgrade soil's insufficient bearing capacity when it becomes water-saturated, with low CBR values of 2-5%. As per the CBR method of pavement design (IRC:37-2012), the pavement thickness increases exponentially as the CBR value of the subgrade soil decreases, resulting in higher construction costs. Therefore, researchers have attempted to enhance the subgrade's bearing capacity by utilizing geogrid materials. Soil samples are tested in the laboratory with and without the inclusion of a geogrid layer, and by altering its position in the mold. The use of geogrid increases the CBR value of the subgrade, reducing pavement thickness by up to 40%.*

Keywords – Geogrids, Reinforcement, CBR Value, Flexible Pavement, Subgrade, Expensive Soil.

PAPER ID: CIVIL_08

DEMONSTRATION OF SMART IRRIGATION USING HYDROPONIC FARMING

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Abstract: *With the entry of civilization, open field/ soil- grounded cultivation is confronting a few major challenges; most imperatively drop in per capita arable land. In 1960 with 3 billion populace over the World, per capita arable was 0.5 ha but by and by, with 6 billion individuals it's only 0.25 ha and by 2050, it'll reach at 0.16 ha. Due to rapid-fire urbanization and industrialization as well as dissolving of ice caps (as an appalling affect of worldwide warming), agriculture beneath civilization is assist progressing to drop. Once more, soil richness status has achieved a achromatism position, and efficiency isn't including assist with expanded position of soil operation. either, destitute soil richness in a few of the cultivable ranges, lower chance of characteristic soil richness figure- up by organisms due to nonstop civilization, visit disappointment conditions and eccentricities of climate and precipitation designs, rise in temperature, soil contamination, destitute water operation and annihilation of colossal quantum of water, decrease in ground water position, etc. are hanging nourishment item beneath routine soil- grounded cultivation. Beneath comparable circumstances, in close future it'll come insolvable to bolster the complete populace utilizing open field framework of*

agrarian item as it were. Normally soil-less culture is getting more pertinent within the show script, to oversee- up with these challenges. In soil-less culture shops are raised without soil bettered space and water preserving styles of nourishment item undersoil-less culture have appeared a few promising comes about each over the World.

Keywords- *Aeroponics, hydroponics, nutriculture, open field agriculture, soil-less culture.*

PAPER ID: CIVIL_09
GREY WATER RECYCLING TEST ON PRELIMINARY MATERIALS

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Purva Awari⁴

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Abstract: *Greywater recycling is a practice that is becoming more and more popular for water conservation and minimizing the environmental effect of homes and buildings. Greywater can be treated and repurposed for non-potable uses including irrigation, toilet flushing, and laundry. Greywater is the wastewater produced by sources like sinks, showers, and washing machines. The significance of recycling greywater, its advantages, and the numerous greywater treatment methods are the main topics of the abstract. The abstract also discusses some of the potential drawbacks of recycling greywater, like upkeep costs and safety issues. Greywater recycling ultimately has the ability to drastically cut water usage, lessen the effects of droughts, and improve sustainable water management techniques.*

Keywords - *Grey water, Recycling, Sustainable living, Treatment systems, Water conservation.*

PAPER ID: CIVIL_10
ADVANCE ROAD SAFETY FOR GHAT ROADS

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Abstract : *Kolli Hill Road in Tamil Nadu, known as the 'Mountain of Death' thanks to its 70 continuous hairpin bends. At just 94km in length, and only 10 years old, the six-lane Mumbai– Pune Expressway seems tame by comparison. Yet it has 52 known blackspots and claims an average of 140 lives each year. The road is 46.7km (29 miles) long. It starts at Kalappanaickenpatti and 70 continuous hairpin bends take you to Kolli Malai or 'the mountains of death'. Riding through these hairpin bends is an exhilarating experience. he proposed system makes use of sensors at hairpin curves which work very efficiently during the night time. Placing the sensors at each side of the curves will help us to solve the problem. The usage of sensors is that if the vehicle is 10 meters away from the curve the sensor sends the signal to the vehicle coming in opposite direction in the form of light. In the same way the sensor at the other side of the curve will send signal to the vehicle coming from the opposite direction. In this way by using sensors we can avoid a greater number of accidents mainly at the deep curves. And This project proposes an innovative road safety system integrating GPS and GSM technologies to enhance emergency response. The system includes an emergency*

button in vehicles, allowing drivers to quickly alert authorities in case of accidents or emergencies. GPS enables real-time location tracking, while GSM facilitates immediate communication between the vehicle and emergency services. This integrated solution aims to reduce response times, enhance overall road safety, and potentially save lives by ensuring swift and precise assistance during critical situations.

Keywords – Reflectors, PIR sensors, Kasara ghat, reflectors, rolling barriers, GPS, GSM, Buzzer

PAPER ID: CIVIL_11
**CONSTRUCTION OF BITUMEN ROAD WITH BASALT
ROCK FIBER AND PLASTIC WASTE**

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Abstract : *The construction of bitumen roads has been a cornerstone of modern transportation infrastructure. However, the traditional asphalt mixtures used in road construction have posed environmental challenges due to their high consumption of non-renewable resources and limited recycling options. In response to these concerns, this project proposes a novel approach to road construction by incorporating basalt fibers and plastic waste into the bitumen mix. Basalt fibers offer improved tensile strength and durability, while the inclusion of plastic waste not only enhances the road's mechanical properties but also addresses the growing issue of plastic pollution. This innovative blend not only contributes to more sustainable road construction but also aligns with the global effort to reduce the environmental footprint of infrastructure projects. This abstract highlight the potential of this eco-friendly road construction technique, promoting a greener and more efficient future for transportation infrastructure. The construction of bitumen pavement with basalt fibers and plastic waste is an innovative approach to improving the durability and sustainability of road infrastructure. Basalt fibers are derived from natural volcanic rock and can enhance the mechanical properties of asphalt, making it more resistant to cracking and rutting. Additionally, incorporating plastic waste into the asphalt mix can help reduce the environmental impact of road construction by recycling plastic materials. This approach has several benefits: Increased Durability: Basalt fibers enhance the tensile strength and fatigue resistance of asphalt, resulting in longer-lasting pavements. Overall, the combination of basalt fibers and plastic waste in bitumen pavement construction represents a promising step towards more sustainable and resilient road.*

Keywords: - Basalt rock fiber, Bitumen, Durability, Ecofriendly, Plastic waste.

PAPER ID: CIVIL_12
**ANALYSIS OF DROUGHT IN VIDARBHA REGION,
MAHARASHTRA USING MATLAB THROUGH SPI
(STANDARDIZED PRECIPITATION INDEX)**

Prof. Asmita Mhatre¹, Pinaksen Pandey², Roshan Samantara³, Mohd. Bilal Sathe⁴
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Abstract : Drought, one important environmental hazard that is difficult to characterize consistently, which has a complicated nature and a creeping onset. It appears as a result of protracted dry spells with varying degrees of damage between locations. Global water shortages and climate change are making it more severe. Accurate monitoring of the start, course, and spatial extent of drought is essential for effective mitigation. However, climate variables may limit the application of current indexes. Complicating matters further is figuring out the best time frames for assessments. To track drought conditions, the SPI is used. Analysing several SPI timelines enables the gradual development of drought to be examined. The extended research time improves monitoring and catches variability. Consideration of a drought-prone area assesses the usefulness of the SPI for climate change mitigation strategies. This study evaluates the SPI at 1, 3, 6 and 12 -month timescales, utilizing monthly precipitation data from 1984 to 2022 across 11 districts in the Vidarbha region of Maharashtra, India.
Keywords - Standardized Precipitation index (SPI), Hazard, Drought Trend, Monitoring, Vidarbha Region.

PAPER ID: CIVIL_13
**WATERWAYS TRANSPORTATION PLANNING IN
COASTAL CITIES**

Prof. Yadnesh Patil¹, Akash Kohli², Siddhant Dharne³, Dipesh Kene⁴
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Abstract : Mumbai is India's second most populous metropolis and the world's eighth most populous city, hence providing effective transit facilities is critical. Mumbai's transportation system is under strain due to the city's growing population and migration, resulting in traffic jams and crowding. This study provides a brief summary of the research conducted on the design and development of canal transportation along coastal cities. The many case studies. The transportation modes, namely trains and roads, fall short of meeting the demands for space and frequency of travel. Furthermore, this study focuses on the application of GIS in mapping and modeling. The report also includes information about active and inactive ferry agencies, as well as their sorts. This contributes to transportation engineering,
Keywords - Inland waterways, routes, transportation, GIS, population

PAPER ID: CIVIL_14
**DUAL RAIL FLOATING BRIDGE MECHANISM FOR
RAILWAY PLATFORM**

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Abstract: Lung cancer is one of the leading causes of cancer deaths worldwide. Early detection In our day- to- day travelling we see people crossing platforms by getting down on track. People generally fall while running from stairs while they're in a rush, in current script staircase are generally crowded and it also gets delicate for senior people. So piecemeal from that we allowed of an indispensable system which can use other than islands, lifts, escalators and help vexation we allowed A 'BRIDGE MECHANISM FOR RAILWAY PLATFORM'. The

ideal of this paper deals with automatic road gate opening at a position crossing without mortal intervention. In the present work it's proposed to substitute completely automated road gate opening point and as well as automated platform ground installation in the station which helps peoples to move from flat form to flat form. Now a day each over the world accidents are common because of lack of technology, mortal neglectfulness at right time. And these accidental walls cannot be fully avoidable but some fruitful way surely reduced to some extent, in account of this the action way is needed to avoid numerous humans' death at any place and time by introducing new technologies, this trouble has been taken in this work by espousing automatic road gate opening without gate keeper near position crossing and automated platform ground. The below said system works on microcontroller grounded fashion and rack and pinion medium which is employed to operate Platform Bridge.

Keywords – Railway Bridge, Rack and Pinion Mechanism

PAPER ID: CIVIL_15
COMPARING RCC AND STEEL STRUCTURE OF G+1
RESIDENTIAL BUNGALOW

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Abstract: Building construction is an ancient human activity. It began with the purely functional need for a controlled environment to moderate the effects of climate. Constructed shelters where one means by which human beings were able to adapt themselves to a wide variety of climates and become a global species. The Construction planning is an important step when building a structure because it outlines the project and provides guidelines to ensure the project is a success. Planning as per the client requirements and drafting the same using AutoCAD software. Planning is done keeping in mind the basic requirements of humans like water supply, electrical connectivity, sewage. The planning is done as per the building by laws rules and regulations. Design establishes the overall concept for the structure. Then, the civil structural engineer does structural analysis to see if the proposed structure, and its materials, will with stand the expected loads and forces.

Keywords – Planning, Design, ETABs, AutoCAD

PAPER ID: CIVIL_16
BIO MIMICRY IN CIVIL ENGINEERING

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Abstract : With thousands and thousands of years of natural evolution, organisms have done state-of-the-art structures, patterns or textures with complicated, spontaneous multifunctionality. amongst all of the captivating traits found in biosystems, Because of its applications in a variety of industries, including aerospace, strength conversion, biomedical, and environmental safety, self-cleaning potential is seen to be one of the most fascinating issues in biomimicry. currently, in-intensity research was finished on numerous compelling biostructures such as lotus leaves, shark skins, butterfly wings and gecko feet. Paints are

broadly used in residential and commercial homes. The surface areas that these coatings typically shield is typically rather large. The indoor air quality will be significantly impacted by the volatile natural compound (VOC) emissions from these types of materials. This study summarizes and discusses current developments in self-cleaning techniques with the goal of understanding and imitating their self-cleaning mechanisms in synthetic materials. The techniques are divided into groups according to the fundamental self-cleaning mechanisms Self-cleaning both in and out of water The review provides a brief explanation of the distinct methods and biomimetic techniques used to produce artificially cleaning itself surfaces and materials. It also provides some samples of packages that include micro-manipulators, anti-reflection, water repellence, self-healing, and anti-fogging features. In brief, there are also recommended prospects and guidelines for destiny development.

Keywords -multifunctionality, compelling biostructures, shark skins Corrosion, coating properties, Thermal spray, micro-manipulators

PAPER ID: CIVIL_17

Tensegrity of Structure (Bridge Structure)

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Abstract : *Due to the complex structure of tensegrity systems it is often hard to understand their behavior and estimate their mechanical properties. As a result, they are rarely used in real engineering applications. The present paper focuses on the evaluation of equivalent mechanical properties of various tensegrity modules based on a continuum model. The aim of the applied model is to facilitate the identification and understanding of mechanical characteristics of tensegrities through their comparison with a continuum body with equivalent features. The model is built by assuming that the strain energy of an unsupported tensegrity module or structure is equivalent to the strain energy of a solid. The approach enables to estimate the influence of self-stress on deformation of the structure, identify the influence of cables and struts on the properties of the whole system, determine equivalent mechanical characteristics, such as Young's moduli, shear moduli, Poisson's ratios etc., and conditions that limit their values. What is more, a qualitative as well as quantitative evaluation and comparison of mechanical properties for various tensegrity modules and systems is possible with the use of the applied technique. A comprehensive analysis of typical tensegrity modules with various elastic symmetries is presented. Using the adopted model, mechanical characteristics are determined and graphs of identified mechanical coefficients for five typical tensegrity modules are presented in relation to the self-stress multiplier and cable to strut properties ratio. The analysis can be useful for the development of extreme mechanical properties of smart tensegrity- inspired 2D or 3D lattices or metamaterials. Tensegrity Structures consist of strings (in tension) and bars (in compression). Strings are strong, light, and foldable, so Structures have the potential to be light but strong and deployable. pulleys, Nitti wire, or other actuators to selectively tighten some strings on a tensegrity structure can be used to control its shape. This article describes some principles we have found to be true in a detailed study of mathematical models of several tensegrity structures. We describe properties of these structures which hold quite generally. We describe how pretending all strings of a tense pity makes its shape robust to various loading forces. Another property asserts that the shape of a tensegrity structure can be changed substantially with little change in the potential energy of the structure. Thus shape control should be in expensive. This is in contrast to the control of classical structures which require substantial energy to change their shape.*

Keywords - *Comprehensive analysis, Lattices. Mechanical characteristics, Tensegrity.*

PAPER ID: CIVIL_18
**WATERPROOFING OF G+3 RESIDENTIAL BUILDING
WITH THERMAL CHECKING**

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Abstract: *Waterproofing a G+3 residential building while utilizing thermal leakage checking is a multifaceted approach aimed at fortifying the structure's durability, energy efficiency, and occupant comfort. This integrated method combines waterproofing techniques, such as membranes and sealants, to prevent water intrusion, with thermal leakage checking via advanced imaging technology to identify heat transfer issues. By addressing both water ingress and energy inefficiencies, this approach ensures a resilient and thermally optimized living environment within the building.*

Keywords- *Thermal, Waterproofing, leakage, cracks, chemicals*

PAPER ID: CIVIL_19
Stabilization of Black Cotton Soil using Plastic Strips

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Abstract : *Soil stabilization is a process that improves the physical properties of the soil, such as increasing shear strength, bearing capacity, etc. This can be done by using controlled compaction or adding suitable mixtures like cement, lime, and waste materials like fly ash, coconut shells, etc. The cost of introducing these additives has also increased in recent years which opened the door widely for the other kinds of soil additives such as plastic, bamboo, etc. This new technique of soil stabilization can be effectively used to meet society's challenges and reduce waste quantities, producing useful stabilization from plastic waste. The use of plastic products such as polythene bags, bottles, etc is increasing day by day leading to various environmental concerns. Therefore, the disposal of plastic waste without causing any ecological hazards has become a real challenge. Thus, using plastic as a soil stabilizer is an ecological utilization since good soil is scarce for construction. This project involves the study of the possible use of waste plastic. The results of the CBR test have been done on the Aspect Ratio of plastic strips and the percentage of plastic.*

Keywords: *Stabilization, Black cotton soil, Polypropylene, Plastic Strips*

PAPER ID: CIVIL_20
WASTE DISPOSAL TECHNIQUES OF VIVA INSTITUTE OF TECHNOLOGY

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Abstract : *Food trash production rises annually along with the growth in global population. Approximately 1.2 billion tons of waste is produced annually, of which 60 to 70 percent is agricultural waste that is disposed of in landfills. High levels of organic materials in culinary refuse can be used to create renewable energy sources. One of the important energy sources is biogas, which typically includes environmentally hazardous substances like methane, carbon dioxide, and hydrogen sulfide. Biogas can be effectively produced using anaerobic decomposition. Anaerobic digestion is carried out in the lack of oxygen with the assistance of anaerobic microorganisms. This study examined the production of biogas from kitchen refuse on the grounds of the VIVA INSTITUTE OF TECHNOLOGY. Also, by designing a small sewage treatment plant for our institute it will help with the water requirement as well by making use of the waste water and utilizing it for sanitary purposes. The aim of our project is to minimize the waste that is generated from our institute.*

Keywords: *Food trash, Biogas, Landfills, Sewage*

PAPER ID: CIVIL_21
EXPERIMENTAL STUDY ON THERMACOL IN CONCRETE

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Abstract: *The construction industry is experiencing rapid growth, leading to an increased demand for construction materials. To promote sustainable development, it is crucial to explore alternative materials and utilize waste materials. Polystyrene, a non-biodegradable plastic packaging material, can serve as an alternative material for construction and provide an environmentally friendly method of disposal for this waste material. This study aims to analyze the properties of polystyrene-based concrete, including compressive strength and tensile strength, and compare it with conventional concrete. However, this material is having properties such as sound insulation, high thermal conductivity, and lightweight so we can use this material in concrete and the potential of using polystyrene as a lightweight and environmentally friendly material will be explored*

Keywords - *Compressive strength, high thermal conductivity, Polystyrene-based concrete, Sound insulation, Tensile strength*

PAPER ID: CIVIL_22
COMPARISON OF STRENGTH, COST AND
TEMPERATURE BETWEEN NORMAL CONCRETE AND
POLYURETHANE FOAM CONCRETE

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Abstract: Foam concrete is extensively used in civil construction and structure because it has low tone weight and thermal conductivity. We are showing comparison between fine aggregate with polyurethane foam. There are some of the tests which are going to perform as follows compression test and slump cone test in between normal concrete and polyurethane foam concrete for work ability and compressive strength. After testing the cube cast will be performed for seven, fourteen and twenty-eight days. The last step will be a replacement of polyurethane foam by fine aggregate. Basically, foam is partially replaced by fine aggregate 5%, 15%, and 30%.

1. To begin with the first ratio it will be 95% of fine aggregate and 5% of polyurethane foam.

2. The second percentage to be added for foam is 15%.

3. The third percentage to be mixed of foam with aggregate is 30%.

Also, polyurethane foam is a waste product which is out in industry. That we are using in our project as a byproduct. So, there is less pollution occurred in environment. From above test by adding mentioned percentage of foam with aggregate after performing higher compressive strength will be taken as best ratio for final results.

Keywords : polyurethane foam, Foamed concrete, compressive strength.

PAPER ID: CIVIL_23
SOIL INVESTIGATION DATA ANALYSE BY ARC GIS SOFTWARE

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Abstract : This paper presents a case study of piling project and testing of a huge marshy land structure in the northern-western region of Vasai-Virar. The overall pile driving works involved bore hole upto 4 RC piles of an average length over 24 m. Assumption that the bearing capacity of a pile driven into cohesive soil may increase significantly in time (set-up effect), was the reason for the contractor to take the risk to accelerate the testing procedure. Usually, when the load test result indicates insufficient bearing capacity, the testing procedure may be repeated after a period required by the codes of practice. The possible later increase of pile bearing capacity adds up to additional safety margin for the design. In the case of sandy soils, reported values of capacity increase amounting to app. 20% do not affect much pile bearing capacity and the design procedure. It is important to state that some authors have observed an opposite effect called relaxation, which can appear in silty soil. The authors of the paper, however, have never noticed this effect. On the contrary, the numerous static and dynamic

testing of foundation piles designed for marshy land structures project have proved a significant time-dependent increase of bearing capacity of piles driven in silt (reaching app. 67%).

Keywords : Soil investigation , Arc-GIS Software

PAPER ID: CIVIL_24 **TRAFFIC WIND TURBINE**

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Abstract: *The objective of the project is to design a wind turbine to recapture wind energy from vehicles on the highway. Wind energy is considered the fastest growing clean energy source however; it is limited by variable natural wind. Highways can provide a considerable amount of wind to drive a turbine due to high vehicle traffic. This energy is un-used. Extensive research on wind patterns is required to determine the average velocity of the wind created by oncoming vehicles. The wind turbines will be placed on the medians therefore fluid flow from both sides of the highway will be considered in the design. Using all of the collected data, existing streetlights on the medians can be fitted with these wind turbines. Additionally, since the wind source will fluctuate, a storage system for the power generated will be designed to distribute and maintain a constant source of power. Ideally, the turbine can be used globally as an unlimited power source for streetlights and other public amenities. The project's goal is to create a wind turbine that can harness wind energy from passing cars. Although wind energy is thought to be the clean energy source with the quickest rate of growth, it is constrained by erratic wind conditions. Highways may produce a significant amount of wind to power a turbine because of the volume of traffic they see. This power is wasted. To establish the average wind speed caused by approaching cars, extensive research on wind patterns is needed. Since the wind turbines will be situated on the medians, the design will take into account fluid movement from both sides of the road. These wind turbines can be added to the current lamps in the medians using the information gathered. As the wind source will fluctuate a storage system for the power produced will also be created in order to distribute and maintain a continuous source of power. The turbine should be able to supply streetlights and other public amenities with limitless power on a worldwide scale.*

Keywords - Traffic vehicle, Highway, VAWT Self-powered applications, Wind energy

PAPER ID: CIVIL_25 **A REVIEW STUDY ON- QGIS BASED WORLI WARD DEVELOPMENT**

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Abstract : *This paper offers a review on the theoretical and practical use of qgis .Many individuals are deterred from utilizing geographic information system (GIS) software due to its high cost, which can hinder their ability to create maps and analyze spatial data. However, there is a free GIS software option available called Quantum GIS (QGIS) that can provide*

similar functionality to more expensive proprietary software. This fact sheet aims to introduce readers to QGIS and demonstrate its versatility by guiding them through basic GIS processes, such as creating land-cover maps and heatmaps, for various fields including natural resources, agriculture, and urban planning. This document is suitable for individuals who are interested in incorporating GIS into their work but cannot afford expensive software, as well as those looking to learn a new GIS software package.

Keywords – Spatial Data , Quantum , Versatility, Urban Planning.

PAPER ID: CIVIL_26
**A REVIEW ON PHYTORID TECHNOLOGY ON WASTE-
WATER TREATMENT**

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Abstract: *In view of rising concern about pollution of water bodies due to discharge of waste in them, it is necessary to initiate alternative thinking as conventional methods through STPs (Sewage treatment Plants) have had limited success. In recent years the application of specifically designed wetland-based technology (popularly known as Phytorid technology) for treatment of wastewater- municipal, urban and agricultural, is becoming widely acceptable. It treats the wastewater in natural manner without the use of chemicals. Phytorid technology is such a type of system, which reduces the impact of sewage and converts into useful water for gardening and irrigation purpose.*

Keywords : *Constructed wetland, wastewater treatment, locally available Phytorid plants species and Phytorid technology.*

PAPER ID: CIVIL_27
COMPARATIVE STUDY OF MOFA AND MAHARERA

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Abstract : *The Real Estate (Regulation and Development) Act, 2016 is an Act of the Parliament of India which seeks to protect home-buyers as well as help boost investments in the real estate industry. The bill was passed by the Rajya Sabha and the Lok Sabha in March 2016. The Act came into force from 1 May 2016. Remaining provisions came into force from 1 May 2017. The objectives of this act are to Ensure Transparency & Efficiency in real estate sector in regards to sale of plot, apartment, building or real estate project; Protecting the interest of consumers in real estate sector; Establishing adjudicating mechanism for speedy dispute redressal and Establishing Appellate Tribunal to hear appeals from the decisions, directions or orders of the Real Estate Regulatory Authority. Prior to RERA, there was no clarity on carpet area, was sort of monopoly of Builders regarding loading, rates, modes of payments. There were Frauds, no clear picture of project, possession, sanctions. An attempt has been made to find out the immediate impact of this act on the Builders, and the customer. The scope of study is limited to Mumbai area*

Keywords : *Real Estate Act, MOFA, MHA, MahaRERA*

PAPER ID: CIVIL_28
**MODERN LANDFILL PROCESS AND UTILIZATION OF
LANDFILL GASES**

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Abstract : *Waste generation is increasing day by day with the growth of population which directly affects the environment and economy. Consequently, there are millions of tons of solid waste being produced every year which have to be safely disposed without any negative impact to the environment. On the other hand, as one of the driving forces for economic and social development the availability of energy in sufficient and sustainable amount has been becoming world's main interest. However, depending on the way the energy is produced, distributed and used, it may contribute to environmental problems such as water, land and air pollution or even global climatic change. Waste from the Municipal Solid Waste (MSW) contributes towards maximum waste generation in India. Thus, management of waste is very much essential with the increasing demand for energy. This paper mainly focuses on reviewing solid waste management potentials, its technologies, and the associated challenges. Solid waste can be easily managed by forming the layers of landfill and the hazardous effects can be reduced by utilizing the gases emitted through this method.*

Keywords : *landfill gas, methane recovery, carbon credits, anaerobic digestions*

PAPER ID:COMP_01
PHARMA-EASY

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Abstract : “Pharma-Easy” is an innovative e-commerce platform revolutionizing the pharmaceutical industry. This research facilitates the sale of a comprehensive range of medicines while introducing a unique approach to pharmaceutical sustainability. In addition to providing a diverse catalog of medications, Pharma-Easy offers exclusive discounts on medicines nearing expiration. By alerting users to upcoming expirations and incentivizing purchases of these medications at discounted rates, the platform not only ensures affordability for customers but also minimizes pharmaceutical waste. z’Pharma-Easyz’ also analyzes the customer request and provides proper medications available based on the prescriptions of the user. Through secure transactions, prescription verification, and prompt delivery services, Pharma-Easy aims to redefine the e-commerce landscape by combining convenience with a commitment to accessibility, affordability, and sustainability in the pharmaceutical sector. By addressing current challenges in emergency medical services, the research recognizes the critical importance of rapid access to healthcare during medical emergencies, acknowledging that swift response can be a matter of life and death.

Keywords – Affordable healthcare, E-commerce, Pharma-Easy, Medicines, Healthcare accessibility.

PAPER ID: COMP_02
Review on AI Fitness Gym Trainer

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Abstract: This review presents a convincing analysis of the Personal AI Gym Trainer, showcasing it as a ground-breaking development in tailored training and fitness. Priority is placed on the application of cutting-edge artificial intelligence technologies, showcasing the system's capacity to provide a customized and thorough workout experience. Personalized workout plans, nutritional guidance, and progress tracking are made possible by the multi-modal approach, which combines voice commands, facial recognition, and instantaneous data processing. The trainer's capacity to adjust to each person's preferences, physical capabilities, and goals is clearly communicated in the paragraph, which highlights the trainer's dedication to providing highly individualized training programs that maximize efficiency and minimize risk of injury. Reviewing the technology's transformational potential overall, it highlights its salient characteristics, advantages, and potential applications, and suggesting a revolutionary impact on individuals' engagement with fitness routines and overall well-being.

Keywords - Artificial intelligence technology, exercise routines, fitness routines, motivation, nutritional guidance, personalized training, progress tracking, tailored experience, transformative technology, revolutionize, well-being.

PAPER ID: COMP_03
NISARCHANA

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Abstract: The construction industry stands as a dynamic force, sculpting the very fabric of societies across the globe. Yet, amidst this dynamism, traditional project management methods have proven inadequate in the face of the evolving demands of modern construction endeavors. It is within this context that a groundbreaking construction application emerges, meticulously designed to surmount these challenges. This revolutionary app represents a paradigm shift in how construction projects are planned, executed, and monitored. By seamlessly integrating cutting-edge technology with tried-and-true construction principles, it promises to streamline operations and enhance productivity across the board. Its intuitive interface empowers project managers, architects, and workers alike, providing them with real-time access to critical data, schedules, and resource allocations. Furthermore, this app embraces the collaborative nature of construction projects, fostering open communication and cooperation among stakeholders. Through features such as generating 2D-model of infrastructure, predicting height of building by observing the natural calamities. By harmonizing these capabilities, it pledges to greatly amplify efficiency, reduce delays, and maximize resource efficiency. This exploration delves into the app's inception, highlighting its pivotal features and the transformative influence it wields in construction project management, ushering in an epoch of heightened productivity and effectiveness which also helps for empowering labors and selling/buying lands.

Keywords - 2D Model, Construction, Human safety, Machine Learning, Natural calamities, Technology.

PAPER ID: COMP_04
SEVA-ROHI

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Abstract : Our research paper focuses on addressing the issue of accidents caused by speed and aims to save lives by implementing an automatic accident detection system. When an accident occurs, the system utilizes various components to identify it and immediately notifies the emergency services. The key feature is the system's ability to accurately determine the location of the accident using latitude and longitude coordinates, which are then sent to the nearest emergency service provider. The primary objective is to rapidly identify accidents and notify rescue teams promptly to

ensure timely assistance. This research introduces a dedicated mobile application with the primary goal of improving emergency healthcare. The research aims to streamline ambulance dispatch and collaborate with traffic authorities to ensure smooth passage for ambulances. By addressing current challenges in emergency medical services, it recognizes the critical importance of rapid access to healthcare during medical emergencies, acknowledging that swift response can be a matter of life and death.

Keywords - Accident detection, Ambulance, Emergency, Latitude, Longitude, Technology.

PAPER ID:COMP_05
RoadEye - A Safer Drive

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Abstract: *Potholes are a significant inconvenience for drivers and can also result in substantial damage to vehicles. RoadEye is a pothole detection system that uses dashcam footage to identify and report potholes to road maintenance authorities. This system can help to make roads safer and more efficient, and can also save drivers money on repairs. RoadEye uses a deep learning model to identify potholes in dashcam footage. The model has been trained on a large dataset of images of potholes. When the model is presented with a new image, it can identify whether or not it contains a pothole, and if so, it can easily add its location on a map, so that users can be alerted while approaching a pothole. RoadEye can help to improve data collection on road conditions. This data can be used to make informed decisions about road maintenance and infrastructure planning. RoadEye can be used to create a crowdsourced database of potholes. This database can be used by drivers to plan their routes and avoid potholes.*

Keywords - Dashcam footage, Driver alert, Location mapping, Pothole Detection, Road maintenance., Safety improvement.

PAPER ID: COMP_06
Secure BioGuard

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Abstract : *In an era where the need for enhanced security is paramount, the "Secure Bioguard-Next Generation Security System" represents a significant evolution in access control and authentication methods. As the world becomes increasingly interconnected, safeguarding sensitive information, physical spaces, and digital assets has never been more critical. Biometric authentication systems have emerged as a ground breaking solution to address these security challenges. Among these, the integration of multiple fingerprint recognition technologies stands out as a cutting-edge approach to enhancing access control and authentication. This abstract delves into the world of multi-fingerprint security systems, exploring their development,*

advantages, applications, and the implications they hold for the future of secure access control. The concept of "Secure Bioguard-Next Generation Security System" multi-fingerprint security systems represents a significant leap forward in addressing modern security challenges. By combining the strengths of multiple fingerprint recognition techniques, such as capacitive, optical, and ultrasonic, these systems offer a more robust and versatile approach to authentication

Keywords- *Alternative security in Biometric, Fingerprint Recognition, Multi Factor Authentication, Sequence of fingerprints*

PAPER ID:COMP_07

A Review on Hospital Seat Detection System

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Abstract: *In the dynamic landscape of contemporary healthcare, efficient resource management is paramount, particularly in bustling hospital environments. This surveillance system introduces an innovative solution to address challenges in hospital crowd management. Leveraging advanced surveillance technology and real-time data processing, the system enhances patient experience by notifying individuals about unoccupied seats in waiting areas, optimizing resource utilization and minimizing inconvenience. Prioritizing patient well-being, the system contributes to judicious healthcare resource allocation. Providing healthcare personnel with real-time insights into seat occupancy, the system enables proactive responses, ensuring organized and streamlined patient flow. It represents a pioneering approach to hospital crowd management, featuring real-time oversight and communication capabilities. Through sophisticated image processing and machine learning, the system continually monitors waiting area occupancy, promptly notifying waiting patients of vacant seats, reducing wait times, and enhancing overall satisfaction. Dynamic resource allocation ensures patients are directed efficiently, benefiting both patients and healthcare facilities. This healthcare resource management system, with its comprehensive features, addresses immediate crowd management challenges and establishes itself as a holistic solution for elevating patient experiences and overall healthcare operational effectiveness.*

Keywords - *crowd management, patient-centric, real-time insights, seat occupancy, surveillance technology.*

PAPER ID: COMP_08

PredictXI- Best Fantasy Team Forecasting

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Abstract: *Fantasy sports have gained immense popularity in recent years, and platforms like Dream11 and Vision11 have become the go-to destinations for sports enthusiasts looking to test their sports prediction skills. The success of a fantasy team hinges on the selection of the right players, a task that requires a deep understanding of various factors influencing a game. PredictXI*

is an innovative machine learning-based system designed to simplify and enhance the process of creating winning fantasy teams for prediction apps like Dream11 and Vision11. PredictXI harnesses the power of advanced machine learning algorithms to analyze a multitude of critical variables that impact a player's performance and a team's success. The proposed system also considers multiple factors to make informed decisions on player selection & team composition for a particular match. By processing these variables and employing sophisticated predictive modeling techniques, PredictXI narrows down the best players to include in your fantasy team. PredictXI stands as a cutting-edge solution that empowers users with data-driven insights, increases the likelihood of assembling a winning fantasy team, and enhances the overall fantasy sports experience.

Keywords - Fantasy sports, Fantasy team, Player selection, Predictive Modeling, Sports prediction, Winning Strategy.

PAPER ID: COMP_09
INVESTAR

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Abstract: *InveStar is a groundbreaking platform that offers a fresh perspective on content investment, connecting fans with their favorite influencers in a unique and mutually beneficial way. At its core, InveStar allows users to invest in digital collectible cards that feature their beloved creators. These cards are not just aesthetic items; they represent a direct stake in the creator's income, meaning that investors can partake in the financial success of the material that these influencers have created.. This innovative approach not only cultivates a sense of involvement but also allows fans to potentially earn returns on their investments. The exclusive cards offered on the platform serve as not only tokens of fandom but also as potential digital assets that can accrue in value over time, contingent on the creators' popularity and prosperity. One of InveStar's key strengths is its use of blockchain technology. By leveraging the security and transparency of blockchain, it ensures the safety of investments and offers a clear and immutable record of transactions and earnings. InveStar presents a compelling vision of how passion for creators can be aligned with financial opportunity in the digital age.*

Keywords - Blockchain ,Earning, Financial, InveStar, ,Investments, Transactions.

PAPER ID: COMP_10
UNIPASS: A TICKETING SYSTEM

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Abstract : *The block-chain-based NFT ticketing system is a revolutionary solution for the event ticketing industry, offering unprecedented security and transparency. By leveraging block-chain technology and Non-Fungible Tokens (NFTs), it addresses long-standing issues like ticket fraud and scalping. Each event ticket is represented as a unique NFT on the block-chain, making ownership and transfer completely transparent and tamper-proof. This innovative approach simplifies the ticketing process for users while preventing unauthorized resale, ensuring that only legitimate ticket holders gain access to events. This system not only enhances the security of ticketing but also improves the overall user experience. Attendees can securely purchase tickets using crypto-currencies, easily transfer tickets to friends or family, and even request refunds within predefined constraints. Furthermore, feedback and ratings for events are recorded on the block-chain, fostering trust between event organizers and attendees. The block-chain-based NFT ticketing system is ushering in a new era of trust, integrity, and convenience in the world of event ticketing.*

Keywords – Block-chain, Crypto-currency, NFT Ticket, Smart contracts.

PAPER ID: COMP_11
NEUROSENTINEL PRODIGY

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Abstract : *Brain tumor detection is a crucial task in the realm of medical diagnostics, bearing significant implications for patient care and outcomes. This research paper embarks on a comprehensive exploration of the development and deployment of an advanced brain tumor detection system. The methodological framework is multifaceted, commencing with the assembly of a diverse and extensive dataset of brain imaging scans. Subsequently, the data undergoes rigorous preprocessing, including noise reduction and image enhancement, to optimize the quality and fidelity of the scans. The heart of the system lies in the utilization of deep learning, particularly a convolutional neural network (CNN), which leverages the robust features extracted from the preprocessed data to distinguish between brain scans indicative of tumors and those that are not. Model training is augmented by the introduction of a validation set, allowing for finetuning to achieve optimal performance. Testing the trained model on an entirely separate and previously unseen dataset substantiates its real-world utility, providing critical insights into its robustness and accuracy. The practical implementation of the system involves seamless integration into a real-time processing platform, enabling rapid analysis of incoming brain imaging data. This operational phase includes the establishment of predefined thresholds, effectively reducing false*

alarms and ensuring that only the most probable cases are flagged for review by medical professionals.

Keywords - Brain Tumor, CNN, Medical.

PAPER ID: COMP_13

SURVEY PAPER ON AI LAW ADVISOR CHATBOT

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Abstract : "LEGALBOT" represents a groundbreaking development in the field of legal technology, aiming to democratize access to legal expertise and guidance. This innovative chatbot leverages advanced natural language processing (NLP) algorithms and a vast knowledge base to provide users with accurate legal information, advice and support. By enabling individuals to seek legal counsel and answers to their legal queries conveniently and affordably. This chatbot addresses the longstanding issues of legal accessibility and affordability. This chatbot provides an overview of the key features, benefits and potential impact of the Law Advisor Chatbot emphasizing its role in empowering individuals to make informed legal decisions and navigate the complexities of the legal system. Moreover, it highlights the chatbot's potential to serve as a valuable tool for legal professionals, improving efficiency in legal research and consultation processes. Overall, the Law Advisor Chatbot presents a significant step towards a more inclusive and equitable legal landscape

Keywords - Advisor, Legal hot, Longitude, Question Answer System, Technology

PAPER ID: COMP_14

Airflow Canvas

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Abstract : Airflow Canvas – Digital Art with Hand Gesture is an application that introduces real-time drawing functionalities through the detection of a green object within the camera's live feed. Leveraging the robust foundation of OpenCV, this application excels in tracking the movements of the green object in the surrounding air, translating these movements into dynamic drawing actions directly on the screen. The application uses Convolutional Neural Network (CNN) model, finely tuned to accurately recognize and classify the shapes generated by the user during the drawing process. This intelligent integration of computer vision techniques and advanced deep learning algorithms empowers users with an unparalleled, intuitive, and interactive drawing experience. In Airflow Canvas – Digital Art with Hand Gesture essence, represents an exceptional tool for fostering creative exploration and expression. The deployment phase integrates the trained model into the air flow canvas system, emphasizing compatibility and scalability. Post-deployment, a robust monitoring system is implemented for ongoing performance tracking and

maintenance. The development process includes creating a user-friendly interface, thorough documentation, and an iterative feedback loop to continually improve the model's adaptation to changing user requirements and dynamic air flow patterns. The methodology ensures a holistic and structured approach, addressing key elements from data preprocessing to user interface design.

Keywords - Convolutional Neural Network (CNN) model, Open CV, TensorFlow.

PAPER ID: COMP_15

Employeezy- Your Pathway to Streamlined Workforce Management

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Abstract : *The Employee Team Recommendation System and Multiple Resume Analyzer are innovative tools designed to optimize team dynamics and streamline recruitment processes. The Employee Team Recommendation System uses advanced algorithms and machine learning techniques to analyse employee skill sets, strengths, and preferences, offering intelligent recommendations for team compositions. This system improves project outcomes and job satisfaction. The Multiple Resume Analyzer simplifies candidate evaluation by extracting, categorizing, and evaluating information from numerous resumes. This technology accelerates the hiring process, enabling organizations to make well-informed decisions. These tools offer a transformative advantage in a competitive job market, promoting seamless collaboration and data-driven recruitment practices. They transcend traditional methods, paving the way for a more agile workforce, addressing challenges like remote work, skill requirements, and increased competition. The project's impact extends beyond HR departments, influencing strategic decision-making and strengthening organizational effectiveness.*

Keywords - Artificial Intelligence, Employee Team Recommendation System, Recruitment Process, Natural language processing, Workforce Optimization.

PAPER ID: COMP_16

Medichain - Securing Pharma Supply Chain With Blockchain

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Abstract : *The pharmaceutical industry plays a vital role in safeguarding global health. However, its supply chain is complex, susceptible to fraud, and often inefficient. Pharmaceutical supply chains are characterized by multiple stakeholders, including manufacturers, distributors, suppliers, and healthcare providers. The intricate nature of this supply chain makes it vulnerable to issues like*

counterfeit drugs and data inaccuracies. Blockchain, with its inherent features of transparency, immutability, and decentralization, offers a compelling framework to mitigate these challenges. Blockchain enhances transparency by creating an immutable ledger of all transactions. Each drug batch is assigned a unique identifier, recorded on the blockchain and associated with relevant data such as manufacturing details, shipping records and quality test results. Stakeholders across the supply chain can access this information in real-time, ensuring complete visibility and traceability. Counterfeit drugs cause serious problem to public health. Blockchain's secure, tamper-proof records enable consumers and healthcare professionals to verify the authenticity of pharmaceutical products. Smart contracts, self-executing agreements triggered by predefined conditions can automate verification processes, reducing the risk of counterfeit drugs entering the supply chain. Blockchain's cryptographic techniques ensure data security, privacy and protecting sensitive information. Pharmaceutical recalls can be costly and time-consuming. Blockchain's traceability allows for targeted recalls, pinpointing affected batches quickly. Smart contracts can automate the recall process, notifying relevant parties and facilitating the return of products. This efficiency not only saves resources but also enhances patient safety.

Keywords - Blockchain, counterfeit drugs, pharmaceutical supply chain, smart contract.

PAPER ID: COMP_17

A Review on Multispectral Satellite Image Dehazing Techniques

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Abstract : *The Multispectral Satellite Image Dehazing project endeavors to enhance the utility and quality of multispectral satellite imagery by developing specialized dehazing techniques tailored to the unique spectral characteristics of such data. Focusing on mitigating atmospheric interference, particularly haze, the project aims to improve data clarity, benefitting applications like environmental monitoring, disaster management, and land use analysis. The project's core objective is to address the challenges posed by haze in multispectral imagery, offering a significant contribution to remote sensing by advancing techniques specific to the nuances of multispectral satellite data. The outcomes hold the potential to elevate the accuracy and reliability of satellite-based information, impacting various fields such as agriculture, forestry, urban planning, and climate studies.*

Keywords - Dehazing techniques, spectral characteristics, atmospheric interference, haze removal, data clarity, remote sensing, accuracy improvement.

PAPER ID: COMP_18

Survey Paper On Real Time Smart CCTV Surveillance System

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Abstract : *In an era of fast technological innovation, the seamless integration of new technologies into old infrastructure is crucial. This effort attempts to improve data access, optimization, and organization by combining traditional technology with cutting-edge concepts. The startup, which focuses on big data analytics and edge computing, hopes to pave the path for a brighter future [1]. Today, security is critical, especially with the difficulty of abandoned homes owing to demanding duties. To address this worry, CCTV cameras are widely used to protect residences while the owners are away [8]. Furthermore, in smart cities, surveillance cameras play an important role in gathering evidence for crime prevention and investigation [3]. This project presents a new way to surveillance that combines classic video monitoring with superior motion-based sensing technology. Unlike standard systems that just take footage, the suggested system uses sensor cameras to identify and analyze the motion of visible objects. These camera's reliable monitoring function is meant to spot approaching objects, allowing for a proactive response to potential security concerns [6]. The system's ability to use motion detection to capture just moving frames is a crucial breakthrough, as it optimizes the use of system resources [7]. By updating the backdrop frame with prior background intensity inference, the system assesses its ability to identify and respond to physical motions appropriately [4]. This research and development work not only contributes to the growth of security systems, but it also demonstrates the successful blending of traditional and cutting-edge technology to handle current difficulties [12]. The suggested motion-based surveillance system is a viable alternative for effective and resourceful security monitoring in both residential and urban settings.*

Keywords - *Edge Computing, Infrastructure Integration, Motion-Based Surveillance System, OPEN CV, Optimization Organization, Security, Smart Cities, Surveillance, Technological Innovation.*

PAPER ID: COMP_19

Smart Eyes on the Horizon : A survey of Real-Time CCTV Innovations

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Abstract : *The "Smart Eyes on the Horizon: A Survey of Real-Time CCTV Innovations", revolutionizing law enforcement, is a pivotal tool that embodies cutting-edge innovation through its advanced image deblurring technology. This state-of-the-art solution plays a central role in elevating the clarity of surveillance footage, thereby not only significantly enhancing facial*

recognition accuracy but also streamlining the matching of images with extensive databases. Operating seamlessly in real-time, Smart Eyes on the Horizon serves as a cornerstone in proactive crime prevention, empowering law enforcement with the ability to anticipate and swiftly respond to emerging threats, ensuring they remain one step ahead in the ever-evolving landscape of criminal activities. The system's intuitive user-friendly interface, combined with its scalability and customizable features, fosters widespread adoption among law enforcement agencies. Beyond addressing the critical need for improved image quality, It excels in accurate suspect identification, especially in the intricate scenarios of violence detection. This multifaceted tool is not merely a technological asset; it is a strategic ally that reinforces the capabilities of law enforcement in safeguarding communities. Moreover, Smart Eyes on the Horizon signifies a quantum leap in law enforcement technology, dynamically responding to the escalating demands for enhanced capabilities. Its commitment to prioritizing privacy and maintaining cost-effectiveness underscores its holistic approach to addressing the ethical considerations inherent in modern surveillance systems. By providing officers with unparalleled image deblurring capabilities, It equips them to respond more effectively to incidents, contributing significantly to the overarching goal of creating safer communities. In essence, Smart Eyes on the Horizon transcends being just a tool; it symbolizes the continuous evolution of law enforcement technology, ushering in an era where precision and efficiency are seamlessly intertwined for the greater good of society. This groundbreaking system not only exemplifies technological prowess but also exemplifies a commitment to a safer and more secure future.

Keywords - Databases, Facial recognition, Law enforcement, Privacy, Proactive crime prevention, Rapid responses, Real-time operation, Safer communities, Scalability, "Smart Eyes on the Horizon: A Survey of Real-Time CCTV Innovations", Surveillance footage, Suspect identification, User-friendly interface, Violence detection.

PAPER ID: COMP_20
COP : TARGET RECKS USING YOLOv8

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Abstract : *With the increasing need for effective wildlife monitoring and conservation efforts, computer vision technologies have emerged as powerful tools for automating animal detection in diverse environments. This paper introduces an innovative framework for the detection of Indian exclusive animals—species found exclusively in India—employing the YOLOv8 (You Only Look Once) object detection model. The proposed system is reinforced by a meticulously annotated dataset created through the Computer Vision Annotation Tool (CVAT), focusing specifically on the distinctive fauna inhabiting the Indian subcontinent. The YOLOv8 model, renowned for its speed and accuracy, is employed to detect animals in images and video frames. The YOLOv8 model is tailored to detect and classify indigenous animal species, ensuring its adaptability to the unique ecological contexts of India. By harnessing the real-time capabilities of YOLOv8, the system enables efficient and timely monitoring of exclusive wildlife populations, addressing the urgent need*

for accurate and scalable solutions in conservation efforts. The CVAT annotated dataset encapsulates a diverse array of Indian endemic species, encompassing various habitats and environmental conditions. The manual annotation process ensures precision in delineating bounding boxes around animals, contributing significantly to the enhancement of the model's detection accuracy for region-specific fauna. Addressing challenges such as diverse animal poses, complex backgrounds, and varying lighting conditions, our framework demonstrates its adaptability to the specific conditions prevalent in India. This work contributes to the growing body of research in wildlife conservation and monitoring, providing a scalable and accurate solution for automated animal detection. The proposed framework stands as a valuable tool for researchers, conservationists, and wildlife managers dedicated to safeguarding the unique biodiversity of India and its integral role in global ecological balance.

Keywords - Android, Annotations, CVAT, Detection, Endemic species, YOLOv8

PAPER ID: COMP_21

ExpersionXbot: Prakriti Assessment System

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Abstract : *Expersion Xbot is a groundbreaking mobile application that is poised to revolutionize the way individuals understand, manage, and take control of their health. This innovative and intelligent app harnesses the power of advanced AI and natural language processing to provide users with swift, precise, and personalized insights into their health concerns. The exploration of Ayurvedic practices and personalized healthcare in the literature encompasses various dimensions, including the application of machine learning models for Prakriti identification. Studies delve into the correlation between Prakriti and Sharirika Bala, employing intelligent Prakriti assessment with machine learning classifiers, and conducting clinical observational studies on Prakriti. Ayurgenomics is utilized for drug discovery], while ensemble machine learning methods contribute to dosha prediction. Surveys on human Prakriti and Tridosha provide valuable insights, and a portable pulse detector is developed using artificial neural networks. Recent advances underscore the fusion of genomics and Ayurveda, highlighting technology's transformative potential. The computerized pragmatic assessment of Prakriti Dosha using tongue images demonstrates the integration of modern tools into Ayurveda for personalized treatments,. Clinically adaptable Prakriti assessment tools are developed, emphasizing India's rich medical heritage and the crucial role of Prakriti assessment in tailoring personalized Ayurvedic treatments. The convergence of Ayurveda and traditional systems opens avenues for herbal drug discovery. In summary, these studies collectively illustrate the synergy between technology and Ayurvedic wisdom, offering innovative approaches to holistic healthcare*

Keywords - *Expersion Xbot, Mobile health app, AI, machine learning, Ayurveda, Prakriti, personalized healthcare, dosha prediction, tongue image analysis, surveys, Prakriti identification, clinical studies.*

PAPER ID: COMP_22

SmartPoshan – Poshan Tracking for Students

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Abstract : *The PM POSHAN mid-day meal program aims to Provide nutritional assistance to students enrolled in pre-primary, primary (classes 1 to 8), and government or government-aided schools.. This initiative ensures that each child receives a specified daily intake of calories and protein, promoting improved health, attendance, and cognitive growth. To effectively manage this program, an integrated tracking system has been proposed, utilizing a QR code system for attendance tracking. The web application facilitates real-time meal consumption data and routine photographic documentation of meals served. Additionally, an AI-based tracker app has been developed for data collection and analysis, empowering stakeholders to monitor the program's impact across various scenarios. Nutrition analysis software is employed to plan diverse menus that meet nutritional requirements. Regular health check-ups and maternal involvement further enhance the program's effectiveness. Through the implementation of this comprehensive monitoring and evaluation system, the PM POSHAN program ensures transparency, accountability, and the optimal well-being of the students, thereby fostering a healthier and more academically successful school environment.*

Keywords - *PM POSHAN, Mid-day meal program, QR code system ,Nutrition analysis software*

PAPER ID: COMP_23

IVigilance - Intravenous drip monitoring and controlling system

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Abstract : *The " IVigilance -Intravenous Drip Monitoring and Controlling System for Hospital Using IoT" project presents an IoT-driven solution designed to modernize and enhance intravenous therapy management within healthcare organizations. Intravenous (IV) drips play a pivotal role in patient care, yet their manual oversight poses potential risks, including medication errors and inefficiencies. This project leverages IoT technology to create an automated system that continuously monitors and regulates IV drip operations. By incorporating IoT sensors and microcontrollers into the IV drip infrastructure, real-time data on flow rates and drip status is collected. This data not only ensures precise medication and fluid delivery but also enables remote control and adjustment by healthcare professionals. The system's benefits are twofold. First, it reduces the likelihood of human error, significantly improving patient safety. Second, it provides data-driven insights that empower healthcare institutions to optimize resource allocation and make informed clinical decisions. In summary, the "Intravenous Drip Monitoring and Controlling System*

for Hospital Using IoT" project offers a transformative approach to IV therapy management. It promises to enhance patient care, streamline hospital operations, and usher in a new era of healthcare technology, where IoT-driven automation ensures the accuracy and safety of intravenous therapies, benefiting both patients and healthcare providers.

Keywords - IoT-based system, IV drip therapy, Sensors, microcontrollers, and cloud computing, Remote adjustment and alerting, Real-time data

PAPER ID: COMP_24
A Review on Blockchain based Legal Vault

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Abstract : *In today's digital age, the legal industry is experiencing a transformative shift towards efficient, secure, and transparent record-keeping solutions. This project introduces a pioneering Blockchain-Based eVault designed to revolutionize the management and preservation of legal records. Leveraging the power of blockchain technology, this system provides an immutable, tamper-proof, and easily accessible repository for legal documents, ensuring the integrity, authenticity, and privacy of sensitive information. By harnessing the capabilities of blockchain technology, the Blockchain-Based eVault for Legal Records addresses the pressing need for secure, transparent, and efficient legal record management. It offers a solution that can significantly reduce the risk of document fraud, errors, and data breaches while simplifying complex legal processes. This project represents a promising step towards the modernization of the legal industry and sets a precedent for the adoption of blockchain-based solutions in other sectors reliant on secure data management and transparency.*

Keywords - authenticity, eVault, immutable, integrity, legal records, transparent.

PAPER ID: COMP_25
Soul-Surveyor: Mental Health monitoring using Business Intelligence and Sentiment Analysis

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Abstract : *Mental health is a critical concern worldwide, with a growing need for effective assessment and support systems. This project focuses on utilizing business intelligence techniques to perform sentiment analysis on mental health-related data. The goal is to gain valuable insights into the emotional well-being of individuals by analyzing their text-based interactions, such as social media posts, forums, or chat logs. Sentiment analysis models are employed to classify text into categories such as positive, negative, or neutral sentiments. Additionally, the project explores the use of emotion detection algorithms to identify specific emotions expressed in the text, such as*

sadness, happiness, or anxiety. Business intelligence tools and dashboards are employed to visualize and present the sentiment analysis results. These tools enable stakeholders, including mental health professionals, policymakers, and researchers, to monitor and gain insights from the sentiments expressed online in real-time. In order to support early intervention and resource allocation, the project also entails the construction of predictive models that, using sentiment analysis data, can predict future trends in mental health. By leveraging business intelligence techniques for sentiment analysis of mental health data, this project aims to contribute to a better understanding of mental health trends, facilitate timely interventions, and promote overall well-being. The insights gained from this analysis can empower individuals, healthcare providers, and policymakers to make informed decisions and provide more targeted support for mental health challenges

Keywords - Business Intelligence, Data Analytics, Mental Health Monitoring, Natural Language Processing, Sentimental Analysis.

PAPER ID: COMP_27

Advent of Automation in Tourism

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Abstract : *Tourism is a very flourished and celebrated industry of the modern world as it presents a plethora of advantages to the tourists as well as the facilitators of the industry, a large stake of those being the people native to tour-friendly locations. Each location has an exclusive array of beauty, history, culture, cuisine and community associated with it. Such a diverse range of parameters offers a dimension of complexity to the tour planning process. As the world advances towards automation, the tourist sector also seen to undergo profound changes through integration of various technologies. This paper describes evolution of tourism sector with increase in automation. The study investigates how inculcation of AI technologies can help in reforming the tourism landscape. By synthesizing insights from academic experts and various research papers, this research aims to provide a comprehensive overview of ongoing state of automation and technologies in this domain. Understanding these dynamics is necessary for sustainable development and improvement of automated systems to help grow and enhance the traveler experience.*

Keywords - Artificial Intelligence, Automation, Machine Learning, Natural Language Processing, Tourism.

PAPER ID: ELECT_01
A REVIEW PAPER ON ENERGY STORAGE SYSTEMS IN INDIA

Anojkumar Yadav¹, Rahul Abhyankar², Tejas Sankpal³, Amitkumar Vishwakarma⁴
¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract : *This review paper aims to provide a comprehensive analysis of the current state of energy storage systems in India. With the increasing demand for reliable and sustainable energy, the role of energy storage has become crucial in addressing the intermittency of renewable energy sources and ensuring grid stability. The paper explores various types of energy storage technologies deployed in India, their challenges, and potential solutions. The analysis is based on a thorough review of existing literature, data, and case studies. The paper also includes tables and graphs to illustrate key findings*

Keywords – *Emerging technologies, Energy storage systems, Renewable energy integration, Technological challenges.*

PAPER ID: ELECT_02
AERIAL DELIVERY OF LIFE SAVING SUPPLIES

Jay Patel¹, Prof. Bhushan Save², Dhruv Panchal³, Dhruv Gohil⁴
¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract : *The Aerial Delivery of Life-Saving Supplies is an Unmanned Aerial Vehicle (UAV) system designed to swiftly and securely deliver medical supplies during emergencies. Its primary objective is to expedite the delivery of critical supplies to hospitals, mitigating the risk of fatalities due to shortages. To prioritize environmental sustainability and efficiency, the UAV will be powered by batteries, and the use of plastic in packaging will be minimized. The incorporation of parachutes ensures the safety of both humans and supplies, reducing delivery time. The successful implementation of UAVs for medical supply delivery has demonstrated remarkable results, gaining widespread adoption worldwide.*

Keywords - *Air Traffic Control (ATC), First Person View (FPV), Global Positioning System (GPS), Medical Supplies Delivery, Unmanned Aerial Vehicle (UAV).*

PAPER ID: ELECT_03

IMPLEMENTING BLOCKCHAIN TECHNOLOGY FOR ENERGY TRADING

Siddhesh Sawant¹, Prof. Bhushan Save², Snehal Pashte³, Vedant Gadhari⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *The landscape of energy management systems is undergoing a transformative shift, transitioning from centralized management to distributed energy management systems for enhanced energy efficiency. Within the realm of distributed energy management, two distinct user types emerge: 1) those with surplus energy generation and 2) those facing a deficit in energy generation compared to their demands. This project aims to address the energy generation imbalance among distributed users through the implementation of a peer-to-peer (P2P) energy trading platform. Notably, blockchain technology is proposed as a pioneering solution, providing a secure and reliable framework for executing P2P transactions without the need for centralized broker intervention. The decentralized application characteristics inherent in blockchain facilitate the trading of energy generated by distributed users within the proposed platform. To augment user accessibility, a mobile application is established for monitoring transaction information, including transaction details and energy prices. This initiative aims to create a more balanced and efficient energy ecosystem.*

Keywords - *Block chain, Energy, Generation, Trading, Transaction.*

PAPER ID: ELECT_04

SUSTAINED SOLAR-POWERED INFRASTRUCTURE: AN SOLAR-POWERED AUTOMATIC SEASIDE SENTRY FOR BEACH CLEANER ROBOT

Mr.Sagar Ambat¹,Mr.Hrushikesh Bangar²,Mr.Yash Raut³,Ms.Bhagyashri Patil⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract *Our solar-powered beach cleaning system is transforming the way we maintain clean beaches. It's a self-sustaining setup for an automatic cleaning robot. The efficient solar panels serve as a charging point, allowing the robot to work continuously without human intervention. Even during periods of low sunlight or at night, the robot can continue its cleaning tasks thanks to its battery storage. The system is equipped with garbage buckets to enhance waste management and acts as a protective shelter for the robot, ensuring its safety in adverse weather conditions and extending its lifespan. An automated door with a set schedule ensures the robot is securely housed when not in use. The system also features environmental monitoring sensors, user-friendly interfaces, making it a comprehensive and eco-friendly solution to enhance beach cleaning operations.*

Keywords - *Battery storage pack, Garbage buckets, Magnetic charging point, Solar-powered.*

PAPER ID: ELECT_05
MODULAR ELECTRIC WHEELCHAIR

Jay Rewale¹, Prof. Bhushan Save², Raj Saroj³, Harsh Shukla⁴

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Abstract This project presents a groundbreaking one-wheeled electric bike integrated with a wheelchair to facilitate seamless mobility for individuals with leg disabilities. The core innovation lies in the incorporation of a sophisticated Brushless DC (BLDC) motor and state-of-the-art attachments commonly associated with electric bikes. The resultant system offers notable advantages, providing enhanced independence and improved maneuverability for users. However, technical evaluations reveal challenges in adapting to user dynamics and nuanced maneuvering, constituting inherent disadvantages. Furthermore, the system exhibits limitations in its responsiveness to variable terrains and environmental conditions. Despite these challenges, the project marks a significant stride in assistive mobility technology, showcasing potential transformative impact. Ongoing refinements and adaptive strategies are essential to address identified limitations, ensuring a comprehensive and technically sound solution for individuals with leg disabilities

Keywords - BLDC motor, Electric Uni-Bike assisted Wheelchair, Handle Fork Structure, Modulation, Rechargeable battery.

PAPER ID: ELECT_06
INVELOX WIND TURBINE

Alankar Ganve¹, Sunny Kushwaha², Dinkar Singh³

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Abstract : A novel approach to harnessing wind power is introduced, demonstrating superior performance compared to conventional wind turbines of similar size and aerodynamic features in identical wind conditions. This innovative system achieves markedly increased output at a reduced cost. The primary groundbreaking aspect involves eliminating tower-mounted turbines, a characteristic feature of current wind power technology known for its mechanical complexity, towering structures, high costs, and associated hazards to both people and wildlife. The second distinctive feature of INVELOX lies in its ability to capture wind flow through an omnidirectional intake, eliminating the need for passive or active yaw control. Additionally, it accelerates the airflow within a shrouded Venturi section, subsequently releasing it into the surrounding environment through a diffuser. Simulating the performance of this wind delivery system poses a considerable challenge due to the intricate nature of the system and its interaction with the incoming wind at the front end and the turbine at the rear end.

The objectives of the current study include fabricating a model to gain insights into the flow field within the INVELOX, both where the actual wind turbine is located and in the external flow field. Enhanced wind velocities are shown to significantly enhance power output.

Keywords- experimental investigation, high portable wind turbines, modelling and control, renewable energy, small-scale wind turbine.

PAPER ID: ELECT_07
IoT BASE SMART ENERGY METER MONITORING AND THEFT DETECTION

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¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: One of the major problem that the world faces this moment is Energy Extremity. It can be reduced to a certain extent by duly covering our energy consumption and avoiding energy destruction. Currently people face numerous problems like power theft. This system will find energy theft fluently. This IoT electricity meter is conforming of Atmega 328 microcontroller with a WIFI module for IoT connection and GSM module for mobile connection, on which client will admit information via SMS. This smart electricity meter also consists of a current detector that sends the current reading to the microcontroller. We've to connect cell phones with the system via SMS which will help to configure with the system. In case of an exigency, the information will be shared on the configured number. We've to set costs for the unit and for which we've four buttons. With the help of buttons, we can set costs for the unit. As we start the system, it shows reading on the IoT screen. Reading will be changed with respect to time. In the case of energy theft, the theft will be caught and displayed on the IoT screen. Indeed the information will be entered through SMS on the configured number. After entering the alert, the driver can switch off the system using IoT to avoid theft.

Keywords - Atmega 328P, Energy meter, GSM module, IoT, Wi-Fi module.

PAPER ID: ELECT_08
HAND GESTURE CONTROL ROBOT USING ARDUINO

Mr. Vighnesh Chaudhari¹, Mr. Prashant Mhatre², Mr. Jitendra Bind³

¹²³(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract In this paper, we introduce a hand-gesture based control interface for navigating a car robot. A 3-axis accelerometer is used to record a user hand gesture. The data is transmitted wirelessly via an RF module to a microcontroller. The received signals are then classified to one of six control commands for navigating a car-robot. The microcontroller then classifies the hand trajectories. Simulation result show that the classifier could achieve a 92.2% success rate

Keywords- Defence surgery, Gesture recognition, Hand tilting, Military security, Gesture Control, Accelerometer, Microcontroller.

PAPER ID: ELECT_09

A COMPARATIVE REVIEW OF ROBOTIC LIFESAVING ASSISTANT FOR POOL RESCUE

Vivek Karwande¹, Prof. Rahul Abhyankar², Mayur Pathare³, Rohit Surve⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: This paper comprises of comparative review for design of water rescue robot. The paper also gives information about techniques used for water rescue and evolution of water rescue robots in world. The comparison for design of water rescue robot is done on basis of propulsion system, power supply, microcontroller, 3D material etc. The paper also describes a calculation required for developing and designing a water rescue robot.

Keywords - Water rescue robot, drowning, lifesaving, lifeguard, pool rescue

PAPER ID: ELECT_10

ENHANCING SUSTAINABLE WATER MANAGEMENT: A COMPREHENSIVE APPROACH TO WATER PURIFICATION

Rohan Jadhav¹, Shreekrishna Mahadik², Prasad Patil³, Janhavi Bhoir⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: This paper introduces a pioneering initiative focused on water purification, addressing the pressing challenges of water pollution and scarcity. The project's historical evolution, layout, and introduction lay the groundwork for an in-depth exploration of its components and functionality. Through advanced technologies like UV lamps, ozone generators, and high-pressure water pumps, the project aims to contribute significantly to the field of water treatment and environmental conservation.

Keywords - Global Challenge, Ozone Generation, Solar System, Safe Water, Water flow Sensor, Water Purification.

PAPER ID: ELECT_11

AUTOMATED PLANT CARE AND PET FEEDING SYSTEM USING IOT BASED ANDROID APP

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¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: In this study, an IoT-based feeding and drinking system for pet dogs will be discussed. Frequent feeding and drinking causes issues for pet owners while they are away from their animals or not at home. This issue can be resolved by combining IoT technology with feeding and drinking apparatus. In this study, the IoT system developed an Internet of Things (IoT)-based system with remote control and monitoring to facilitate pet owners' provision of food and water through smartphone apps. Dogs are the pets discussed in this study. There are two primary purposes for this system: eating and drinking. These features can all be used both

automatically and manually. Weighing food is the annex tension function, in addition to these two functions. It is possible to have automated drinking and feeding

Keywords - Internet of Things (IOT), Sensor, Smartphone, Esp 8236,,Motor.

PAPER ID: ELECT_12
**ENHANCE IOT INTEGRATION WITH THREE PHASE
INDUCTION MOTOR PROTECTION SYSTEM**

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Deepak M. sajnekar⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *The implementation of advanced safety measures in 3-phase systems is a significant step in ensuring workplace security. Utilizing a variety of sensors, including those for voltage, current, and temperature, these systems enhance overall safety. Notably, the integration of IoT technology allows real-time transmission of sensor data to a cloud-based MERN stack platform, enabling centralized data storage, analysis, and visualization. This facilitates efficient monitoring, proactive maintenance, and rapid response to potential hazards. The collected data provides valuable insights for predictive maintenance, and the user-friendly MERN stack-based interface ensures easy access to vital information, contributing to both industrial safety and operational efficiency.*

Keywords - Arduino, Bluetooth GSM, IOT, Wi-Fi ,

PAPER ID: ELECT_13
RPM DISPLAY OF DC & INDUCTION MOTOR

Shivam Yadav¹, Saheel Thakur², Rushikesh Shinde³, Mihir Thakur⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *This project's primary goal is to use an infrared speed sensor mechanism to control the speed of a DC motor and display it. The DC motor has numerous uses in sectors such as elevators, spinning, drilling lathes, and more. The DC motors' speed regulation is absolutely crucial. A highly accurate and efficient speed control system is offered by this suggested method. The motor will operate at that precise speed if the user adjusts the speed to suit their needs. Using an infrared speed sensor mechanism, the primary goal of this project is to control the speed of a DC motor and show that speed. The DC motor finds applications in a variety of sectors, including elevators, lathes, drilling, and spinning.*

Keywords - Display, RPM, Tachometer, Laser Sensor, Battery, Microprocessor.

PAPER ID: ELECT_14
**SHORECLEANBOT’: AUTOMATED SEA SHORE
CLEANER ROBOT TO ENHANCE COASTAL
SUSTAINABILITY**

Mr.Aakash Jadhav¹, Prof. Anojkumar Yadav², Mr.Rohan Vanare³, Mr.Virendra
Varma⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *The "Shorecleanbot" is a groundbreaking automated seashore cleaner robot designed to enhance coastal sustainability by leveraging Arduino technology. Its primary goal is to clean seashores and promote the well-being of marine environments, addressing the growing issue of beach pollution caused by visitors. With reports highlighting the significant accumulation of plastic waste on beaches, often inadequately managed by local authorities, this environmental damage not only threatens marine ecosystems but also diminishes the appeal of beaches for tourism. To combat this problem, the automated seashore cleaner robot operates autonomously, minimizing the need for human intervention. Equipped with versatile sensors, it ensures efficient cleaning without interruptions. The robot strategically initiates its cleaning process at night, synchronized with high and low tide schedules, covering a substantial area before sunrise to reduce potential encounters with human visitors. Utilizing data storage, it retains its cleaning path, ensuring comprehensive coverage. To handle waste collection effectively, a front loader bucket with an integrated motor allows the robot to lift and empty the garbage bucket when it reaches capacity. This innovative solution aims to contribute to cleaner and more sustainable seashores, preserve marine ecosystems, and maintain the allure of beaches for tourists*

Keywords - *Arduino, Convert belt, Inbuilt Navigation, Shore Clean Robot, Ultrasonic Sensor*

PAPER ID: ELECT_15
**LOAD BALANCING SMART DISTRIBUTION PANEL
USING IOT**

Mr.Rohan Bolke¹, Mr.Sumit Gupta², Mr.Nikhl Kadam³, Prof. Deepak Sajnekar⁴

¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *The proposed solution involves the seamless integration of current, voltage, and power sensors linked to a distribution board via a microcontroller. These sensors operate in tandem to continuously monitor electrical parameters, transmitting real-time data to a centralized system. Utilizing predefined algorithms, this system efficiently processes incoming data, enabling it to prioritize loads, predict potential issues, and communicate relevant information to consumers through notifications. By facilitating proactive adjustments and precautionary measures, this intelligent system aims to enhance safety, optimize efficiency, and promptly address electrical accidents and failures. Through the strategic application of carefully crafted algorithms, this advanced system meticulously examines the incoming data flow. This analytical capability not only allows the system to comprehend the data but also empowers it to anticipate and forecast potential fluctuations, ensuring precise load prioritization. Furthermore, this cognitive proficiency positions the system to proactively*

identify irregularities or impending issues that could compromise its integrity, contributing to a robust and reliable electrical management framework.

Keywords - IOT, Load Balancing, RCD, SDB, Smart Distribution

PAPER ID: ELECT_16
SOLAR PV PANEL CLEANING SYSTEM

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¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *The effectiveness of solar panels can be considerably reduced by the collection of dust and soil. Periodically cleaning them is essential, but it can be difficult and expensive when there is a shortage of water. The effect of dirt and dust on solar photovoltaic conversion efficiency has been the subject of recent research. Appropriate cleaning methods can increase conversion efficiency by 15-20% or output energy by around 25%. In addition to discussing automated cleaning solutions for solar photovoltaic modules, such as electrical, mechanical, chemical, and electrostatic approaches, this project gives an overview of the dust problem. The primary goal is to develop efficient automated solar panel cleaning solutions.*

Keywords - Dust Problem, Efficiency, Photovoltaic, Solar PV Panel Cleaning, Solar Panel

PAPER ID: ELECT_17
**ADVANCE PROSTHETIC LIMB REPLICATED BIONIC ARM
FOR FUNCTIONAL RESTORATION OF AMPUTEES**

Aakash Naik¹, Prof. Bhushan Save², Sahil Solanki³, Shraddha Patil⁴
¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *This abstract explores advancements in prosthetic arm technology, aiming to restore functionality and independence for individuals facing limb loss or congenital differences. Prosthetic arms, designed to emulate human capabilities, enhance autonomy by restoring crucial functions like grasping and manipulating objects. Technological improvements focus on intuitive control mechanisms, utilizing myoelectric, machine learning, and neural interface technologies. Initiatives in lightweight materials and customizable designs are pursued to enhance accessibility. Beyond practical considerations, prosthetic arms contribute to rehabilitation and well-being, addressing both functional and emotional dimensions. The ultimate goal is the seamless integration of prosthetic arms with users' bodies, reshaping the narrative of limb loss into one characterized by resilience and adaptability..*

Keywords accessibility, limb loss, myoelectric control, neural interfaces prosthetic arm, , technological advancements, rehabilitation, resilience.

PAPER ID: ELECT_18
SMART AGRICULTURE ROBOT WITH SENSOR MONITORING
SEED SOWING AND CROP PREDICTION USING MACHINE
LEARNING

Mr. Deep Late¹, Prof. Anojkumar Yadav Mr. Nath Kamble², Mr. Aniket Sonar³
¹²³⁴(Electrical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract: *This research presents a Smart Agriculture Robot equipped with sensors for real-time monitoring, seed sowing automation, and crop prediction through machine learning. The integration of sensor data enhances precision in agricultural activities, while machine learning algorithms analyze historical and current data to predict crop outcomes. The system aims to optimize resource utilization and enhance overall agricultural efficiency for sustainable and informed decision-making. The smart agriculture robot described employs sensors for monitoring, seed sowing, and crop prediction through machine learning. This innovative system combines real-time data from various sensors to optimize agricultural processes, ensuring efficient seed placement. Additionally, machine learning algorithms analyze historical and current data to predict crop outcomes, enabling proactive decision-making for improved yield and resource utilization.*

Keywords *Smart Agriculture Robot, Sensor Monitoring, Real-time Monitoring, Seed Sowing Automation, Crop Prediction, Machine Learning, Precision Agriculture, Resource Utilization Optimization, Sustainable Agriculture, Informed Decision-making*

PAPER ID: ELECT_19
SIMULATION OF HYBRID INVERTER WITH SOLAR
BATTERY CHARGER USING SOLAR AND WIND ENERGY

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Abstract: *The two majors' disadvantage of using conventional source are the environmental pollution caused by its use and its limited quantity. So, it's better to switch on to the non-conventional source of energy i.e., Solar and Wind energy. The system has been designed to suit a typical Indian scenario where there is power shortage which result in scheduled and unscheduled power shedding. This system ensures continuous power supply. This allows the two sources to the supply the load separately or simultaneously depending on the availability of the energy sources. MATLAB is a powerful tool for modelling and simulating power systems, including the design of controllers. It offers a comprehensive platform for modelling and simulating hybrid inverters that integrate solar, wind, energy sources. With its extensive library of functions and algorithms, MATLAB provides a comprehensive environment for analysing and optimizing power system behaviour. By using mathematical models in MATLAB, it captures the electrical characteristics and response of each component, accurately represent the dynamic behaviours of the system, allowing for the simulation of various operating conditions and scenarios. By simulating the hybrid inverter system in MATLAB, we can evaluate its performance under different environmental conditions, load demands, and battery states. This enables them to assess the system's efficiency, reliability, and overall performance, and make informed decisions to improve its design and operation. Overall, MATLAB-based*

modelling and controller design provide a robust framework for analysing and improving the performance of power systems. Its versatility and extensive toolset make it an invaluable resource for engineers working in the field of power system engineering

Keywords - *MATLAB, Simulation, Hybrid Inverter, PV, Solar and Wind, renewable energy*

PAPER ID: EXTC_01
**A REVIEW ON ENHANCEMENT OF BANDWIDTH FOR
RFID APPLICATIONS USING HFSS SOFTWARE**

Meena Perla¹, Mihir Solanki², Zhil Vora³

^{1,2,3}(Department of EXTC Engineering, VIVA Institute of Technology, University of Mumbai)

Abstract : *The review explores the use of Advanced System Simulator (HFSS) software to improve bandwidth for radio frequency identification (RFID) applications. This article focuses on addressing the limitations of traditional RFID techniques and reviews recent advances in bandwidth enhancement using HFSS. Various technologies are being examined, including advanced materials, improved antenna design, and new electrical installations. Practical applications in the industry show the real impact of these developments. The review concludes by discussing current issues and presenting future research directions to advance RFID technology towards higher efficiency.*

Keywords – *Bandwidth, Dual Band Monopole Antenna, frequency bands, Radio frequency Identifications (RFID) technology, RFID reader.*

PAPER ID: EXTC_02
SELF BALANCING ELECTRIC VEHICLE

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^{1,2,3,4}(Department of EXTC Engineering, VIVA Institute of Technology, University of Mumbai)

Abstract : *The conventional motorbike remains a popular transportation choice due to its cost-effectiveness. However, safety concerns persist, particularly regarding balance issues, which are crucial for rider safety. Addressing this, we propose self-balancing technology for two-wheelers. This innovation aims to provide a car-like safety level at a lower cost, enhancing accessibility to safer transportation. In addition to safety, traditional motorbikes contribute to environmental problems through fuel consumption. As the world faces climate challenges, transitioning to electric-powered vehicles becomes essential. By integrating gyroscopic technology into two-wheelers and utilizing electric power, we can mitigate safety risks and environmental impact. Gyroscopes sensors, motors, and batteries, enable automatic balance control, making two-wheelers safer and more inclusive for various riders, including handicapped individuals and children. Moreover, electric power eliminates harmful emissions, promoting cleaner transportation solutions. Thus, self-balancing two-wheelers offer a dual benefit: improved safety and reduced environmental footprint, aligning with the global push towards sustainable mobility.*

Keywords - *Gyroscopic technology, electric-powered vehicles, safety, and environmental sustainability.*

PAPER ID: EXTC_03

MediDose: Precision Medicine Dispenser

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Abstract: This paper talks about a smart box for medicines. It gives the right meds at the right time and also check this helps older People or those who with the serious illness and help with their medicine. The Prototype has Right boxes where pills go arranged like box. There's also an app for Caretakers to updated the prescription for when to take the meds. The design of our Prototype is allows good Communication between the Patient & caretaker. The Prototype is controlled by a ESP 32 module and for safety reason it's use your fingerprint to make sure only you get the meds. you even get a voice command when it's time to take them and also notify by a Fitbit band. which is also Connect through the bluetooth. The challange is designing a dispenser that works for all types of medicines. which come in different shapes & sizes. This paper reviews & discusses the design of smart medicine dispensers.

Keywords - Medicine Dispenser, Pill Reminder, Electronic Pill Dispenser, Automatic Pill Dispenser, Pill Box With Timer, Medication Organizer.

PAPER ID: EXTC_04

**Enforce360: YOLOv8 and Tesseract-OCR for Comprehensive
Helmet Rule Adherence**

Archana Ingle¹, Manali Kadam², Sourav Samanta³, Ashish Thakur⁴
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Abstract : Motorcycle riders not wearing helmets pose a significant risk to road safety and their own wellbeing. However, manually monitoring a large volume of traffic across an entire city to identify all helmet violations is an impossible task. Conversely, automatically extracting license plate information from vehicles promises various applications like seamless toll payments, parking systems, etc. but relies heavily on expensive infrastructure changes. This paper tackles these challenges by developing a real-time computer vision system to automatically detect helmet violations among motorcycle riders while concurrently extracting their license plate details. By employing advanced machine learning algorithms for object detection and optical character recognition, the system can accurately identify riders without helmets and capture license plate numbers with high precision. The real-time nature allows it to monitor live traffic streams and generate actionable insights for law enforcement and other agencies. The proposed techniques provide an efficient and low-cost automated framework to improve road safety by increasing compliance to helmet rules. Additionally, the license plate data extraction opens up possibilities for various smart city applications without needing large investments into infrastructure changes. The system has the potential to process large volumes of traffic across cities and contribute significantly to road safety and intelligent transportation initiatives.

Keywords - Object Detection, YOLOV8, Optical Character Recognition (OCR), Deep Learning

PAPER ID: EXTC_05

SUPPLY TRACK NAVIGATOR USING WEB TECHNOLOGY

Archana Ingle¹, Jatin Tiwari², Sayanna Mukharjee³, Amit Vishwakarma⁴
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Abstract: *In the intricate realm of supply chain management, the efficient tracking of cargo stands as a critical necessity. The existing cargo tracking methodologies are encumbered by complexity, requiring professionals to navigate a multitude of carrier websites simultaneously. To address this challenge, our proposed solution, 'Supply Track Navigator Using Web Technology', emerges as a transformative web-based platform designed to centralize cargo tracking data, thus conserving valuable time and resources. Our objectives centre around simplifying cargo tracking, optimizing resource allocation, enhancing inventory management, and delivering a user-friendly solution. Through the amalgamation of technology and supply chain expertise, we aim to redefine the industry, ushering in a more efficient and data-driven future. In summary, our project seeks to revolutionize the supply chain domain by simplifying cargo tracking processes. Our focus is on streamlining tracking procedures, optimizing resource allocation, and enhancing inventory management, ultimately fostering a more efficient, intelligent, and competitive supply chain industry. This integration of cutting-edge technology and operational insights not only addresses current challenges but also represents a visionary leap into the future of supply chain management. Serving as a catalyst for transformation, our project embodies the spirit of innovation and collaboration, with the overarching goal of enhancing the resilience and adaptability of the supply chain industry in the face of a rapidly evolving global market.*

Keywords - *Supply Chain Management, Cargo Tracking, Supply Track Platform, Resource Optimization, Inventory Management, Web-Based Tracking, Data-driven Solutions, Technology Integration, Operational Efficiency, Global Market Adaptability, Innovation in Supply Chain, Collaborative Logistics, Future of Supply Chain, Intelligent Supply Chain, Resilient Logistics*

PAPER ID: EXTC_06

PYTHON POWERED COLLEGE RECRUITMENT PLATFORM

Rushabh Nikam¹, Shubham Patil², Aasavaree Rane³, Kushal Suvarna⁴
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Abstract : *The "Python Powered College Recruitment Platform" is an innovative and efficient solution designed to streamline the college recruitment process for both students and employers. In today's competitive job market, it is crucial to connect talented students with suitable job opportunities, and this platform leverages the power of Python to achieve this goal. This platform offers a user-friendly interface for students, allowing them to create profiles, upload their resumes, and browse through a wide range of job listings. It also provides features like personalized job recommendations based on their skills and preferences. Employers can register on the platform, post job openings, and access a database of qualified student profiles.*

Python, a versatile and widely-used programming language, serves as the backbone of the system, providing robust data processing and analysis capabilities. Through the use of Python, the platform can match students with job listings that closely align with their academic qualifications and career aspirations. Machine learning algorithms are employed to continuously improve the recommendation system, making it a dynamic and adaptive tool. Moreover, the platform incorporates data analytics to provide insightful metrics to colleges and employers. Institutions can monitor the success of their students in the job market, while employers can analyze the effectiveness of their recruitment strategies.

In summary, the "Python Powered College Recruitment Platform" is an innovative solution that harnesses the capabilities of Python to create a seamless and efficient bridge between students and employers. By integrating data-driven recommendations and analytics, it not only simplifies the recruitment process but also contributes to the success of both students and organizations in the ever-evolving job market

Keywords- Python , Recruitment , Resume, Job matching , student empower Bridge

PAPER ID: EXTC_07

Analysis of AI-Powered Lung Cancer Prediction Techniques

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Abstract: Lung cancer is one of the leading causes of cancer deaths worldwide. Early detection and diagnosis are crucial for improving patient outcomes. This paper reviews recent advancements in artificial intelligence (AI) techniques for lung cancer prediction from medical images. In particular, convolutional neural networks (CNNs) have shown promise for accurate analysis of complex computed tomography (CT) scans. A comprehensive literature survey is conducted to summarize state-of-the-art research on AI-based lung cancer detection systems. Key technical aspects including image preprocessing, nodule segmentation, data augmentation, neural network architecture design, and model evaluation metrics are examined. Challenges related to data limitations, class imbalance, and model generalization are highlighted. The experimental analysis involves developing a CNN for classifying lung CT images into normal or cancerous categories. Performance metrics including accuracy, sensitivity, specificity, AUC-ROC, and confusion matrix are computed. Overall, the integration of deep learning with medical imaging can potentially transform lung cancer screening and diagnosis, but requires continued research to address existing limitations

Keywords - Convolutional Neural Networks, CT scan, Deep learning, lung cancer, lung cancer database

PAPER ID: HAS_01

Language Acquisition Through Communicative Language Teaching

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Abstract: *The process of acquiring language is intricate, encompassing diverse approaches and methodologies. One notably influential approach that has garnered substantial attention in recent decades is Communicative Language Teaching (CLT). This paper endeavors to investigate the impact of CLT on language acquisition by delving into its theoretical underpinnings, fundamental principles, and empirical support. By scrutinizing existing literature and studies, the objective is to furnish a comprehensive comprehension of CLT's efficacy in fostering language acquisition within second and foreign language contexts. The outcomes of this research aim to provide valuable insights for language educators and curriculum developers seeking to enhance language learning environments.*

Keywords – *Communicative Language Teaching, Language acquisition, Second Language, Foreign language.*

PAPER ID: HAS_02

LEADERSHIP: MANAGEMENT TRAITS FOR ACTIVE ORGANISATIONAL FUNCTIONING

Dr. Trupti Patil¹, Dr. Prashant Pawar²

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Abstract : *Cultivating managerial skills must be a top priority for all sorts of organizations' leaders. These are thought to be essential for ensuring that organizations work effectively. The major aim is to highlight the worth of leadership aptitudes. The leaders are also conscious of the reality that, in order for the organization to function well, they must continually work to improve these talents. Communication, inspiration, creativity, optimism, feedback, delegation, trustworthiness, work ethics, conscientiousness, and conflict resolution are some of the numerous forms of leadership qualities. The fruitful and satisfactory application of leadership abilities depends on a number of variables. These are the different kinds of employment responsibilities, circumstances, goals, and client needs. When leaders use one or more types of skills, they must make sure that these skills are advantageous to people both inside and outside the organization as well as to the organization as a whole. Therefore, throughout their careers, leaders must concentrate on developing these qualities. In this study, the paper delve into the significance of leadership in organizations, examine various leadership philosophies, and learn how both aspiring and seasoned leaders can foster a leadership culture in their workplaces.*

Keywords - *Abilities, leadership culture, Leadership Skills, Management Skills.*

PAPER ID: HAS_03

Extractive spectrophotometric determination Co(II) with 5-Chlorosalicylaldehyde thiosemicarbazone of in butyl acetate

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Abstract: *The complex of 5-Chlorosalicylaldehyde thiosemicarbazone and Co(II) has been quantitatively extracted in butyl acetate in the pH range of 4.6–5.2 after equilibrating for 60 sec. Up to 9.0 $\mu\text{g mL}^{-1}$ concentration of Co(II), the complex of 5-Chlorosalicylaldehyde thiosemicarbazone with Co(II) in butyl acetate follows Beer's law, with its maximum absorbance occurring at 425 nm. By employing the Jobs continuous variation method, the composition 1:2 has been determined for the Co(II)-CSTSC complex. The extracted complex remained stable for more than 24 hours. $6.637 \times 10^{-3} \mu\text{g cm}^{-2}$ was determined to be Sandell's sensitivity, whereas $0.887 \times 10^4 \text{ L mol}^{-1} \text{ cm}^{-1}$ was the molar absorptivity. Synthetic samples have been effectively analysed using this method.*

Keywords - *Butyl acetate, extraction, Cobalt, CSTSC, water samples.*

PAPER ID: MCA_01

From filters to discover: A deep dive into snapchat AI capabilities

Prof. Sonia Dubey¹, Sailee Kadam², Aadarsh Choudhari³

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Abstract: *In this research paper, we delve into the captivating world of Snapchat's AI technology. We aim to uncover the secrets behind the magic that makes Snapchat's AI so powerful. By examining its various features and applications, we seek to understand how AI enhances the user experience and shapes the future of social media. Through a combination of analysis, experimentation, and user feedback, we hope to shed light on the untapped potential of Snapchat's AI. Join us on this exciting journey as we unveil the magic behind Snapchat's AI!*

Keywords - *AI technology, algorithms, analysis, augmented reality, behavior, chatbots, data, design, experience, feedback, filters, image recognition, innovation, learning, natural language processing, personalized, platforms, privacy, recommendations, responses, safeguarding, seamless, social media, technology, user, user-centric, virtual assistants.*

PAPER ID: MCA_02

**Cyberbullying Detection using Robustly Optimized BERT
Pre-training Approach (RoBERTa)**

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Abstract: *Cyberbullying has spread like wildfire on social media sites, seriously impairing people's mental and emotional health. We present a substantially optimised BERT pre-training method for cyberbullying detection in this work, called RoBERTa. By utilising the contextualised representations provided by RoBERTa, our goal is to improve the precision and resilience of cyberbullying detection methods. We report a thorough experimental assessment on benchmark datasets that shows how well our suggested method works to detect cyberbullying incidents. To further understand the behaviour and performance of the model, we carry out in-depth ablation investigations and error analysis. According to our findings, RoBERTa works noticeably better than baseline techniques, demonstrating its potential to stop cyberbullying in online communities. The development of machine learning methods to solve social concerns and foster a safer online environment is aided by this study.*

Keywords: *RoBERTa, BERT, machine learning, natural language processing, pre-training, fine-tuning, data augmentation, social media, online harassment, cyberbullying detection.*

PAPER ID: MCA_03

**The effects of the internet on people Does it increase
Their intelligence**

Prof. Nitesh Kumar¹, Simran Gupta², Mukesh Patil³

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Abstract: *This study explores the complex subject of how the internet affects human intellect, focusing on the possibility that more internet usage is associated with higher cognitive capacities. By means of an extensive investigation that encompasses knowledge retrieval, critical thinking abilities, recollection, and interpersonal communication, this research aims to ascertain the total impact of internet usage on people's intellectual growth. Using a strict methodology that combines surveys, literature reviews, and empirical analyses, the study aims to offer a comprehensive knowledge of the complex interactions between internet use and cognitive ability. This study addresses the basic question of whether the internet serves as a stimulant for intellectual growth in the modern period, which is marked by widespread internet access. Through a close examination of its effects on information availability, the study seeks to understand how the internet influences learning and critical thinking abilities. The goal of research on memory retention is to determine whether engaging in online activities can have an impact on short- and long-term memory functions. The study also looks at the social ramifications of interactions mediated by the internet and evaluates how they might affect communication and social intelligence. By synthesizing existing research, survey data, and empirical findings, this study hopes to make a substantial contribution to the continuing conversation about ways in which the internet is evolving human intelligence. Through providing an extensive viewpoint on the implications of internet use on cognition in the digital age, this research seeks to contribute to the advancement of knowledge in the field of human intellectual development.*

Keywords - *Communication skills, Human intelligence, Internet impact, Information access, online interactions. Social interaction, Technological influence.*

PAPER ID: MCA_04

AR in Education: Enhancing Learning and Student Engagement

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Abstract: *This research paper offers an in-depth exploration of Augmented Reality (AR) applications in education, emphasizing their role in enhancing learning experiences and fostering student engagement. The analysis delves into the benefits and challenges associated with integrating AR into educational settings, examining various technologies and practical implementations. Comparisons are drawn between traditional teaching methods and the transformative potential of AR. The study investigates current educational practices and contrasts them with the immersive and interactive nature of AR-enhanced learning. Special attention is given to the impact of AR on student engagement, knowledge retention, and overall academic performance. The paper also discusses the importance of teacher training and infrastructure for*

successful AR integration in educational institutions.

Keywords - AR Applications, Augmented Reality, Education, Interactive Learning, Student Engagement.

PAPER ID: MCA_05

Natural Language Processing (NLP): Language Translation in Multilingual Chatbots - Challenges and Solutions

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Abstract: *This research investigates the challenges associated with language translation in multilingual chatbots leveraging Natural Language Processing (NLP). It proposes innovative solutions to overcome these challenges, emphasizing the importance of context-aware translation, domain-specific adaptations, and real-time communication. The study evaluates the effectiveness of the proposed solutions through experiments and user feedback, aiming to enhance the multilingual capabilities of chatbot communication.*

Keywords - Context-aware Translation, Domain-specific Adaptations, Multilingual Chatbots, Natural Language Processing, Real-time Communication.

PAPER ID: MCA_06

Big Data Analytics for Healthcare: opportunities and challenges

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Abstract: *The healthcare landscape is witnessing a revolutionary paradigm shift driven by the integration of Big Data Analytics (BDA). This abstract encapsulates a comprehensive overview of the applications, challenges, and future potentials of BDA in healthcare. The research explores the vast spectrum of healthcare data, emphasizing the transformative effect of analytics on patient care, operational efficiency, and medical research. From predictive analytics to personalized medicine, this abstract navigates the multifaceted terrain of BDA, delving into the complexities of data security, technological tools, and emerging trends that shape the future of healthcare. Challenges and issues inherent to BDA in healthcare are explored, including data security and privacy concerns, data quality, regulatory compliance, and the existing skill gap in healthcare analytics. The abstract then shifts focus to the technological landscape, elucidating the role of tools such as Hadoop, Apache Spark, machine learning, and data warehousing in driving successful BDA implementations.*

Keywords – Big Data Analytics, Healthcare Operations, Public Health Surveillance, Hadoop, Future Trends.

PAPER ID: MCA_07

Leveraging Artificial Intelligence for Enhanced Cybersecurity

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Abstract: *This research paper presents a comprehensive analysis of leveraging Artificial Intelligence (AI) to enhance cybersecurity measures. It explores the integration of AI technologies to fortify detection, prevention, and response mechanisms in the realm of cybersecurity. The paper delves into the advantages and challenges associated with incorporating AI, shedding light on various algorithms such as machine learning, deep learning, and natural language processing. The study compares the effectiveness of traditional cybersecurity approaches with AI-driven methodologies, emphasizing the role of these advanced techniques in bolstering defence mechanisms.*

Keywords – *Anomaly Detection, Artificial Intelligence, Cybersecurity, Deep Learning, Machine Learning.*

PAPER ID: MCA_08

Data Warehouse and Data Mining for Business Intelligence

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Abstract: *This paper presents a comprehensive exploration of the integration of data warehouse and data mining technologies to enhance business intelligence capabilities. Beginning with an overview of data warehouse architecture and its significance in centralizing and analyzing data, the paper categorizes data mining techniques into supervised, unsupervised, and semi-supervised learning, elucidating their roles in predictive analytics, customer segmentation, and market analysis. Through real-world case studies across industries such as retail, healthcare, and financial services, the practical applications of data warehouse and data mining are exemplified, showcasing their efficacy in customer behavior analysis, disease diagnosis, and fraud detection. Despite their potential benefits, challenges in implementation including data quality, scalability, and ethical considerations such as privacy preservation are also discussed. The paper concludes with insights into future trends including big data integration and machine learning automation, highlighting the evolving landscape of data-driven decision-making. Overall, this paper serves as a valuable resource for organizations seeking to leverage data warehouse and data mining technologies for informed decision-making and competitive advantage in the digital era.*

Keywords - *Business Intelligence, Data Mining, Data Warehouse, Decision-Making, Predictive Analytics.*

PAPER ID: MCA_09
Decentralized Finance

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Abstract: *Decentralized Finance (DeFi) is a groundbreaking shift from traditional finance, utilizing blockchain to eliminate intermediaries. While not strictly defined legally or technically, DeFi encompasses decentralization, distributed ledger tech, smart contracts, disintermediation, and open banking. Unlike traditional notions, decentralization in DeFi isn't solely tied to distributed ledgers, emphasizing a shift in service provision. Disintermediation, often a byproduct, results from the challenge of recouping costs in a decentralized setup. In this context, DeFi signifies the decentralized delivery of financial services, integrating infrastructure, markets, technology, and methodologies. Smart contracts, programmable currency, and peer-to-peer exchanges are pivotal. Emphasizing transparency and peer-to-peer relationships, DeFi stands in contrast to traditional finance. By fostering inclusivity, reducing costs, and empowering individuals, DeFi shapes a transparent, innovative, and democratic financial landscape.*

Keywords: *Community Ownership, Decentralized Ethos, Non-custodial Trading, Permissionless Access, Token Swaps*

PAPER ID: MCA_10
**Healthcare predictive analysis for diabetic patients using data
Science model**

Prof. Nitesh kumar¹, Saurav Chaurasiya², Shweta Chaurasiya³
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Abstract: *The burden of diabetes is escalating globally, particularly in developing economies such as India, primarily driven by the rising prevalence of overweight/obesity and unhealthy lifestyles. In 2019, estimates indicated that 77 million individuals in India had diabetes, a figure projected to exceed 134 million by 2045. Of these, approximately 57% remain undiagnosed. Type 2 diabetes, comprising the majority of cases, can result in multiorgan complications categorized broadly as microvascular and macrovascular. These complications significantly contribute to heightened premature morbidity and mortality among individuals with diabetes, resulting in diminished life expectancy and imposing substantial financial burdens on the Indian healthcare system. The risk factors for diabetes predominantly include ethnicity, age, obesity, physical inactivity, unhealthy dietary habits, and behavioral factors, alongside genetics and family history. Preventing and/or delaying the onset of diabetes complications requires good control of blood sugar, blood pressure, and blood lipid levels. However, in India, addressing the prevention and management of diabetes and associated complications poses a significant challenge due to various factors such as the absence of a multisectoral approach, inadequate surveillance data, low awareness about diabetes and its risk factors and complications, limited access to healthcare settings, and affordability issues related to medications. The need of the hour is effective health promotion and primary prevention at both individual and population levels to curb the diabetes epidemic and reduce diabetes-related complications in India.*

Keywords - Burden, complications, Data, Naïve Bayes Classifier, Support Vector Machine, type 2diabetes

PAPER ID: MCA_11
Revolutionizing Education with AI: Recent Developments and Future Directions

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Abstract: From unique educational perspectives, this article reports a comprehensive review of selected empirical studies on artificial intelligence in education (AIED) published in 1993–2020, as collected in the Web of Sciences database and selected AIED-specialized journals. A total of 40 empirical studies met all selection criteria, and were fully reviewed using multiple methods, including selected bibliometrics, content analysis and categorical meta-trends analysis. This article reports the current state of AIED research, highlights selected AIED technologies and applications, reviews their proven and potential benefits for education, bridges the gaps between AI technological innovations and their educational applications, and generates practical examples and inspirations for both technological experts that create AIED technologies and educators who spearhead AI innovations in education. It also provides rich discussions on practical implications and future research directions from multiple perspectives. The advancement of AIED calls for critical initiatives to address AI ethics and privacy concerns, and requires interdisciplinary and transdisciplinary collaborations in large-scaled, longitudinal research and development efforts

Keywords – Artificial intelligence AI, AI in Education

PAPER ID: MCA_12
Ransomware

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Abstract: The Ransomware, a menacing cyber menace, has become a dominant and disruptive force in the virtual realm. In this scholarly study, we delve into the complex layers of ransomware, uncovering its past transformations, technical complexities, and the financial and psychological incentives that fuel its creators. We thoroughly examine the evolution of encryption codes, evasion tactics, and code infusion tactics to grasp the highly advanced nature of modern-day ransomware. Through a thorough assessment of cryptographic weaknesses and the elusive strategies used by ransomware to avoid detection and forensic examination, our research adds to the advancement of cutting-edge defense strategies. This research delves into the economic consequences of ransom payments, operational disruptions, and the underlying human factors that contribute to vulnerability to cyber attacks. By examining various countermeasures such as machine learning, artificial intelligence, backup procedures, and employee training, this study aims to develop proactive measures against ransomware incidents. Additionally, it addresses the legal and ethical

considerations surrounding ransomware, including the challenges of tracing attacks and international collaboration, to inform policy-making. Through the analysis of real-life cases and exploration of emerging patterns, this paper provides valuable perspectives on the constantly evolving realm of ransomware.

Keywords – Doxware, Extortionware, Infection, Teslacrypt, WannaCry

PAPER ID: MCA_13
PHISHING TECHNOLOGY

Prof. Chandni Patel¹, Tejas Nikam²

^{1,2}(MCA, VIVAinstitute of technology/ Mumbai University, India)

Abstract: *In the field of computer security, phishing is the criminally fraudulent process of attempting to acquire sensitive information such as usernames, passwords and credit card details, by masquerading as a trustworthy entity in an electronic attempting to acquire sensitive information such as usernames, passwords and credit card details, by masquerading as a trustworthy entity in an electronic communication. Phishing is a fraudulent email that attempts to get you to divulge personal data that can then be used for illegitimate purposes. There are many variations on this scheme. It is possible to Phish for other information in addition to usernames and passwords such as credit card numbers, bank account numbers, social security numbers and mothers' maiden names. Phishing presents direct risks through the use of stolen credentials and indirect risk to institutions that conduct business online through erosion of customer confidence. The damage caused by phishing ranges from denial of access to email to substantial financial loss. This report is also concerned with anti-phishing techniques. There are several different techniques to combat phishing, including legislation and technology created specifically to protect against phishing. No single technology will completely stop phishing. However, a combination of good organization and practice, proper application of current technologies and improvements in security technology has the potential to drastically reduce the prevalence of phishing and the losses suffered from it. Anti-phishing software and computer programs are designed to prevent the occurrence of phishing and trespassing on confidential information. Anti-phishing software is designed to track websites and monitor activity; any suspicious behaviour can be automatically reported and even reviewed as a report after a period of time.*

Keywords – Phishing attacks, social engineering, Cybersecurity threats, Email phishing, Website spoofing

PAPER ID: MCA_14
“Cybersecurity in the IoT”

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Abstract: *The Internet has changed into a modern generation, interconnecting structures and devices in remarkable methods. This paper pursuits to critically examine cybersecurity challenges in biological system, aimed at discovery vulnerabilities, assess communication risks, and address*

data privacy concerns, examining the lack of standardization, and navigate regulatory compliance challenges. The paper outlines the significance of securing IoT, Potential effects of a protection breach on users' privacy, society, and corporations had been emphasised. Structured round key targets and uncertain studies questions, methodology phase info the puzzling technique taken to investigate these challenges. In conclusion, the paper strange summarizes key findings, acknowledges random limitations, and proposes bizarre future research directions. Conveniently, By providing a confusing roadmap IoT landscape, this research aims to it helps create an ongoing discourse on the topic enhancing security measures, fostering continued growth, and adoption of IoT technology.

Keywords - *Internet of Things; cybersecurity; device vulnerabilities; communication risks; data privacy.*

PAPER ID: MCA_15
Cyber Security in Mobile Banking

Prof. Shreya Bhamare¹, Rajesh Kharat², Suraj Trivedi³
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Abstract: *A Comprehensive Approach with the widespread adoption of mobile banking, ensuring robust cybersecurity measures is imperative to protect against evolving cyber threats. This abstract delves into the multifaceted landscape of cybersecurity in mobile banking, emphasizing the need for a comprehensive approach to mitigate risks effectively. We explore various security layers, including robust encryption protocols, advanced authentication mechanisms such as biometrics and multifactor authentication, and real-time transaction monitoring systems. Additionally, this abstract highlights the significance of proactive threat intelligence and continuous security assessments to identify and address vulnerabilities promptly. Furthermore, user education and awareness campaigns play a pivotal role in promoting secure mobile banking practices and mitigating human-related risks, such as phishing attacks. By implementing these strategies, financial institutions can bolster the security posture of mobile banking platforms, instilling trust and confidence among users and ensuring the integrity of financial transactions in the digital era.*

Keywords – *Cyber Crime, Cyber fraud, Internet, Insider threats, Malware, Mobile banking transaction, Mobile phone, Phishing attacks, Secure, Security, Sustainable cybersecurity, Two-factor authentication.*

PAPER ID: MCA_16
Integration of Machine Learning and Robotics in Industrial Automation

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Abstract: *The integration of machine learning and robotics in industrial automation represents a transformative synergy, enhancing operational efficiency and adaptability. Machine learning*

algorithms empower robots to analyse vast datasets, enabling real-time decision-making and predictive maintenance. This fusion optimizes production processes by continually refining tasks and responses, reducing downtime, and improving overall system performance. As machines learn from experience, they can adapt to dynamic environments, fostering flexibility and resilience in industrial settings. This integration not only streamlines routine tasks but also augments human capabilities, creating a collaborative and intelligent ecosystem. The convergence of machine learning and robotics in industrial automation heralds a new era, where intelligent machines contribute to agile, data-driven, and efficient industrial processes. The paper presents numerous resources that guide building knowledge.

Keywords – Actuators, Algorithms, Analytics, Decision Making, Efficiency, Human Capabilities, Industry, Innovation, Intelligent, Learning Capabilities, Machines, Performance, Robotics, Sensors.

PAPER ID: MCA_17

Machine Learning approach for Overcoming Challenges in traditional education and Enhancing Educational Experiences

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Abstract: *The delivery of tailored and efficient learning experiences is frequently hampered by the fundamental problems that traditional education institutions encounter. In order to overcome these obstacles and usher in a new era of education that is adaptive, data-driven, and customized to the various needs of individual learners, this study investigates the application of machine learning (ML). Teachers may overcome the constraints of conventional teaching techniques and adapt their lessons to the individual learning preferences, styles, and speeds of each student by utilizing the power of machine learning algorithms. At the institutional level, machine learning (ML) supports data-driven decision-making by assisting teachers in forecasting enrolment trends, modifying curriculum designs, and effectively allocating resources. In the current day, predictive analytics with machine learning algorithms has emerged as a new tool to help academic institutions increase student retention and success rates as well as gain an overview of performance prior to exams to lower the chance of failure. Ethical considerations, privacy concerns, and cooperative efforts between educators and technologists are stressed as we investigate the potentials of machine learning in education.*

Keywords – data-driven decision making, immersive learning environment, Machine Learning, predictive analytics, traditional education

PAPER ID: MCA_18

Optimizing Cloud Computing Security through IT Governance

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Abstract : *In recent years, the proliferation of cloud computing services has transformed the landscape of IT infrastructure, offering unprecedented flexibility, scalability, and cost-effectiveness. However, this shift towards cloud-based solutions has also introduced new challenges in terms of security and governance. This abstract proposes a comprehensive approach to optimizing cloud computing security through effective IT governance frameworks. The abstract begins by outlining the key security concerns associated with cloud computing, including data breaches, unauthorized access, and compliance issues. It then highlights the critical role of IT governance in mitigating these risks by establishing clear policies, procedures, and controls for cloud adoption and usage. Drawing on established principles of IT governance, such as those outlined in frameworks like COBIT and ISO 27001, the abstract presents a structured approach to enhancing cloud security. This approach encompasses the following key components: 1. Risk Management, 2. Compliance Management, 3. Vendor Management, 4. Access Control, 5. Security Monitoring and Incident Response.*

Keywords – Access Controls, Business Alignment, Cloud Computing, Cloud Computing, Compliance, Cloud Service Providers, Data Privacy, Governance Frameworks, Information Security, IT Governance, Risk Management, Security, Security Policies.

PAPER ID: MCA_19

Explainable Artificial Intelligence: Methods and Applications in Decision-making Systems

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Abstract:

Explainable Artificial Intelligence (XAI) has emerged as a critical area of research and development, driven by the need for transparency and interpretability in complex machine learning models. This paper provides a thorough overview of various methods employed in XAI to enhance the understandability of AI systems. Rule-based systems leverage explicit conditions for decision-making, while decision trees offer a hierarchical and intuitive structure. Local Interpretable Model-agnostic Explanations (LIME) generate faithful explanations through data perturbation, and SHapley Additive exPlanations (SHAP) apply game theory principles to attribute feature importance. Counterfactual explanations unveil alternative scenarios, and Anchors identify minimal feature sets influencing model predictions. These methods find applications across diverse domains, including healthcare, finance, and autonomous vehicles. As XAI continues to evolve, the pursuit of clear, interpretable, and accountable AI systems remains paramount, ensuring the responsible integration of artificial intelligence into real-world applications.

Keywords: *Decision Trees, Explainable Artificial Intelligence (XAI), Interpretability, Local Interpretable Model-agnostic Explanations (LIME), Machine Learning Models, Rule-Based Systems, SHapley Additive exPlanations (SHAP), Transparency.*

PAPER ID: MCA_20

The Role of Artificial Intelligence and Machine Learning in Transforming Healthcare

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Abstract: *The role of Artificial Intelligence (AI) and Machine Learning (ML) in transforming healthcare is profound and multidimensional, heralding a new era of medical innovation and improved patient care. AI and ML technologies are revolutionizing healthcare by enhancing diagnostic accuracy, optimizing treatment plans, personalizing patient care, and improving healthcare delivery systems. These technologies analyse vast amounts of healthcare data, including electronic health records, medical imaging, and genomics, to uncover patterns and insights that were previously inaccessible. AI algorithms support clinicians in making more informed decisions, predicting disease outbreaks, and identifying potential therapeutic interventions. ML models facilitate early disease detection, monitor patient health in real-time, and predict patient outcomes, thereby enabling preventive healthcare measures. Additionally, AI and ML are instrumental in drug discovery and development, significantly reducing the time and costs associated with bringing new treatments to market. The integration of AI and ML into healthcare holds the promise of enhancing patient outcomes, reducing healthcare costs, and addressing the challenges posed by an ever-growing and aging global population. However, this integration also raises ethical, privacy, and security concerns that must be carefully managed. Overall, the role of AI and ML in healthcare is transformative, offering unprecedented opportunities to improve health and well-being on a global scale.*

Keywords: *AI (Artificial Intelligence), Data analysis, Diagnostic accuracy, Drug discovery, Early disease detection, Ethical considerations, Healthcare transformation (Machine Learning), Personalized care, Predictive analytics, Preventive healthcare, Privacy, Security, Treatment optimization.*

PAPER ID: MCA_21

Application of Blockchain in Supply Chain Management

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Abstract : *This research paper explores the application of blockchain technology in supply chain management to address challenges related to transparency, traceability, and trust in the modern globalized economy. The adoption of blockchain in supply chains offers a decentralized and secure framework for recording, verifying, and sharing transactions across a network of participants. The study delves into the key features of blockchain, including immutability, transparency, and smart contracts, and examines their role in enhancing the efficiency and reliability of supply chain processes. Through a comprehensive review of existing literature and case studies, the paper identifies the potential benefits of blockchain in mitigating issues such as counterfeiting, fraud, and inefficiencies within supply chains. The research investigates various blockchain implementations and their impact on different stages of the supply chain, from raw material sourcing to product delivery. Additionally, the paper discusses the challenges and limitations associated with integrating blockchain technology into established supply chain systems. In conclusion, this research contributes to the growing body of knowledge on blockchain applications in supply chain management. It highlights the transformative potential of blockchain technology in creating more resilient, transparent, and trustworthy supply chains, paving the way for future advancements in this critical domain of business and logistics.*

Keywords: *Blockchain, Supply Chain Management Transparency, Traceability, Trust, Smart Contracts, Decentralization, Counterfeiting, Fraud Prevention, Immutability, Intermediaries, Logistics, etc*

PAPER ID: MCA_22

Enhancing Security and Scalability in Blockchain Networks

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Abstract : *Blockchain technology is a revolutionary innovation that enables decentralized, secure, and scalable transactions and applications. However, blockchain also faces significant challenges in terms of security, privacy, and scalability, which limit its potential and adoption. In this paper, we provide a comprehensive review of the existing literature on blockchain security and scalability issues and solutions. We also propose some novel solutions based on dynamic sharding, optimized consensus protocols, and interoperability frameworks. We evaluate the performance and feasibility of our proposed solutions and compare them with the state-of-the-art approaches. We conclude with some open research questions and future directions for enhancing security and scalability in blockchain networks.*

Keywords - *Blockchain, Consensus, Interoperability, Scalability, Security, Sharding.*

PAPER ID: MCA_23

Facial Recognition Technology in Public Spaces

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Abstract : *This research paper investigates the integration of Facial Recognition Technology (FRT) in public spaces, focusing on its implications for privacy, security, and societal dynamics. The study delves into the challenges and opportunities posed by FRT, exploring its applications in diverse contexts such as law enforcement, public safety, and customer service. It critically assesses the ethical considerations surrounding the deployment of FRT, examining issues related to consent, surveillance, and potential biases. The paper also evaluates the technological advancements driving FRT and its integration with other emerging technologies. Additionally, it discusses regulatory frameworks and legal implications governing FRT in public spaces, aiming to provide insights into responsible and ethical deployment practices.*

Keywords: *Bias, Ethical Considerations, Facial Recognition Technology, Privacy, Security.*

PAPER ID: MCA_25

Leveraging Blockchain-Based Electronic Health Record Systems in Healthcare

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Abstract : *Digitalization has become a crucial part of healthcare 4.0 by transforming systems such as electronic health records (EHR), electronic medical records (EMR), and electronic personal medical records (ePHR). Healthcare 4.0 is derived from industry 4.0 and aims to enhance collaboration, virtualization, coherence, and convergence, which helps transform modern healthcare into more personalized and predictive. Healthcare 4.0 also aims to develop digital enablers which will support coordination among various stakeholders and seamless information flow in the patient journey towards wellbeing. These systems enhance patient care through the timely sharing of patient data across different providers globally. Timely sharing helps, but it also makes the electronic system vulnerable to alteration and breaches. In healthcare, blockchain application is widely used in various areas, such as health information exchange, pharmaceutical counterfeit, clinical trials, health supply chain management, patient data management, insurance claims, and product recall in case of adverse events. This research paper aims to identify how blockchain technology can help enhance the privacy and security of electronic health record systems. This paper discusses various blockchain-based systems, which provide a more efficient and secure option than client-server architecture-based traditional EHR systems.*

Keywords – : *Blockchain, Digitalization, EHR, Healthcare, Sustainability.*

PAPER ID: MCA_26

The Future of Autonomous Vehicles

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Abstract : *The advent of autonomous vehicles represents a transformative paradigm shift in transportation, with profound implications for safety, efficiency, and societal well-being. This research paper explores the current state, technological innovations, challenges, and future prospects of autonomous vehicles. The analysis encompasses a multidimensional examination, encompassing technological advancements, economic and social implications, and public perception. Case studies highlight successful implementations and lessons learned, contributing to a comprehensive understanding of the evolving landscape of autonomous vehicles. The paper concludes with reflections on the potential impact on society and recommendations for navigating the challenges ahead.*

Keywords – Artificial Intelligence, Autonomous Vehicles, Case Studies, Connectivity, Employment, Future Developments, Machine Learning, Mobility, Public Perception, Regulation, Safety, Self-driving Cars, Sensor Technology, Smart Cities, Urban Planning

PAPER ID: MCA_27

Vectorized Databases: Revolutionizing Data Processing

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Abstract: *This research investigates the performance and efficiency of vectorized databases in handling analytical workloads compared to traditional row-based databases. Notable vectorized databases, including Apache Arrow Flight, Intel Vectorized Query Acceleration (VQA), and ClickHouse, are examined through experimental evaluations. Results demonstrate consistent improvements in query execution time and scalability in vectorized databases, emphasizing their potential as efficient tools for data-intensive tasks. The study contributes valuable insights for database decision-makers and developers seeking optimal solutions for analytical processing.*

This research delves into the world of database technology, focusing on the performance and efficiency of vectorized databases in comparison to their traditional row-based counterparts when handling analytical workloads. The study centers around a comprehensive evaluation of prominent vectorized databases, namely Apache Arrow Flight, Intel Vectorized Query Acceleration (VQA), and ClickHouse. Through a carefully designed experimental methodology, this research seeks to shed light on the specific advantages and impact of vectorized processing in diverse scenarios.

Keywords- Artificial Intelligence, AI History, Biometrics, Machine Learning, Speech Recognition.

PAPER ID: MCA_28

Cybersecurity Threats and Countermeasures in the Era of Remote Work

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Abstract: *As remote work becomes increasingly prevalent, the need for robust cybersecurity measures is paramount. This research paper explores the evolving landscape of cybersecurity threats in the era of remote work, identifying common challenges such as phishing attacks, insecure endpoints, and data breaches. Through the examination of real- world examples, the paper aims to provide insights into the severity of these threats.*

Furthermore, it delves into proactive countermeasures, encompassing secure communication protocols, advanced endpoint security solutions, and comprehensive employee awareness training. By addressing these issues, organizations can fortify their defenses and foster a secure environment for remote work.

Keywords – Cybersecurity, Counter Measures, Threats, Remote Work.

PAPER ID: MCA_29

Cloud Security Challenges

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Abstract : *Cloud computing has come a vital tool for businesses and individualities to store and access data and operations. Still, with the adding reliance on Cloud services comes an increased threat of security breaches and data loss This paper delves into security challenges within cloud computing, including issues like data breaches, unauthorized access, and a lack of transparency. Additionally, the paper examines potential solutions to these concerns, such as implementing robust authentication protocols, encryption, and conducting regular security assessments. It emphasizes the significance for organizations to be vigilant about these security risks and adopt necessary measures to safeguard their data and systems in the cloud.*

Keywords - Cloud technology, Unauthorized data access, Safeguarding information, Auditing security measures, Security challenges.

PAPER ID: MCA_30

Cybersecurity : Enhancing Cybersecurity through Behavioral Biometrics

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Abstract: *Enhancing cybersecurity through behavioral biometrics involves leveraging unique patterns of behavior to authenticate and verify the identity of users. Unlike traditional authentication methods like passwords or tokens, behavioral biometrics focuses on the inherent and distinctive ways individuals interact with devices and systems. Here are some ways to enhance cybersecurity through behavioral biometrics.*

Keywords - *Cybersecurity, Keystroke Dynamics, Mouse Dynamics, Gesture Recognition, Behavioral Profiling, Biometric Fusion, User Education and Awareness, Risk Analysis, Attacks.*

PAPER ID: MCA_31

Revolutionizing Digital Education in Machine Learning: Unveiling the Impact of Blockchain Technology

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Abstract: *Blockchain technology represents a new era in technological innovation, with far-reaching impacts across various sectors. Its core concept revolves around decentralized databases, mitigating risks associated with single points of failure and streamlining processes to save time and reduce costs. While much of the current focus lies on cryptographic currencies like Bitcoin and Ethereum, the potential applications extend far beyond finance. By eliminating the need for intermediaries, blockchain facilitates secure transactions and fosters trust in digital interactions. With the rise of smart devices and advancements in artificial intelligence and machine learning, interdisciplinary collaborations involving blockchain hold immense promise for future research endeavors. Given its decentralized nature and the vast amount of data involved in machine learning, exploring the synergies between blockchain technology and machine learning opens up exciting avenues for innovation and discovery. This paper delves into the multifaceted utilization of blockchain technology within the realm of machine learning, discussing various components and applications. It examines the beneficial implementation of blockchain in specific areas of machine learning, shedding light on potential application domains.*

Keywords - *Machine Learning, Blockchain Technology, Distributed Digital Ledger, E-learning, Quality Education.*

PAPER ID: MECH_01
**FABRICATION OF AUTOMATIC NIMBU SHIKANJI
MACHINE**

Suneet Mehta¹, Shiva Bind², Kamal Chauhan³, Kunal Mandavkar⁴
^{1,2,3,4}(Department of Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract : *Introducing the Lemon Shikanji Making Machine with IoT Integration, a revolutionary appliance for effortless lemon shikanji preparation. With a user-friendly mobile app, control and monitor the juicing process remotely. This efficient machine automatically cuts, squeezes, and extracts lemon juice, eliminating manual labor. The IoT system offers insights into juicing habits, sends maintenance alerts, and suggests recipes based on preferences. Embrace cutting-edge technology for a seamless and refreshing experience in the world of healthy beverages.*

Keywords - *Internet of Things (IOT), Computer Aided Design (CAD), Automatic Fruit Grader (AFG), Convolutional Neural Networks (CNN), Field Programmable Gate Arrays (FPGA), Espresso Systems (ESP), Graphic Processing Unit (GPU)*

PAPER ID: MECH_02
PADDLE OPERATED HACKSAW

Pratiksha Sankhe¹, Kalpesh Bhoir², Tejas Jagdale³, Shreyash Jamsandekar⁴
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Abstract : *The objective of this project is to present an innovative approach to manual cutting tools, introducing a human-powered solution that leverages the time-tested crank-slider mechanism. This project integrates the concept of the crank-slider mechanism, a classic mechanical engineering principle. This mechanism seamlessly converts rotary motion into reciprocating motion, making it an ideal choice for a human-powered pedal-operated hacksaw. This innovation capitalizes on the robustness and endurance of the muscles of human leg, which are inherently better suited for sustained physical effort compared to arm muscles. The applications of the paddle-operated hacksaw extend across a wide spectrum of materials, including metals and plastics. Its versatility is particularly valuable in industries such as metalworking and furniture production. Beyond productivity, the machine has the unique ability to double as an exercise tool, promoting physical fitness while engaging in practical tasks. This dual-purpose feature aligns with the growing emphasis on integrating physical activity into daily routines. Precise construction and well-calibrated components ensure that the pedal-operated hacksaw delivers efficient and reliable cutting capabilities. The seamless integration of the crank-slider mechanism optimizes the conversion of human effort into mechanical work, enhancing overall cutting efficiency and minimizing physical strain on the operator. Moreover, its potential application in various industries can help reduce peak electricity demand and grid fluctuations in regions heavily reliant on electrical power for similar cutting tasks, since it does not need any electricity to operate functionally.*

Keywords – *Crank slider mechanism, Cutting, Hacksaw, Less Effort, Paddle operated, Time saving.*

PAPER ID: MECH_03

BEACH GARBAGE CLEANING MACHINE

Pratiksha Sankhe¹, Sharma Yashraj², Pitroda Dev³, Akash Thakur⁴

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Abstract: *The objective of this project is to study & understand the detailed knowledge of Beach Garbage Cleaning Machine. There are various types of Beach Garbage Cleaning Machines used for cleaning operations for coastal pollutions. These machines are used for cleaning large areas where various types of debris, such as plastics, litter, seaweed, and driftwood, from sandy and rocky shorelines where heavy and complex Beach Garbage Cleaning Machines are required. In order to overcome this problem, a small Beach Garbage Cleaning Machine is developed for cleaning the litter, seaweed, plastics and many more various types of garbage's from diverse beach environments, including those with high foot traffic and remote, less accessible locations while minimizing disruptions to natural habitats and wildlife at the same time. These machines provide an efficient, cost-effective, and sustainable solution to beach clean-up, preserving the nature's aesthetics of coastal areas and safeguarding marine ecosystems.*

Keywords – *Beach Cleaning Machines, Cleaning Machines, Garbage Cleaner, Beach Garbage Cleaning Machine, Design and Fabrication.*

PAPER ID: MECH_04

PROCESS OPTIMIZATION IN WARPP INDUSTRY

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Abstract : *The AVIX Suite offers real-time data capture, analysis, and visualization capabilities, providing valuable support in decision-making for organizations seeking to stay competitive in dynamic business environments.. This project aims to explore the synergies between these methodologies and a comprehensive analysis of manufacturing processes within a facility.. M/s Warpp, manufacturing facility, faces challenges such as potential bottlenecks and inefficiencies. To maintain a competitive edge, the proposed solution involves integrating industrial engineering methods and the AVIX Suite into Warpp Welding Machine's manufacturing processes. The goal is to minimize waste, improve resource utilization, and increase overall productivity through a data-driven approach. The integration of industrial engineering methods with advanced digital tools like the AVIX Suite can significantly enhance streamlined processes within organizations .This integration will yield benefits such as a data-driven approach to process optimization, continuous monitoring and feedback loops for real-time adjustments, improved communication and collaboration among cross-functional teams, and enhanced process efficiency, reducing production costs, improving product quality, and ensuring long-term sustainability.*

Keywords- *Avix suite, Cost Minimization, Process Optimization, Real time data, Streamlined Processes.*

PAPER ID: MECH_05

**DESIGN & MODIFICATION OF SILICON RUBBER DIE
CASTING MACHINE**

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Abstract: *In the evolving landscape of manufacturing technologies, the importance of developing versatile and efficient machines has never been greater. The Silicon Rubber Die Casting Machine, a pivotal innovation in this arena, is designed to address the rising demands for high precision, durable, and resilient Silicon rubber components for a myriad of applications, including healthcare, electronics, automotive, and consumer goods. At the core of this machine is a sophisticated system that ensures uniform heating and precise temperature control, facilitating the optimal curing of Silicon rubber, a material lauded for its unique mechanical and thermal properties. Unlike traditional casting methods, which often encounter challenges like bubbles, inconsistency, and material wastage, this machine boasts an advanced injection system. Furthermore, in alignment with the principles of sustainable manufacturing, the machine incorporates features that reduce material wastage and energy consumption. Manufacturers, irrespective of their production scale, can seamlessly integrate the machine into their existing operations or scale up as demand grows. The machine also incorporates the latest in safety technologies, ensuring the well-being of operators. In terms of economic implications, the Silicon Rubber Die Casting Machine offers businesses a competitive edge in the market. Moreover, the high-quality, consistent outputs reduce the need for post-production refinements, further streamlining the production process and reducing costs.*

Keywords – Casting, centrifugal force, Manufacturing, Safety, Silicon, Temperature.

PAPER ID: MECH_06

PORTABLE UV WATER STERILIZER

Sairaj Shinde¹, Rohit Solanki², Ayushi Pandey³, Sheetal Gupta⁴

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Abstract : *This study introduces portable UV LED sterilizers for efficient water filtration, addressing the lack of access to safe drinking water. Using low-power UV LEDs and PVC, the cylindrical device attaches to water bottles, instantly purifying water. With an emergency flash and smartphone charging, it offers a reliable, cost-effective solution for water sterilization and disaster preparedness, reducing dependence on centralized water supplies in emergencies.*

Keywords – D: Dimension, LED: Light Emitting Diode, PCB: Printed Circuit Board, UV: Ultra Violet, V: Volts,

PAPER ID: MECH_07

PORTABLE ETHANOL PRODUCTION MACHINE

¹Chhaya Patil, ² Malhar Gaikwad, ³ Jatin Digaskar, ⁴ Trunal Kamble.

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Abstract: *The creation of novel technologies for renewable energy sources has become crucial in a society where environmental sustainability and energy independence are becoming more and more important concerns. The Portable Ethanol Making Machine is one such invention. It is a small, adaptable machine made to efficiently and conveniently create ethanol, a clean, renewable biofuel. Its noteworthy effects on the energy scene and its possible uses. The technology for producing biofuels has advanced significantly with the invention of the portable ethanol making machine. It is made to effectively produce ethanol within a spectrum of feedstock's, including sugar- rich crops, cellulosic materials, and agricultural waste. This technology is an important tool in the global shift to sustainable energy sources since it has the ability to completely change how we generate and use biofuels*

Keywords - *Portable Ethanol, renewable biofuel, sustainable energy*

PAPER ID: MECH_08

DESIGN AND DEVELOPMENT OF AGRICULTURE UTILITY VEHICLE

Pratik Raut¹, Prerit Adawade², Ashish Kudu³, Swaraj Malvi⁴

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Abstract : *India, renowned for its agricultural heritage, sustains nearly 58% of its population through farming, a sector that profoundly influences the nation's economy and social structure. The need for such a vehicle arises from the challenges faced by modern farmers, including labour shortages, the need for increased efficiency, and the desire to reduce environmental impact. This endeavor aims to empower farmers, enhance productivity, and ensure sustainable agriculture in the face of increasing challenges. This research is emphasis on development of an equipment to help the farmer through economical point of view. Our research predicts further research given the solid model of the proposed vehicle and to get the satisfactory output from it.*

Keywords - *Multipurpose Tractor, Agriculture, Farming.*

PAPER ID: MECH_09

DEVELOPMENT OF DOMESTIC GREENHOUSE FARMING

Pratik Raut¹, Kanak Save², Vinay Sawant³, Smit Thakur⁴

^{1,2,3,4}(Department of Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract : *We the group of engineers designing and developing domestic green house. Green house farming and hydroponic farming are two innovative approaches to modern agriculture that address the challenges of food production in changing world. Greenhouse provides a controlled environment for plants, allowing better regulation of temperature, humidity, and light. It provides environmental factors, leading to efficient nutrient absorption and faster growth.*

Hydroponics, a modern farming technique, is gaining popularity for its space-efficient, resource-minimizing approach. This paper reviews its history, types, and principles, highlighting advantages like high yields, cultivation in poor soil, and reduced water/pesticide use. Limitations, including initial costs, technical expertise, and reliance on consistent resources, are also discussed. Emphasizing careful evaluation, the paper concludes by urging further research to optimize hydroponics for large-scale implementation and address challenges faced by farmers.

In India, traditional farming methods lead to challenges like unpredictable crop outcomes. Our proposed system leverages advanced technology, offering automatic monitoring of factors like water level, temperature, humidity, and light. By automating control measures and providing a comprehensive crop schedule, farmers can optimize resource usage, mitigate risks, and improve overall crop production, eliminating the need for time-consuming on-site surveys. This system addressing the limitations posed by traditional methods and promoting efficient, data-driven agriculture.

This research is emphasis on development of an equipment to help the metropolitan through economical point of view. Our research predicts further exploration based on the rough diagram and solid model of project.

Keywords - Greenhouse Farming, Hydroponic Farming, Vertical Farming.

PAPER ID: MECH_10

DESIGN & FABRICATION OF TT MACHINE

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Abstract : *This research introduces an innovative table tennis machine designed to revolutionize training for players of all levels. The compact device features an advanced robotic arm with versatile shot replication, from topspin to backspin. User-friendly customization, accessible through a mobile app or touchscreen, tailors settings to skill levels. Despite lacking an AI system, the sophisticated control system ensures precision in shot placement, speed, and frequency. A notable feature is the efficient ball-recycling system, reducing the need for manual reloading and enhancing practice efficiency. Rigorous testing, in collaboration with professional players and coaches, guarantees the machine's reliability. With its dynamic training features, this mechanical table tennis machine is set to transform the sport, providing a valuable tool for players and coaches alike, and contributing to the evolution of table tennis training standards.*

Keywords: Ball-recycling system, Collaboration, Innovative, Robotic arm, User-friendly

PAPER ID: MECH_11

**DESIGN AND FABRICATION OF COTTONSEED AND OIL
EXTRACTING MACHINE**

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Abstract : Cotton seed is a valuable agricultural by product, rich in oil content, and finding efficient methods for its extraction is vital in the production of cotton seed oil. This abstract provides an overview of cotton seed extraction and oil extraction machines, highlighting their significance, functionality, and technological advancements. Cotton seed oil is widely utilized in various industries, including food, cosmetics, and biofuels making the extraction process critical for maximizing its utility. The first section of this review examines the significance of cotton seed oil and its widespread applications, emphasizing the growing demand for high-quality cotton seed extraction and oil production. Subsequently, we delve into the primary methods employed for cotton seed extraction, such as mechanical pressing, solvent extraction, and aqueous extraction, each with its advantages and limitations. The heart of this review focuses on the various machines and technologies developed for cotton seed extraction and oil extraction. Their view further discusses solvent extraction processes and equipment, highlighting their efficiency and the associated challenges related to safety and environmental concerns. Technological innovations, such as automated control systems, have significantly improved the precision and efficiency of these machines.

Keywords - aqueous extraction, biofuels, solvent extraction.

PAPER ID: MECH_12

**MACHINE LEARNING FOR MACHINERY FAULT
DIAGNOSIS**

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Abstract : Machinery fault diagnosis is vital in maintaining industrial machinery, focusing on identifying issues through various tools to prevent breakdowns and ensure efficient operation. In machine learning, accurately detecting and predicting faults poses challenges such as data quality, imbalanced datasets, and interpretability. Addressing issues like feature selection, generalization, early fault detection, data labeling, and real time processing is crucial for predictive maintenance. Advanced techniques like machine learning and data analytics analyze data, identify patterns, and predict potential failures. However, ongoing challenge persist in interpreting results and implementing effective maintenance strategies, emphasizing the complexity of machine fault diagnosis in industrial settings.

Keywords - Tri-axial accelerometer, AIML, Vibration, Algorithms, Diagnosis.

PAPER ID: MECH_13

THERMAL MANAGEMENT OF BATTERY PACK WITH WATER COOLING

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Abstract : *Based on the identified problem by our group of the unavailability of affordable commercial usable battery pack for electric vehicles and with the goal of implementing water cooling for the same which will lead to these packs be more compact and efficient we have decided to undertake this project . Research regarding calculating the cell configuration according to the energy requirement as well as suitable selection of the motors done. Later once the cell configuration was decided and the battery pack was designed, thermal simulations were carried out to validate whether water cooling was more efficient than air cooling for the pack. It was found the water cooling provides more reliable and consistent cooling as compared to air cooling, but it also allows us to design a more compact cell module thus making the design the entire pack more efficient.*

Keywords - 1.Electric vehicle 2.Li-ion battery 3.Thermal management system (TMS) 4.Phase change material (PCM) 5.Water cooling

PAPER ID: MECH_14

DESIGN AND FABRICATION OF AUTOMATIC SAND FILTER MACHINE

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Abstract: *This project, titled "Design and Fabrication of Automatic Sand Filter Machine," addresses the inefficiencies of traditional sand filtration methods. The manual and time-consuming nature of these processes, coupled with inconsistencies in sand quality, prompted the development of an automated system. The goal is to revolutionize sand filtration, increase efficiency, and enhance the overall quality of filtered sand for diverse applications. This project is driven by the need for a modern solution that eliminates labor-intensive tasks and human error in the sand filtration process.*

Keywords - sand quality ,sand filtration, efficiency.

PAPER ID: MECH_15

PROCESS OPTIMISATION IN MSME INDUSTRY

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Abstract : *Establishment of efficient machining parameters has been a problem that has confronted manufacturing industries for nearly a century, and is still the subject of many studies. Optimum machining parameters are of great concern in manufacturing environments, where economy of machining operation plays a key role in competitiveness in the market. Determination of the optimal cutting parameters (cutting conditions) like the number of passes, depth of cut for each pass, speed, and feed is considered as a crucial stage of multi-pass machining as in the case of all chip removal processes and especially in milling operation. The effective optimization of these parameters affects dramatically the cost and production time of machined components as well as the quality of the final products. This project outlines the development of an optimization strategy to determine the optimum cutting parameters for milling operations like plain milling and face milling. This project also underlies the importance of using optimization strategies rather than handbook recommendations as well as pointing out the superiority of the multi-pass over the single-pass optimization approach. The project discusses both single-tool and multitool milling operations where emphasis has been placed on the latter. Although many efforts have been made to optimize machining parameters, from the review of the published literature it can be concluded that most of the work done is restricted to turning operations, and other machining operations, including milling, have gained little attention. Owing to the significant role that milling operations play in today's manufacturing world, there is a vital need to optimize machining parameters for this operation, particularly when NC machines are employed.*

Keywords - Cutting parameters, Drilling operations, Milling operations, NC machines, Optimization

PAPER ID: MECH_16

PROCESS IMPROVEMENT AT COLD FORGING INDUSTRY

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Abstract : *This abstract details a cold forging industry process improvement initiative, addressing stock out prevention, inventory management, and audit scores. Cold forging companies often struggle with disruptions due to stock outs and inefficiencies. A project report, utilizing market surveys and data acquisition, identified areas for enhancement. Advanced inventory tools optimized stock levels and supply chain processes, reducing stock outs and improving efficiency. Implementing these findings streamlined operations, cut inventory costs, and boosted the industry's audit score significantly. This case study illustrates the tangible benefits of data-driven approaches and process optimization, enhancing operational efficiency and customer satisfaction for manufacturers.*

Keywords - Small and Medium Enterprise (SME), Key Performance Indicator (KPI), Enterprise Resource Planning (ERP), Plan Do Check Act (PDCA), Standard Operating Procedure (SOP), Economic Order Quantity (EOQ).

PAPER ID: MECH_17

FABRICATION OF AUTOMATIC KARANJI MAKING MACHINE

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Abstract: *The first step in fabricating an automatic Karanji making machine is designing the machine. This involves creating detailed engineering drawings that specify the dimensions, materials, and components of the machine. The design must also take into account the capacity of the machine, the type of Karanji that it will be used to make, and the desired level of automation. Once the design of the machine has been finalized, the next step is fabricating the machine. This involves cutting, shaping, and welding the various components of the machine together. The machine must also be assembled and tested to ensure that it is working properly.*

Karanji is a popular Indian snack that poses challenges when produced in bulk. Automatic Karanji-making machines are available, but they are not economical for small- or medium-scale enterprises. The machine is designed to imitate the household Karanji-making process. The machine is being analyzed analytically and numerically, and it is shown to produce high-quality Karanjis.

The research will result in the development of a mechanical, semi-portable, efficient, simple, easy-to-operate, and most importantly economical machine that will successfully imitate the household karanji-making process. This machine will offer several benefits, including reduced production costs, improved ease of use, and the ability to produce high quality Karanji. They believe that their machine will have the potential to help small businesses to succeed. By making it possible to produce Karanjis at an affordable cost, the machine will be able to help small businesses to meet demand and increase their profits.

Keywords - *Cost-Effectiveness, Food Safety, Hygiene, Market Competitiveness, Time Consuming.*

PAPER ID: MECH_18

CONCEPT OF FDM PARAMETER IMPACT ON COMPRESSION STRENGTH: FILAMENT COMPARISON OF DENTAL APPLICATION

Asst. Prof. Omkar Joshi¹, Sahil Manjarekar², Yash Bhate³, Gaurav Bodake⁴

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Abstract : *This study explores how FDM process parameters and filament type affect the compression strength of FDM-printed dental parts. The study finds that infill density, layer thickness, nozzle temperature, and filament type have significant impacts on compression strength, while print speed has a negligible impact. The study provides guidance for selecting the optimal printing settings and materials to produce high-quality dental parts.*

Keywords : *FDM - Fused Deposition Modeling CAD - Computer Aided Drafting PLA - Polylactic acid ABS - Acrylonitrile butadiene styrene PC-ISO - Polycarbonate-ISO MPa – Megapascal*

PAPER ID: MECH_19

CONCEPTUAL DESIGN FOR FRENCH FRIES MAKING MACHINE

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Abstract : Introducing the Automated French Fries Making Machine, a cutting-edge solution for meeting the increasing demand for high-quality French fries. This innovative system streamlines the production process, offering increased capacity, reduced labor costs, and improved product quality. With automated potato handling, precise slicing, and customizable cooking options, it caters to diverse market preferences. Key features include automated feeding and cutting, oil temperature control, and a user-friendly interface for seamless operation. Its efficiency and reliability minimize wastage and ensure consistent quality, meeting consumer expectations and market demands while driving growth in the fast-food industry.

Keywords - Internet of Things (IOT), Computer Aided Design (CAD), Automatic Fruit Grader (AFG), Convolutional Neural Networks (CNN), Field Programmable Gate Arrays (FPGA), Espresso Systems (ESP), Graphic Processing Unit (GPU).

PAPER ID: MECH_20

UNIVERSAL 3D PRINTER FILAMENT MAKING MACHINE

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Abstract: The Universal 3D Printer Manufacturing Machine project is a groundbreaking initiative aimed at revolutionizing the 3D printing industry by creating a versatile and adaptable 3D printer that can address the limitations of existing technology. In an era where 3D printing has become integral to various industries, the need for a single, all-encompassing 3D printer that can cater to a wide range of materials, applications, and industries is evident. The project's core objectives include designing a 3D printer capable of working with diverse materials, developing user-friendly software for customization, implementing innovative technology like multi-axis printing and automated material handling, and conducting an environmental and cost-effectiveness assessment in comparison to traditional manufacturing methods. This multidisciplinary approach brings together experts from mechanical engineering, materials science, software development, and environmental studies to create a flexible and robust 3D printer prototype, and user-friendly software, and perform extensive testing for material compatibility and application suitability. Ultimately, the project seeks to achieve the creation of a Universal 3D Printer Manufacturing Machine, empowering users with a powerful, customizable, and sustainable 3D printing solution while also assessing its environmental and economic impact. The significance of this project lies in its potential to disrupt traditional manufacturing methods, offering a more sustainable and cost-effective approach, benefiting a wide array of industries, and fostering economic and environmental sustainability. By disseminating knowledge and findings, this project aims to drive innovation, collaboration, and the adoption of a more versatile and eco-friendly approach to additive manufacturing, fundamentally changing the way objects are produced and customized across various sectors.

Keywords - 3D Printing, Additive Manufacturing, Innovation, Sustainability, Material Compatibility.

PAPER ID: MECH_21

SMART WASTE SEGREGATION BIN FOR DOMESTIC USE

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Abstract : *The amount of waste has been increasing due to the rise in human population and urbanization. In cities, overflowing bins create an unhygienic environment, leading to environmental degradation. To address this issue, an "Automatic Waste Segregator" has been developed. However, this solution has inadvertently increased the workload for rag pickers, resulting in health problems for these workers. The proposed system aims to separate waste into two categories: wet and dry. This system is not only cost-efficient but also enhances waste management efficiency. Each type of waste is detected by respective sensors and segregated into compartments assigned to them. Details of waste disposal amounts can be regularly updated in the server. By integrating components such as Arduino, servo motors, and sensors, the project proposes an automated waste segregation bin that efficiently categorizes waste into dry and wet components. This system reduces reliance on manual labour, particularly benefiting rag pickers, and minimizes the environmental impact associated with traditional landfill disposal methods.*

Keywords - Waste Management, Automatic Waste Segregator, Urbanization, Overflowed Bin

PAPER ID: MECH_22

FACTORY OPTIMIZATION BY TIME MOTION STUDY

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Abstract : *Efficiency and productivity are critical in the competitive industrial landscape. Time and Motion studies are recognized as patent tools for process optimization. This abstract proposes a Comprehensive industrial project: a detailed time and motion study to boost efficiency in a Manufacturing facility. The project's primary aim is to identify and eliminate inefficiencies, trim Production costs, and enhance overall productivity. The methodology involves systematic Observations, data collection, and task analysis. Scrutinizing task motions and times aims to Pinpoint improvement opportunities. The project's significance lies in its ability to provide data-driven recommendations. It is anticipated that study outcomes will enable informed Decisions, including process reengineering, workflow adjustments, and equipment Upgrades. The project includes phases such as data collection, analysis, recommendations, and Implementation. Collaboration with key stakeholders, including factory workers, supervisors, and management, is essential for success and practicality. In conclusion, this industrial project Offers a unique opportunity to enhance manufacturing efficiency.*

Leveraging insights gained, the company can remain competitive, reduce waste, and improve its bottom line.

Keywords – *Efficiency, process, analysis, Time and Motion studies.*

PAPER ID: MECH_23

SOLAR POWERED ELECTRIC VEHICLE

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Abstract : *A groundbreaking effort is ongoing to design, develop, and implement a solar-powered electric vehicle (EV) for inter-campus transportation, with the goal of satisfying the mobility demands of students, teachers, and staff while lowering carbon emissions. This unique approach exemplifies sustainability and renewable energy goals by using solar panels to power the EV and considerably reducing the environmental effect of driving between two campuses of colleges. This project, which promotes electric mobility and renewable energy, demonstrates a forward-thinking approach to transportation and encourages an innovative and sustainable culture within the academic community, harmonizing with the institutions' commitment to environmental responsibility.*

Keywords : *Solar-powered electric vehicle (EV) , Renewable energy*

PAPER ID: MECH_24

COMPARISON OF DIFFERENT STONE CUTTING TECHNIQUES

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Abstract : *This paper provides an in-depth comparison of four stone cutting Techniques : Water Jet Cutting, Gang Saw (Frame Saw) Machine, Stone Edge Cutting Machine, and Multi-Wire Saw Machine. Each Technique's working principle, advantages, and limitations are thoroughly examined, highlighting their efficiency, precision, versatility, and environmental impact. By elucidating the operational intricacies and performance metrics of each Technique, this study aims to assist industry professionals and researchers in making informed decisions regarding stone cutting techniques for various applications.*

Keywords - *Gang Saw cutting, Jet cutting, Multi wire cutting, Productivity enhancement, Stone edge cutting.*

PAPER ID: MECH_25

FABRICATION OF AUTOMATIC CHAKLI MAKING MACHINE

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Abstract : Automation is the application of various technologies based on robotics or computer software to control machines and processes by independent systems. In order to handle the necessary levels of quality control, production labour shortages, and overall profitability, automation is now required in the food sector. In places where humans were once common, automation has taken over. Industry leaders are aware that in order to satisfy customer needs and requests, plant systems must continuously adapt. This entails buying new equipment or updating current equipment. Due to fierce competition from retailers who are always lowering prices, growing expenses for raw materials, and skyrocketing utility bills in a labour-intensive production setting, food producers are considering automating their manufacturing operations. Food manufacturing automation has a lot of advantages. The capacity to duplicate the look and feel of Automation is the application of various technologies based on robotics or computer software to control machines and processes by independent systems. In order to handle the necessary levels of quality control, production labour shortages, and overall profitability, automation is now required in the food sector. In places where humans were once common, automation has taken over. Industry leaders are aware that in order to satisfy customer needs and requests, plant systems must continuously adapt. This entails buying new equipment or updating current equipment. Due to fierce competition from retailers who are always lowering prices, growing expenses for raw materials, and skyrocketing utility bills in a labour-intensive production setting, food producers are considering automating their manufacturing operations. Food manufacturing automation has a lot of advantages. The capacity to duplicate the look and feel of a product with the minimum use of ingredients not only improves line efficiencies leading to bottom-line Profit, but also can potentially increase sales. At the same time, improving the traceability of raw ingredients will provide the Added benefit of improved food safety.

Keywords - Industrial Automation, Machine, Servo motor, Chakli, Murukku.

PAPER ID: MECH_26

DESIGN AND FABRICATION OF BANANA FIBRE EXTRACTION MACHINE

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Abstract : Banana fiber, sourced from banana pseudo stems, presents a promising sustainable substitute for synthetic fibers across various sectors such as textiles, automotive, and construction. This study is centered on the development of a versatile fiber extraction apparatus tailored for banana farming in India. Its primary objective is to enhance efficiency and safety in comparison to traditional manual techniques. The machine integrates a feeding

mechanism, precision cutting system, and automated fiber extraction unit. Through the utilization of banana pseudo stems, this technology not only boosts productivity but also minimizes waste, thereby fostering sustainability. Its potential applications span from textile manufacturing to the creation of eco-friendly packaging, thereby driving industry evolution and promoting environmental preservation.

Keywords – Pseudo stems, Synthetic fiber, Textile, Automotive, Construction, Safety, Efficiency, Automated, Eco-friendly, Fiber Extraction, Sustainability

PAPER ID: MECH_27
**DESIGN AND FABRICATION OF A MULTIPURPOSE
FITNESS MACHINE**

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Abstract :This paper introduces a novel solution to the increasing demand for versatile and space-efficient fitness equipment: the Multipurpose Fitness Machine (MFM). With physical fitness being a cornerstone of a healthy lifestyle, there is a critical need for innovative approaches that address common barriers to regular exercise such as time constraints, lack of gym access, and limited space at home. additional fitness equipment often falls short in these regards, being bulky, expensive, and specialized. the MFM aims to revolutionize home fitness by offering a single apparatus that integrates various exercise modalities into a compact and user-friendly design. By prioritizing sustainability through the use of recycled materials and energy-efficient construction, the MFM not only provides a solution to the space constraint issue but also aligns with global efforts towards resource efficiency. his abstract outlines the significance of the MFM in promoting accessible and effective exercise options for individuals of all fitness levels and preferences.

Keywords : TOC -Theory of constraints, DOF – Degree of freedom

PAPER ID: MECH_28
**A SYSTEMATIC APPROACH FOR THE MAINTENANCE OF
HEAT PUMP TEST RIG**

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Abstract: This research paper presents a systematic approach for the maintenance of heat pump test rigs. The approach includes steps, tools, and techniques used for maintenance, scheduling regular maintenance, and highlighting the benefits of a properly maintained heat pump test rig. The paper emphasizes the importance of maintaining heat pump test rigs and discusses the common issues faced during maintenance. The presented approach can help organizations reduce downtime, increasing the lifespan of heat pump test rigs, and improving the overall efficiency of the system. The paper contributes to the field of heat pump test rig

maintenance by presenting a structured approach that can be adopted for the maintenance of heat pump test rigs.

Keywords - *Computer Aided Design (CAD), Coefficient of Performance (COP), Heating, Ventilation and Air Conditioning (HVAC), Proportional-Integral-Derivative (PID), Heat Pump Test (HPT).*

PAPER ID: MECH_29

ISSUES AND CHALLENGES IN PATENTING MECHANICAL ENGINEERING RELATED INVENTIONS

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Abstract : *This paper looks at how often people are getting patents for new mechanical engineering ideas around the world. A patent is a legal protection for inventions. It is important to make sure that the patent system can change and adapt to new and creative technology for the mechanical engineering field to grow and improve. Even though there are many types of engineering, mechanical engineering plays a big part in making the Indian economy stronger.*

Keywords - *Automobile, Innovation, Mechanical Engineering, Patents and Steam Engines.*



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