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PREFACE

On behalf of VIVA Institute of Technology, I take great pleasure and pride to formally welcome you all to the 11th National Conference on Role of Engineers in Nation Building (NCRENB 2023) in association with VIVA-TECH International Journal for Research and Innovation (VIVA-TECH IJRI), ICT Academy, and Bank of Baroda.

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 2023 has received total 146 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 A REVIEW STUDY ON- SOLAR HEAT BLOCKING PAVEMENT

Hrishikesh Dighe¹, Shruti Mayekar², Suyash Hatakar³, Sairaj Jamsandekar⁴ ^{1,2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract : This paper offers a review on the theoretical underpinnings and practical uses of Solar heat blocking pavements. The purpose of this paper is to examine the usage as well as the implementation of solar heat blocking pavements. Increased concern about global warming and climate change has made it desirable for roadwork engineers to tackle environmental issues. In addition, there are also concerns that the emerging environmental issue known as the "urban heat island" phenomena, which significantly affects pedestrians as well as asphalt surfaces, may be associated with paved roads in urban areas. In order to tackle this problem from a paving perspective, solar heat-blocking pavement technology was developed to achieve the following benefits: a reduction in surface temperature, and mitigation of urban heat. **Keywords** – Urban heat island, Mitigation, Albedo, rutting, Pavement

PAPER ID: CIVIL_02 REVIEW ON COMPARATIVE STUDY ON RCC AND STEEL STRUCTURE

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Abstract : The materials used in building should be the most cost-effective, safe, and simple to work with. So, which material reigns supreme in today's development world: concrete or steel? Both have tremendous advantages. Every building material has advantages and disadvantages. RCC and steel are the most often utilised materials in most building frame systems. Steel members have a high tensile strength and ductility, whereas concrete members have a high compressive strength and stiffness. This study compares RCC and steel structures in terms of structural behaviour, cost, and other criteria that aid in determining the best suited materials for construction. In this research, a Bunglow is being studied. RCC and steel constructions are the two sorts of models. Staad Pro and ETABS software are used to analyse these models for shear forces and bending moments. The findings of each model are compared to one another to identify the optimal building material.

Keywords : Bending moment, ETABS, RCC Structure, Shear forces, Staad Pro, Steel Structure

PAPER ID: CIVIL_03 DEMONSTRATION OF SMART IRRIGATION USING SOIL MOISTURE SENSOR

Asmita mhatre¹, Jignesh machhi², Samita Dandekar³, sakshi dhawade⁴ ^{1.2,3,4}(CIVIL Engineering, VIVA Institute of Technology, University of Mumbai)

Abstract: - Smart irrigation is a technology that uses sensors and algorithms to optimize watering schedules for plants and crops. This technology can help save water, reduce waste, and improve plant growth by providing the right amount of water at the right time. One key component of smart irrigation is the soil moisture sensor, which measures the moisture content of the soil and sends this information to a control system. This demonstration aims to show how a soil moisture sensor can be used in a smart irrigation system to conserve water and improve plant growth. To begin the demonstration, a soil moisture sensor will be placed in a plant pot or soil bed. This sensor will be connected to a control system, which could be a computer or a smart irrigation controller. The control system will be programmed with the desired moisture levels for the plants and will use the data from the soil moisture sensor to determine when watering is needed. Once the system is set up and programmed, the soil moisture sensor will continuously monitor the moisture levels in the soil. When the moisture levels drop below the desired level, the control system will send a signal to the irrigation system to begin watering. The irrigation system will then deliver the necessary amount of water to the plants, ensuring that they are getting the optimal amount of moisture for healthy growth. Throughout the demonstration, the control system will be able to adjust the watering schedule based on the real-time data from the soil moisture sensor. This means that if it has been particularly dry or wet outside, the system will be able to adjust the watering schedule accordingly. This helps to conserve water and reduce waste, as the plants will not be over watered or under watered. By using a soil moisture sensor in a smart irrigation system, it is possible to significantly reduce water usage and improve plant growth. This technology can be used in a variety of settings, including residential gardens, commercial farms, and public landscaping. By demonstrating the capabilities of a soil moisture sensor in a smart irrigation system, we hope to showcase the potential benefits of this technology and encourage its wider adoption.

Keywords-sensor, soil, moisture, irrigation, smart.

PAPER ID: CIVIL_04 TRUST OPTIMIZATION

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Abstract: In India, due to rapid-fire growth of industrialization, there arise a need of storehouse and manufacturing of goods which can be fulfilled by proper designed artificial storehouse. This study gives an idea to carry out the design of an artificial storehouse. This content of work is decided as to know the different types of force/cargo goods to be considered while designing artificial storehouse with the help of literature review. This structure is proposed to design according to IS 8002007 and the dead, live, the wind cargo analysis is done according to IS.

Keywords – Auto Cad, Staad Pro, Warehouse, Dead load, Live Load, Wind Load, Load Combination.

PAPER ID: CIVIL_05 LATERAL ANALYSIS OF GEOMETRIC IRREGULAR C TYPE STRUCTURE WITH BRACING

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Abstract : The irregularity in the structure structure may be due to irregular distribution in their mass, strength and stiffness along the height of structure. When similar structures are constructed in high seismic zones, the analysis and design come more complicated. The primary ideal in designing an earthquake resistant structure is to insure that the structure has enough rigidity to repel the earthquake forces. A armed frame is a structural system designed to repel wind and earthquake forces. In this study C shaped irregular structure is considered and the geste of different type of bracings with variation in positions on this irregular structure under side cargo is anatomized. Also the effect of side cargo from colorful directions is considered. The bracing systems areX-braced frames, V braced frames, slant armed frames, and eccentric armed frames are studied that which type of bracings are perform under better seismic action comparing with mated structure. Response gamuts analyses were performed. The structural responses of frames are studied in terms of time period, storey drift, storey shear and storey relegation. The result showed a good enhancement in side resistance of frames with objectification of bracing. The result reveal that X bracings is effective to repel side cargo compared with other type of bracings.

Keywords - Lateral analysis, C Type Structure, Use of Bracing, Project Analyzing Software, E-tabs Model Generation.

PAPER ID: CIVIL_09 REVIEW ON MUMBAI COSTAL ROAD & TRAFFIC MANAGEMENT BETWEEN MAZGAON AND MARINE DRIVE

Meet Zaveri¹, Siddhesh Surve², Divya Rathod³, Dishant Patne⁴ ^{1,2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract: Mumbai, a city in India, has a long history of having severe traffic problems. Mumbai's traffic issues are typically a result of the city's inadequate infrastructure, a lack of government interest, and outdated technology compared to other areas in the globe for traffic management. In our research paper, we first explore various areas of India with severe traffic and how those areas handle and manage the congestion. The development of strategies with relation to developments in traffic administration. Mumbai's megaproject for the coastal road has been examined. The data collected through several surveys is listed below in the article. Processed survey data is discussed along with potential solutions. Since this field of study still has a lot of room for investigation, we have provided some recommendations for future studies on the subject. The review paper briefly discusses changes in infrastructure needed to manage advances in the traffic business. By reducing pollutants and easing traffic congestion, this will help Mumbai achieve sustainable growth. The study paper examines Mumbai's traffic congestion issue and how different management strategies can be effective in resolving it. **Keywords** – Mumbai, Congestion, Pollution Traffic Problems, Traffic Management

PAPER ID: CIVIL_11

FERROCK, A GREENER ALTERNATIVE TO CEMENT.

Hrishikesh Patil¹, Dimple Patil², Dakshata Takale³, Prashant Patil⁴. ^{1,2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract : In terms of anthropogenic carbon emissions, Cement production ranks fourth. The natural world faces an unprecedented environmental catastrophe as these emissions continue to rise. We present an extensive literature review and an environmental assessment of Ferrock's production, from its raw material extraction to its curing and hardening phases, and all associated processing steps. By its unique strength- gaining medium, which is in discrepancy to that of cement, the product laterally reduces carbon dioxide released, therefore making it stand out among numerous other cement supplements. Analysis of OPC results has been compared with the results of this study. The comparison of ferrock in concrete with the full relief of cement is an important part of the research.

Keywords - carbon negative, cement alternative, ferrock, iron binder, sustainable.

PAPER ID: CIVIL_13 TOP-DOWN CONSTRUCTION

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Abstract : Conventionally, buildings with underground basements are constructed using the bottom-up method, where the sub-structure and super-structure floors are sequentially built from the lowest level of the basement to the top. This method is simple in design and construction, but is not suitable for large projects with limited construction time and/or space constraints. The top-down construction method is opposite of the bottom-up method, building the permanent structure members of the basement along with the excavation from the top to the bottom. It is mainly used for tall buildings with deep basements, as well as underground structures such as parking garages, underpasses, and subway stations. This method can provide significant savings in overall construction time and has been adopted for major projects where time is critical. The construction sequence typically begins with the installation of the retaining wall, followed by the load-bearing elements which will carry the future super-structure. Basement columns, usually consisting of steel beams, are constructed before any excavation takes place and rest on the load bearing elements. These elements are usually concrete barrettes built under slurry (or caissons), which are constructed as the excavation progresses. Top-down construction is also employed.

Keywords - Basement, Excavation, Floors, Method, Installation

PAPER ID: CIVIL_14 DESIGN AND ANALYSIS OF WATER DISTRIBUTION NETWORK USING WATERGEMS.

Sahil Acharya¹, Makarand Kadam², Rutik Dighe³, Asmita Mhatre⁴ ^{1.2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract : Water is prime requirement for everyone. In virar Chikhaldongari area water demand is very essential. The WDN plays important role in supplying water to all user in area as well as the existing population of the city. WaterGEMS software would be used comparatively in evaluating the serviceability of the water distribution system of Chikhaldongari .Safe and potable drinking water is a prerequisite for sustainable living. This study is done to determine the amount of water required in forecasted year and would design the new distribution system using forecasted data. The WaterGEMS model was implemented in water distribution networks which include 94 pipes (17.917 m), 94 demand nodes (equivalent to 17792 end users).

The population was forecasted using two methods Arithmetical method and Geometrical method. The population projected in year 2031 is about 28,785 and is projected to grow 39,773 by year 2061 by using Arithmetic method. With Geometric Method the population for year 2031 is 29,199 and is projected to grow at about 40,189 at year 2061. With help of this projected population, it would be easy to calculate demand at junction, to find out the flaws at current design, to design new system.

Keywords : Chikhaldonagari Yazoo park, WDN (water distribution networks), Water GEMS.

PAPER ID: CIVIL_15 DESIGN OF WATER DISTRIBUTION NETWORK USING EPANET 2.2

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Abstract : The design of water distribution networks in developing nations is the subject of this article. Humans require water to survive, and that need has a direct impact on health. For a sufficient water supply, the examination of the water distribution network [WDN] is crucial. EPANET 2.2 software was used in the current study to analyze the water distribution network (WDN) of the Gokul complex in Virar. The analysis's results were used to determine how the expanding population will affect the water distribution system in the coming decades, i.e., from 2021 to 2061. Two population forecasting techniques—arithmetical rise and geometrical increase—are used to determine the population increase. By applying the Arithmetical Increase Method, the population was predicted to reach 34560 in 2031 and 47755 in 2061. The population was 35892 in 2031 according to the Geometrical Increase Method, and by 2061 it is projected to reach 60484. The demand at the junction and the flow in the pipe are both impacted by the growing population as a result of population growth over the years.

Keywords – Water distribution network, EPANET 2.2, Population forecasting, Pipe network, Future water demand.

PAPER ID: CIVIL_16 DESIGN OF GANTRY GIRDER AND ANALYSIS USING STAAD PRO

Meena Bhagat¹, Abhishek Gavade², Siddhant Bhosle³, Aniket Gaonkar⁴ ^{1.2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract : Indian industry usually provides high quality industrial hall gantry beams. The business has grown successfully with the help of skilled workers in India, but the margins that can still be increased by designing the gantry as efficiently and economically as possible are small. To move it around, you need countless cranes of different tonnage. Crane projects are created with shipyards in mind. First, his 3D geometry of the crane is designed and then modelled using the finite element method. Cranes are tested under dead weight, payload, hook and trolley movements, and the wind and dynamic loads that occur when the crane is in motion. The tension value obtained must not exceed the safety tension of the material used. If the component is subjected to unacceptable stresses, the sheet metal thickness should be increased or suitable supports should be installed.

Keywords - Gantry girder, Staad Pro, Crane's, Loads, Industry Shed.

PAPER ID: CIVIL_17 PLANNING AND SCHEDULING OF G+4 STRUCTURE USING PRIMAVERA

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Abstract: Proper planning and scheduling is veritably important part of construction systems for reducing and controlling detainments of the design. Substantial quantities of time, plutocrat and coffers are wasted each time in a construction assiduity due to indecorous operation of construction conditioning. With globalization the construction systems have come vast and veritably complex. Planning of similar systems requires huge quantum fpaperwork and time, which can be reduced with the help of design planning software. furnishing good planning, proper association, sufficient inflow of coffers to a design can not automatically achieve the asked result. A warning medium mustbe present, which can warn the association about its possible success and failures throughout the design. The main objects of this study are to plan, schedule, and track an artificial design with the help of primavera P6 software and study the results generated. Also to recommend measures to the associationfor enhancing their design planning chops for analogous systems in future.

Keywords - Planning, Scheduling, Tracking, Project Planning Software, Primavera P6.

PAPER ID: CIVIL_18 ANALYSIS & DESIGN OF A COMMERCIAL BUILDING BY USING E-TAB SOFTWARE

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Abstract : Marketable structures have come a part of the day to day développent. By that the construction of the marketable structure gained significance, their system of Constructions also gained significance. The design not only requires imaginations but also good external reg with experience and judgement. The compass Behind presenting this design is to learn the conception of Construction, and to Design an elegant, safe and durable structure with frugality. The most prominent & accessible system of designing and assaying Multistoried marketable structure in ETABS. ETABS integrates every aspects of the Engineering design process. i.e. launch of design generality through the product of schematic delineations. CAD delineations can be directly converted into ETABS, models may be really rendered, and all results can be shown directly on the structure. ETABS provides unrivaled suite of tools for structures or the Altitudinous marketable High rises. The total modelling of the structure is done by ETABS.

Keywords – ETAB software, IS Code book

PAPER ID: CIVIL_19 WIRELESS CHARGING ROADS

Jain Aayushi ¹, Dhumal Shreyas ², Mhatre Raj ³, Badade Amit⁴ ^{1.2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract: Most For the swift adoption of electrified transportation and the successful commercialization of the technology, the most efficient, reasonably priced, and reliable charging infrastructure is required. This article provides a full, current overview of all wireless charging systems for electric cars (EVs), including their features, standards, and implications on the environment and potential safety measures. After comparing conductive charging and wireless charging, a full description of static wireless charging, dynamic wireless charging (DWC), and quasi-DWC is given. Obstacles such frequency, power level limitations, misalignment, and coil design of power pads are described, along with possible remedies. The heart of these criteria is then discussed once the standards are tabulated to give a clear picture of the existing situation. advancement of wireless standards and the requires it. Modern automation systems, especially those that operate in challenging conditions, can benefit greatly from inductive power transfer (IPT), a power distribution technology. Here, the same technology may be used in both severely filthy conditions and clean room manufacturing. This study discusses the creation of straightforward factory automation (FA) IPT systems for both the current sophisticated applications and the far more challenging IPT roadway application. The foundation of all IPT technology is two highly linked coils that operate at resonance to successfully transmit power. The capacity for power transfer, coupling factor, efficiency, and air-gap have all greatly improved over time. New magnetic principles are introduced to allow misalignment, enabling IPT systems to shift from above monorails to the ground. Keywords- Coils, Electric vehicles, Mutual inductance, Mathematical model, Wireless charging systems.

PAPER ID: CIVIL_20 LEGAL ISSUES AND DISPUTES IN CONSTRUCTION SECTOR

Mr.Prasad Pawar¹, Mr.Varun Raut², Mr.Vishal Rathod³, Mr.Shahfaraz Shaikh⁴ ^{1,2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract : According to the 2019 Global Construction disagreement Report released by the famed construction consultancy Arcadis, the number one cause of legal wrangles in the construction assiduity is when any of the parties involved (proprietor/ contractor/ subcontractor) " fail to understand contractual scores. ". Construction and engineering contracts are those contracts that are formulated for civil engineering conditioning similar as laying down roads, erecting heads or constructing a new office. Because India doesn't have any specific separate law for construction like western nations like that of the UK and US, construction contracts generally fall under the dimension of the Indian Contract Act, 1872. As there are multiple types of construction contracts like lump- sum contracts, time and material (T&M) contracts, cost- plus contracts, unit price contracts, amongst others, there arise several issues like complicated attestation in the construction contracts, long- duration of construction systems, inconsistent terms in the documents which may beget issues and farther lead to

controversies. In India, there are colorful honored styles to resolve controversies arising out of construction contracts, including resolving controversies by way of court action, arbitration, agreement, concession, disagreement resolution boards and judicial agreements. To avoid issues, controversies and losses, the parties entering into a contract must always formulate and subscribe a construction contract. An existent must take expert legal advice on similar matters as soon as possible.

Keywords – ADR, Arbitration, Contracts, Construction, Disputes, Legal issues.

PAPER ID: CIVIL_21 ECO-FRIENDLY BUILDING MATERIALS FOR LOW COST HOUSING

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Abstract: Since economic factors have influenced the construction industry dramatically in recent years and in many parts of the world steel is scarce and expensive, many researchers are searching for low-cost materials as a substitute or alternative for the present situation. This project report analyses how the Adobe bricks, Slag cement and Timbercrete blocks pass the various parameter when compared to the standard sized Burnt Clay Brick, Ordinary Portland Cement (OPC) and Concrete Blocks. This was conducted by executing various test like compression test & thermal insulation test. The various parameters like weight, strength, manufacturing process, cost, etc were collated by performing respective activities. **Keywords:** Adobe Bricks, Building Material, Low-Cost Housing, Sustainability, Slag Cement, Timbercrete.

PAPER ID: CIVIL_22 MAPPING OF GROUND WATER LEVEL USING ARC-GIS

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Abstract : This paper intends to show Groundwater is the world's most significant natural source for icing reliable and long- tems water inventories. colorful variables, like as population explosion, urbanization, and modernization are putting groundwater inventories in Palghar. The use of remote seeing(RS) and Geographic information systems(Civilians) so estimate groundwater coffers has come wide. In the current exploration, groundwater implicit zones(GWPZ) of the Palghar quarter were estimated using the Integrated RS-Civilians- grounded Analytical Hierarchy Process(AHP) and fashion for Order of Preference by Similarity to deal result approaches. colorful thematic layers were attained from applicable sources.

Keywords: AHP, ARC-GIS, one-Remote sensing, Thematic Map.

PAPER ID: CIVIL_23 OPERATION REVIEW OF SIX SIGMA IN CONSTRUCTION

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Abstract: Six Sigma methodology is nowadays one of the most used approaches in the Quality Management field since its benefits coming from the improvement of the process outputs quality by identifying and removing the causes of defects and variability in manufacturing and business processes. Few studies are done on reviewing the literature of Six Sigma in all the areas including manufacturing, construction, education, financial service, BPOs, healthcare etc. All the literatures are in the way that it would help research academicians and practitioners to take a closer look at the growth, development, and applications of this technique. Globalization, advanced technology, increased sophisticated customer demands change the way of conducting business. Old business models no longer work in new economy. Defects rate of product plays an important role for the improvement of yield and financial conditions of any company. Organizations are increasingly adopting Six Sigma in a bid to improve the quality of their processes and products, and thus achieve competitive advantage. Six Sigma is a smarter way to manage business or department.

Keywords: Construction, Globalization, improvement, Quality management, Six sigma.

PAPER ID: CIVIL_24 GENERATION OF OIL AND METHANE BY USING WASTE PLASTICS

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Abstract: Due to adding population & rise in the standard of living of people, plastics have woven their way into our diurnal lives and now pose a tremendous trouble to the terrain. Over 368 million tonnes of plastics are produced annually worldwide, and the habituated products have come a common point at over flowing lockers and tips. Though work has been done to make futuristic biodegradable plastics, there haven't been numerous conclusive way towards drawing up the being problem. Then, the process of converting waste plastic into value added energies is explained as a feasible result for recycling of plastics. Pyrolysis runs without oxygen and in high temperature of about 300 °C which is why a reactor was fabricated to give the needed temperature for the response (As we're going to use slow pyrolysis). Converting waste plastics into energy hold great pledge for both the environmental and profitable scripts. therefore, the process of converting plastics to energy has now turned the problems into an occasion to make wealth from waste. The conversion of oil painting from plastic has binary benefits. First of all the oil painting produced can be used as a energy for domestic purposes and also in vehicles and diligence when farther meliorated. Secondly the colorfull types of pollution caused due to waste plastics can be minimized. Plastic in the first place is manufactured from natural gas specifically from methane which is a element of natural gas. thus the waste plastic can be converted back into it. In this design work an attempt has been made to probe the conversion of ménage waste plastic into liquid energy, electricity

and methane gas by using pyrolysis process, a pyrolysis unit is designed, fabricated and estimated for colorful kinds of plastic wastes, parcels of liquid energies attained are determined.

Keywords – Electricity, Methane, Oil, Plastic, Pyrolysis.

PAPER ID: CIVIL_25 COMBINE USE OF STEEL SLAG AND COPPER SLAG IN CONCRETE

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Abstract: As we know steel making and copper making industries let out by-products like slags which is difficult to dispose. Research says that these by-products mainly slags which contain heavy metals associated with ore processed. Research says that these By-products can be used in concrete The approach to this project is to come up with proper mix design of these materials and then cast blocks of various proportion and then do various tests on them to find out best probable composition.

Keywords: Steel slag, Copper slag, Combination, Casting, Proportions, Economical, Workability.

PAPER ID: CIVIL_26 SOIL STABILIZATION BY USING RECRON -3S, FLYASH & LIME

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Abstract: In order to operate vehicles more efficiently and effectively, which is necessitated by population increase, highways must be properly designed in terms of geometry and maintained in terms of pavement quality. Earth material is needed in extremely large quantities for a number of infrastructure projects, including those for water reservoirs, railroads, and highways. Highways must be kept in good condition if they are to provide travellers with comfort, convenience, and safety. We'll use RECRON-3S, FLYASH, and LIME in this project to stabilise the soil. Recron-3S is used here as (1%,2%), lime is used as (3%), and fly ash is used as (12%). In California, the bearing ratio value will be higher as compared to standard materials due to varying soil-additive proportions. Additionally, that pavement thickness can be reduced to some amount.

Keywords: Soil, recron-3S, fly ash, lime, CBR (California Bearing Ratio) test, Optimum Moisture Content, Maximum dry density.

PAPER ID: CIVIL_28 NOISE MONITORING USING GIS MAP

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Abstract: Noise effluence is a issue one might ignore if we are talking about a scenario From 2-3 decade before it was not that much of a concern but as in today's World its important to see through it cause noise pollution is in boom from past decades and causing issues in every sector and it is important too in the civil side so keeping all this in mind and providing a solution for it.

As nowadays site selection is tedious and very lengthy process and do required lot of research and man work and to simplify one of it's process that is considering the noise ratio and selecting the best place with less noise pollution we are providing a solution by plotting a noise map on a Q-GIS map and showing a detailed information about noise dispersion on the map which will help to select you the project location. As nowadays the noise pollution is a issue of concern as if we select a area of high noise ratio it will have a adverse effects in the longevity of the structure and the other ill effects on the nearby structure so to overcome all this it can come in very handy to see through this factors with a standard and verified source of this information which is key to a building structure which will have a long life and will sustain many issue that are being caused due to the vibration and in today's life in the city it is very important to check all this as it was not done in past which was causing a lit of issues in the aftermath of the structure.

Keywords – Monitoring, Noise Mapping, Noise Pollution, Qgis, Virar City, Trafic Noise

PAPER ID: CIVIL_29 DESIGN OF TWO-WHEELER PARKING SYSTEM

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Abstract : The population of the world is continuously on the increase and towns and cities have grownup around their public transport system. In order to reduce the stress of parking, owners, adequate parking facilities must be provided to meet up for the demand of parking This research present the design of a multi-level car park for the mitigation of traffic challenges in public areas using various case studies. Our building design consists of G+3 floor. All floors are designed to accommodate 45 cars. The plan for this building was prepared using AutoCAD software. The analysis of the frame was carried out for vertical and horizontal loads using STAAD Pro software. The design has been done according to the Limit state method and confirming to Indian standard code IS 456-2000 for various structural and non-structural components. Further reinforcement detailing for various structural elements being made as per SP-16. The structural elements like shab, beam, columns, footing and staircase has been designed and detailing was incorporated by designing these structural elements it helps us to gain more amount knowledge and gives an experience for our future.

Keywords - two- wheeler parking system near Virar railway station

PAPER ID: CIVIL_30 BAMBOO AS A CONSTRUCTION MATERIAL

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Abstract: The Following design report is a theoretical démonstration of the comprehensive use of bamboo as a buttressing material in concrete construction and its expansive use in the negotiation with sword as underpinning in concrete cargo bearing members. The report has been deduced with the help of conclusions and results of the former reports of colourful conducted trials for determining the mechanical parcels of bamboo and its use as a material in construction. The construction principles involved in the designing of bamboo corroborated members and structures has been bandied in this document, the use of bamboo in the place of sword as a whole as well as with sword is shown to insure the reduction in weight, profitable advantages with its strength compromised to a slight and safe position. colorful inquiries and study results will be used for the deduction of a system most suitable for the relief of bamboo as buttressing material in the right quantum and the right proportion and the stylish possible placement in place of sword and or with sword. A system that would not compromise with the factor of safety of the structure has to be shown in the report.

Keywords – Bamboo Reinforcement, Steel Replacement, Low Cost House.

PAPER ID: CIVIL_31 ANALYSIS OF CASTALLATED BEAM

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Abstract: Engineers and researchers prefer to use castellated beams as steel beams because they use less material but have the same performance as I-beams of the same size. Castellated beams are made from standarduniversal I-beams or H-beams by cutting the web along the half hexagonal line along the centre of the beam. The two halves are shifted by 1/2 pitch and rejoined by welding. The castellated beam manufacturing process increases the depth of the beam, resulting in increased bending strength and stiffness around the long axis withoutadding additional material. The purpose of this project is to investigate the effect of web openings on castellated beam lying down using analytical techniques. The goal of developing analytical solutions employing the classical principle of minimum potential energy is design and implementation. Meanwhile, numerical solutions obtained using ANSYS software are used to validate analytical solutions. Furthermore, this study is also useful for evaluating the shearinduced lying down of castellated beams under uniformly distributed lateral loads. Analytical and numerical solutions were applied to a wide range of geometric dimensions of I beams under evenly distributed shear loads

Keywords – castellated beam.

PAPER ID: CIVIL_32 DAM SITE MAPPING USING ARCGIS

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Abstract: Building a dam is one potential method for reducing flood episodes in middle Tapi, Maharashtra, India. The current study aimed to apply AHP technique with GIS for decision making in order to determine the best location for the dam. For a dam site suitability map, SRTM DEM was used to create a total of 10 spatial layers (elevation, slope, drainage density, rainfall, lulc, distance to river, road network density, geology, geomorphology, and soil). The weights of the thematic map layers were determined using the analytical hierarchy process (AHP) technique, which is one of the Multi-Criteria Decision Making (MCDM) techniques. Five categories of appropriateness, ranging from very high to very low suitability zones, are depicted on the overlaid map. The study gives decision-makers a practical and economical tool for locating places with high constraints (low acceptable site) and focusing on locations with fewer restrictions for a more suitable location for the construction of dams.

Keywords : Analytical Hierarchy Process, Multi-Criteria Decision Making, Suitability of Dam Sites, Remote Sensing, Geographic Information Systems

PAPER ID: CIVIL_33 FLOOD FORECASTING USING ANN AND IoT BASED WARNING

Harsh Vengurlekar¹, Girish Tribhuvan², Santosh Rathod³, Amogh Palav⁴ ^{1,2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract : This paper tends to show the emerging concept of artificial intelligence in flood forecasting. The purpose of study takes into consideration by study the software (MATLAB) and its mechanics in order to determine the flood. The research methodology is based on a single case study. The result shows that use of IoT is possible in determining flood and can be used effectively in flood management.

Keywords – Artificial Intelligence, Flood Management, IoT, Software (MATLAB).

PAPER ID: CIVIL_34 ECO-FRIENDLY RESORT

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Abstract: This paper intends to show the emerging concepts in sustainable eco-resorts. The purpose of the study takes in consideration in order to define basic principles in eco-architecture and eco-urbanism to develop rural areas. The research methodology is based on a single-case study. The results achieved, points to the emerging of a new paradigm in architecture, urban planning and tourism, and particularly to new formal solutions and

specifications in technologies and materials to achieve the concept. The results show that lowtechnology is possible to increase good architecture and design. **Keywords :** sustainable, eco-architecture, eco-resorts, eco-urbanism, urban planning, tourism, low-technology.

PAPER ID: CIVIL_36 DESIGN AND CONSTRUCTION OF UNDERGROUND WATER TANK USING FERROCEMENT

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Abstract: India has different climatic conditions according to region or area i.e; hilly region dessert region etc. Concrete and steel are the basic construction materials, which are being used with different concepts for construction such as RCC, pre stressed and ferrocement. Ferrocement is an innovative technology and has several advantages. Different type of meshes is used in ferrocement such as, chicken mesh, welded mesh. The desired shape maybe prepared from multi-layered construction of chicken wire, and if needed reinforced with steel wire or steel bars. In this project we have studied about the underground water tank use for rain water harvesting. In this project also includes site visit on construction of on ground ferrocement water tank at Saphale village which is located at Palghar District. We are constructed underground water tank using ferrocement water tank at Moor village in Mangaon taluka, District Raigad.

Keywords – *Ferrocement, chicken mesh, weld mesh, underground water tank, rain water harvesting.*

PAPER ID: CIVIL_37 OPTIMIZATION & DESIGN OF SEWAGE CARRYINGNETWORK SYSTEM

Ankita Mohite¹, Vrushali Mohite², Harsh Vichare³, Sumit Yedre⁴ ^{1,2,3,4}(*Civil Engineering, Viva Institute of Technology, / University of Mumbai, India*)

Abstract: The present study will include the use of Sewer CAD V8isoftware for the design and analysis of the sewage system for the Kophrad Village situated in Vasai Taluka, Palghar District, Maharashtra. Sewer CAD V8i software is a computer software specifically developed for the purpose of design and analysis of the sewer networks. The network consists of pipes of varying diameters, manholes, and outfall. With specific tools and features included, Sewer CAD V8i offers a full range of possibilities for the designer to draw, label, dimension and plotting the drawings of the sewage networks. The area under consideration is selected based on the existing facility and the prioritized area in need of sanitary facility. In the design of a sewerage system the sewer network is the basic unit occurring repeatedly in the design process. Any savings during the design of thisunit will affect the overall cost of the sewerage system. In this work the sewage network will be designed considering the regulations put forth by governing bodies and using commercially available materials.

Keywords : Sewer Network, Sewer CAD, Sewer CAD V8i, Sewage System

PAPER ID: CIVIL_40 REVIEW ON DMAIC METHODOLOGY IN SIX SIGMA

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Abstract : Six Sigma, a statistical measure of variation is used for improving business process. Implementation of Total Quality Management (TQM) is possible by using Six Sigma which targets 99.99927% defect free manufacturing. Six Sigma DMAIC methodology is meant of Define, measure, Analysis, Improve and Control. DMAIC is a problem solving process which may resolve the issues of defects or failures, deviation from target, time over run, cost overrun etc. DMAIC reduces variation by identifying the key requirements tasks and standard tools for utilize and tackle the problem. This paper contains a study on Six Sigma DMAIC methodology for improvement of existing problem in construction. **Keywords** – Six Sigma, DMAIC, Total Quality Management, Analyze

PAPER ID: COMP_01 SURVEY PAPER ON CRIMINAL IDENTIFICATION SYSTEM

Saish Sankhe¹, Yogesh Yadav², Qhubaib Shaikh³, Reshma Chaudhari⁴ ^{1,2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract : In many countries, there is an abnormal increase in the crime rate and also the number of criminals is increasing, which leads to a great concern about security issues. Crime prevention and criminal identification are major concerns for the department of Police. In general, Police stations utilize paper-based information storing systems and don't employ computer-based applications to a great extent. Due to this utilization of paper-based systems police officers have to spend much time as well as manpower to analyze existing crime information and to identify suspects for crime incidents. The process of identifying and spotting a criminal is slow and labor-intensive. Criminals these days are getting smarter by not leaving any form of biological evidence or fingerprint impressions on the crime scene. The human face is a dynamic object having a high degree of variability in its appearance which makes face recognition a difficult problem in computer vision. In this field, accuracy and speed of identification is the main issue. Many challenges exist for face recognition. The robustness of the system can be obstructed by humans who alter their facial features by wearing colored contact lenses, growing a mustache, putting on intense makeup, etc. The proposed system aims to build an automated Criminal Face Detection system by levering the human ability to recall minute facial details. Identification of criminals at the scene of a crime can be achieved in many ways like fingerprinting, DNA matching, or evewitness accounts. Out of these methods, Face Identification accounts are preferred because it stands scrutiny in court and it is a cost-effective method. The footage of the CCTV can be used to identify suspects on the scene. This Real-time criminal identification system based on face recognition works with a fully automated facial recognition system. The proposed system can successfully recognize more than one face which is helpful for quickly searching suspected persons as the computation time is very low. It creates a unique template for each face and compares them with other images available in the dataset. If the match is found for the input face, then the details associated with the related image will be displayed. This system will decrease crimes and ensure security in our society

Keywords– Criminal Identification, Criminal Tracking, Face recognition, Feature extraction, Face API, Open CV

PAPER ID: COMP_02 A REVIEW ON HUMAN ACTIVITY RECOGNITION SYSTEM

Priya Pathak¹, Vinod Choudhari², Mansi Patil³, Bhavika Thakur⁴ ^{1,2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract : Human activity recognition (HAR) is the process of interpreting human motion using computer and machine vision technology. Gestures, behaviours, and activities which are recorded by sensors are used to detect human activity. HAR is an active research area

combining Convolutional Neural Networks (CNN) and feature extraction classification methods for surveillance and other applications. However, accurately identifying HAR from a sequence of frames is challenging due to cluttered backgrounds, different viewpoints, low resolution, and partial occlusion. Current CNN-based techniques require large computational classifiers along with convolutional networks having local receptive fields which limits the performance to capture long-range temporal information. Therefore, this work introduces a low computational power approach for accurate HAR, which overcomes the problems mentioned above and accurately encodes relative spatial information. In this proposed method, the You Only Look Once (YOLO) network is utilized as a backbone CNN model. For training the model, we constructed a large dataset of videos by labelling each frame with a set of activities and positions.

Keywords - YOLO, HAR, CNN, Deep Learning, Classification

PAPER ID: COMP_03 WAVD: WEB APPLICATION VULNERABILITY DETECTOR

Rohan Sharma¹, Shubham Yadav², Dhiraj Mishra³, Akshaya Prabhu⁴ ^{1.2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract : An automated system has been implemented to scan web applications for vulnerabilities and provide a comprehensive report to users. The system scans for the most frequent vulnerabilities in an automated manner and presents a comprehensive report to the user, including information about the vulnerabilities found, their severity and recommended solutions. The system is designed to be accessible to users without prior knowledge of web vulnerabilities and can be used by small-scale industries and web developers to assess the security of their web applications and take necessary actions to protect them from attacks. The system aims to increase awareness of web vulnerabilities and make it easier for individuals and organizations to protect their web applications from attacks.

It also addresses the issue of limited access to paid online scanners and complex command line interface or programming language used in other scanners, making it more easily accessible to average users.

Keywords – Web vulnerabilities, Automated scanning, Web attacks, User-friendly system, Application security

PAPER ID: COMP_04 REAL-TIME VIRTUAL MOUSE SYSTEM USING RGB IMAGES AND SIGN LANGUAGE

Yuvraj Chindarkar¹, Ankita Dakare², Shweta Dudye³, Saniket Kudoo⁴ ^{1,2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract : Human Computer Interaction keeps moving toward interfaces which are more natural and intuitive to use, in comparison to traditional keyboard and mouse. Hand gestures are an important modality for human computer interaction. Gesture recognition is an active research field in human computer interaction technology. Many new technologies have been developed recently. In this field gesture recognition i.e. one of the systems that can detect the

gesture of body parts in real time video. Suppose the gesture of hand is classified within a certain area of interest so designing of the hand gesture is one of the complicated jobs that involves two main problems: firstly sign that is suitable. So in this project limitation can be employing webcam for capturing hand gesture and hand tip detection using computer vision. The algorithm used in the system is made of the artificial intelligence algorithm based on the hand gestures the computer can control virtually restart and perform print, lock, turn on, shut down, unlock, save, close, screenshot, open, turn off. The algorithm is based on artificial intelligence for detecting the hands. We are using CNN algorithm for implementing our project. CNN is used to classify and detect the number of gestures and also in evaluating single-time activations.

Keywords - Artificial Intelligence, Gesture assigning, Human computer interaction, Python libraries, Virtual operations.

PAPER ID: COMP_05 A SURVEY ON VIRTUAL WHITEBOARD-A GESTURE CONTROLLED PEN-FREE TOOL

Kamlakant Bag¹, Siddharth Urankar², Ankita Yadav³, Reshma Chaudhari⁴

Abstract : The computer vision field has been rapidly developing, finding real-world applications, and even surpassing humans in solving some of the visual tasks. All this thanks to the recent advances in artificial intelligence and learning. Object tracking is considered as one the important tasks within the field of computer vision.

A computing process that attempts to recognize and interpret human gestures using mathematical algorithms is known as gesture recognition. With increasing technology each sector needs to be modernized. With the improvement of clever gadgets, the system can now be controlled virtually with the aid of using human gestures. While using paint, sometimes we feel it is difficult to draw and feel like drawing our imagination just by waving our hand. The proposed system is this gap in developing motion-to-text converters which can serve as software for smart wearable devices for writing in the air. The proposed system will use computer vision to track finger movement. This proposed system works on hand tracking system development which aims to track the hand which acts as pen and functions as pen to create or draw different shapes and also as an eraser using Open Computer Vision Library (OpenCV) and Media pipe. The existing project which allows us to draw just by waving hand uses technology or methodology which takes a lot of process and time. Avoiding or decreasing these limitations we came up with this proposed system that uses new technologies and easy methodologies. System Camera is used to track the hand and create drawings. **Keywords -** Neural Network, Machine learning, Open CV, Media pipe.

PAPER ID: COMP_06 AUGMENTED REALITY BASED INDOOR NAVIGATION (ARBIN)

Bhushan Chavan¹, Chetan Diwekar², Kamal Jaiswar³, Saniket Kudoo⁴ ^{1,2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract : With the introduction of the Android system, smartphones are growing faster and more easily. With internet access to smartphones, user location information can be quoted anywhere, at any time. With this growth, many new technologies are being introduced that will be very beneficial to users because they can be used in conjunction with existing technologies/applications in various fields. One of the major technologies introduced is Augmented Reality, which can be used to interact with the real world through the use of virtual objects and videos. In the travel field, Augmented Reality-based Technology allows for the provision of a variety of information such as photos and building placement. The proposed system is inspired by augmented reality and 2-D graphics. The system's primary elements are visual markers. The system solves this problem by utilising readily available and accessible resources. A class within a college, a specific room on a floor, etc., can be easily located using this application, and the user is provided with reasonably accurate visual assistance through their smartphone to reach his or her preferred location. The Visual Trace Way (Marker and Marker less method) is where the majority of the unconventional virtual programming is used. The path from the user's current location to the destination is all that most navigation requests can show. The design and implementation of an augmented reality system are discussed in this system. It will display user-centric information on a smartphone in real time using a welldesigned smartphone camera and GPS. The proposed app will use GPS location technology in conjunction with tracking technology to provide the user with basic information about the building they want or are close to.

Keywords – *Indoor Navigation, Augmented Reality, Unity, A* algorithm, Global Positioning System (GPS)*

PAPER ID: COMP_07 KOKBiz: A BUSINESS NETWORKING APP

Haider Patanwala¹, Aditi Patil², Mihir Joshi³, Akshata Raut⁴ ^{1,2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract : Networking is the sharing of information or services between people, businesses, or groups. It is also a way for individuals to grow their relationships for their job or business. Networking can be an effective way for job-seekers to gain a competitive edge over others in the job market. Business networking involves making connections not only with likely customers or clients but also with other individuals who might refer business to you or mention your name in some positive way to people they know. You will find that the best networkers are often connectors who help others by referring customers, providing testimonials, or helping to promote events and other businesses in some way. In the context of communication, business-to-business refers to methods by which employees from different companies can

connect with one another, such as through social media or any medium of connection. The proposed system acts as a medium for businesses to make connections with other relevant businesses. It is an efficient business networking portal that caters to the business trade community by connecting and complementing businesses around the world with the sole purpose of trade, growth, and profit and sale. The model behind the proposed system is straightforward enough, allowing users to create a profile that then enables others to find and connect with them for business purposes.

Keywords – Business Networking, Collaboration, Referrals, SMEs, Small Businesses

PAPER ID: COMP_08 MARKET SEGMENTATION

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Abstract : Nowadays the retail industry is facing major challenges in order to know their customers and optimize their businesses. So, a business needs a proper analyser, in order to know their customer behaviour and response toward their products. This proposed system describes a proper way to target special customers from a business perspective. The most crucial step in knowing your customer is to properly segment them according to their previous purchase history. So, for segmenting the customer into proper groups we used the K-means algorithm. In this proposed system, we will perform one of the most essential applications of machine learning, Customer Segmentation by using K-Means Clustering Algorithm. Then we will explore the data upon which we will be building our segmentation model. Furthermore, through the data collected, we can gain a deeper understanding of customer preferences as well as the requirements for discovering valuable segments that would reap them maximum profit. This way, we can achieve the marketing techniques more efficiently and minimize the possibility of risk to the investment. After segmenting the customers into successful clusters of the same properties, market strategy can be applied.

Keywords - Customer, K-means Algorithm, Maximum Profit, Purchase, Segmentation

PAPER ID: COMP_09

A REVIEW ON CHATBOT WITH DIFFERENT METHODS Abhishek Ojha¹, Kishore Jha², Nainesh Rathod³, Reshma Chaudhary⁴

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Abstract: The growth of technologies like artificial intelligence (AI), Big Data & the Internet of Things, etc. has achieved many advancements in the modern world since technologies increase day by day. A chatbot is a computer program designed to be able to interact with humans through text or voice messages. A chatbot is usually also equipped with AI and Natural Language Processing (NLP) which makes it an intelligent computer program that can answer questions given by humans. Nowadays there is a variety of businesses that make use of chatbots for better user experience. Chatbot technology is growing rapidly in every sector including cultural heritage, entertainment, education, marketing and healthcare, support system, etc. Chatbots can be used everywhere and anytime because of their accuracy, do not require human resources, and all the time available to help the user. There are many
methods to solve the different problems using these chatbots like in banks to reduce customer inquiry, etc.

Keywords – AI, Answer, Chatbot, NLP, Question, Text, Voice.

PAPER ID: COMP_10 ML-BASED MINERAL EXPLORATION THROUGH METALLOGENIC MAPS

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Abstract : Mineral locations become more difficult to locate in geo-locations. Despite the existence of traditional means, the process of seeking is still not faster. Finding economically viable mineral reserves has become increasingly difficult. The iterative process of collecting various datasets, followed by geological interpretation, might take a long period during exploration. Massive volumes of data are gathered and analyzed, frequently with no notable mineral discoveries. As a result, processes need to increase finding rates and shorten the traditional exploration life cycle, which identifies mineral locations by overlaying numerous layers of geoscientific data in GIS software. This project is proposed for better mineral exploration by creating ML-based mining exploration models by combining geographical data. The Geological Survey of India's BHUKOSH portal and other sources contain a variety of geological datasets. The proposed project tries to analyze the problems and leverage the country's accessible geological datasets by delivering a Machine Learning solution for mineral exploration through the construction of a metallogenic model for better mineral exploration based on the geographic factors of a particular area. **Keywords -** Machine Learning, Metallogenic model, Mineral exploration.

PAPER ID: COMP_11 A SURVEY NGO E-WALLET

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Abstract: Crowdfunding is a method of raising funds from a large number of individuals or businesses. Investors can contribute to any project they are interested in and earn if the initiative is successful. Many crowdfunding sites now exist, and they accept large sums of money from investors and contributors and then leave them with bogus promises. Blockchainbased crowdfunding alters the usual approach to company finance. Generally, when people need to acquire funds to start a firm, they must first develop a strategy, statistical surveys, and models, and then offer their ideas to attract people or organizations. Banks, individual investors, and venture capital firms were among the sources of funding. The main problem with the current websites is that they don't provide the Contributor Assured Policy and they don't have control over the money they donated. So, by using blockchain we can provide a safe, secure and transparent way for crowdfunding. In this work, we have provided interactive forms for campaign creation, contribution and request approval through which both campaign creators and contributors can easily create and pool the campaigns.

Keywords – *Blockchain, Crowdfunding, Ethereum, Cryptocurrency, Fraud schemes, Smart Contracts*

PAPER ID: COMP_12 A REVIEW ON COPPERGREEN BLOCKCHAIN

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Abstract : Resource-rich smart devices and high-density supportive networks make data transactions prevalent over edge environments. To ensure such transactions are un modifiable and undeniable, blockchain technology is introduced into edge environments. Blockchain serves as an immutable ledger which allows transactions to take place in a decentralized manner. Consensus is required for the blockchain to remain decentralized and to ensure ledgers in different nodes are consistent. Though we see a range of approaches to reach consensus, ones extensively used today are PoW wherein participants perform computationally hard problems to find nonce for validation and PoS wherein participants with higher coinage perform validation. Computational power is extremely expensive, and mining pools or computational bundles hamper decentralization of blockchain on the other hand currency at stake cannot be traded and simply selecting participants on coinage is biased and opens for 51% attack. So, in the proposed system, a hybrid form of consensus mechanism wherein we a randomized Proof-of-work to proof-of-stake based protocol which takes the advantageous part of the both the protocol in a hybrid manner and minimizes the possibility of 51% attack on smaller cryptocurrency network by a randomized grouping process for miner selections so that the impact is minimized and advantage prevails.

Keywords – Blockchain , PoW(proof of work) , PoS(proof of stake) , Concensus , Decentralization.

PAPER ID: COMP_13 A REVIEW ON GASTRIC CANCER DETECTION USING MASK R-CNN MODEL

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Abstract : Gastric cancer is a malignant tumour that mainly affects the gastric mucosa and is the second most common cause of death among all cancers after lung cancer. It is a highly regional disease, with more than 50% of cases occurring in East Asia. Diagnostic and treatment techniques for gastric cancer continue to improve and early detection has been shown to reduce mortality rates among patients with gastric cancer. Gastric examination is performed by endoscopy and gastro fluoroscopy using barium. Because endoscopy has superior sensitivity in detecting early stage gastric cancer and allows for tissue collection and treatment under observation, it has been widely adopted for gastric cancer screening and detailed diagnosis. In endoscopic diagnosis, a physician checks the endoscopic images while operating the endoscope and records still images at key points when abnormalities are detected. In addition, magnification and staining are often performed to classify diseases and diagnose the extent and depth of lesions. However, the procedure is highly complex, requiring multiple tasks to be performed during the examination. Hence, there is some concern that lesions may be missed. In recent years, deep learning technologies have made remarkable progress and deep learning technology has shown excellent performance in the field of image

recognition. Deep learning techniques have been proposed for various applications involving different types of medical images. In this study, we propose a deep-learning based method for the detection and identification of the depth and extent of cancer invasion to support endoscopy using Mask R-CNN model.

Keywords – Gastroc Cancer, Deep Learning, Mask RCNN

PAPER ID: COMP_14 SURVEY ON CROP RECOMMENDATION SYSTEM FOR KRISHI JAL APP

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Abstract: Agriculture is a paramount sector of the Indian economy as it contributes about 17% to the total GDP and provides employment to over 60% of the population. Agricultural commodities engendered must undergo a series of operations such as harvesting, threshing, winnowing, bagging, conveyance, storage, processing, and exchange before they reach the market, and as conspicuous from several studies across the country, there are considerable losses in crop output at all these stages. The main problems that are faced by Indian agriculture are uncertainty in the water supply, lack of remunerative income, and fragmentation of land holdings. After going through the previous research on the prediction of crops using different, machine learning models, its shortcoming was exposed. Previous research just considered the soil parameters and the weather conditions to predict the crops that must be planted on the farm. The proposed system not only considers the soil parameters but also water available for farming and then provides the output which takes all input and based on those parameters will provide the crops that have to be planted on the farm. The Model will work in two phases. In the first phase, extraction of information from the input will be done. In the second phase, the extracted information will be given as input to the trained machine learning model and then the recommendation of the crops will be displayed. **Keywords** – Crops, Machine Learning Model, Phase, Parameters, Recommendation, Sundry

PAPER ID: COMP_15 A REVIEW ON DETECTION OF PLANT DISEASES USING DEEP LEARNING

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Abstract : The extensive research conducted across several fields revealed that in spite of so many already existing solutions for agricultural problems the requirement for an advanced and efficient approach rises. Deep learning, a branch of machine learning, requires sophisticated techniques to process images, extract features, and analyse them to produce promising results. Deep learning models are trained using large amounts of labelled data and neural network architectures, allowing the model to learn features directly from the data without the need for manual feature extraction. Agriculture is one of the sectors that could benefit from deep learning technology approaches, as it can facilitate the upgrading of conventional farming techniques with the most cost-effective approach. Advances in

agricultural technology have increased annual crop yields worldwide, but preventing crop loss due to disease is a concern. Farmers face the problem of plant diseases and consequent loss of agricultural productivity. Early detection of plant diseases by rectifying the leaves with the help of deep learning can reduce crop losses because necessary measures can be taken. **Keywords** – Agriculture, Deep Learning, Detection, Neural Network, Plant Diseases.

PAPER ID: COMP_16 A REVIEW OF GRAPHICAL PASSWORD BASED AUTHENTICATION SYSTEMS

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Abstract: Authentication techniques have seen tremendous advancement, innovation, and thus success in the real world. It has moved its way up from rudimentary ciphers to complex authentication techniques which would require thousands of years even for the most powerful computers to crack. Today Alpha-Numeric Passwords, in User ID and Password combination are the most used type of authentication format in the world. However, researchers have shown that while alpha-numeric passwords are good, and often very hard to crack, they are vulnerable to many attacks such as phishing, social engineering, malware, dictionary attack, offline cracking, spidering, Brute force attack, shoulder surfing, guessing, etc. All these attacks are possible due to either human error, or the blazing fast speed that a computer can interact with the authentication system while deploying its password cracking technique. Thus, in order to counter these two drawbacks of alpha-numeric passwords, researchers have been coming up with new methods of authentication which do not use any alphanumeric inputs, or any other qualities which cause the drawback in said system. In order to accomplish this goal some researchers have started on various variations of graphical based passwords, as these systems are much more sophisticated as compared to alphanumeric passwords. In this review paper, many such graphical systems are analyzed in order to learn their advantages over their alphanumeric counterparts. And which things can be carried over, to develop a new system that would be more efficient, easy to use, robust and user friendly. Keywords - Authentication, Security attacks, Alpha-numeric passwords, Graphical Passwords, Usability, Cryptographic Obfuscation, Deep Learning, Machine Learning

PAPER ID: COMP_17 TRACE THE TRAIL – INNOVATIVE APPROACH TO TRACK MISSING HUMANS USING DEEP LEARNING

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Abstract: Feature extraction procedure can be carried out and optimized by deep learning models with little to no manual work. Any data (video, pictures) can be fed into a deep learning model, which uses the architecture provided to process the data and execute data extraction to train itself and learn about the numerous data elements affecting the prediction or output. By feeding the data into the model and obtaining the output, the model can be used to forecast unknown data after successfully undergoing training. There is a phase called testing phase

before implementation that aids in increasing the accuracy of the model. Missing cases have been increasing day by day and the process of investigating and finding the lost person consumes a lot of time. Single Stage Detectors speed up the process of matching the lost person's image to their last presence (face) extracted from the CCTV footages. After skimming through the previous research, its many shortcomings were exposed. In India, still manual search and investigation is used in a lot of places. Face recognition resolves the problem of tedious search process. In this paper, a survey is done to show popular algorithms used for face recognition in real-time which obtain speedy results.

Keywords - Face Recognition, Machine Learning, Deep Learning, YOLO (You Only Look Once), Single Stage Detectors

PAPER ID: COMP_18 DOPIDET: DRIVER DROWSINESS DETECTION

Harsh Jadeja¹, Ahmedabbas Rakan², Riyad Chowdhury³, Akshaya Prabhu⁴

Abstract: The main idea of this research is to develop a nonintrusive system which can detect fatigue of any human and can issue a timely warning. Drivers who do not take regular breaks when driving long distances run a high risk of becoming drowsy, a state which they often fail to recognize early enough. According to the expert's studies show that around one quarter of all serious motorway accidents are attributable to sleepy drivers in need of a rest, meaning that drowsiness causes more road accidents than drink-driving. This system will monitor the driver's eyes using a camera and by developing an algorithm we can detect symptoms of driver fatigue early enough to avoid the person from sleeping. So, this Research will be helpful in detecting driver fatigue in advance and will give warning output in the form of alarm and popups. Moreover, the warning will be deactivated manually rather than automatically. For this purpose, a de-activation dialog will be generated which will contain some simple mathematical operation which when answered correctly will dismiss the warning. Moreover, if the driver feels drowsy there is a possibility of incorrect response to the dialog. This can judge this by plotting a graph in the time domain. If all the three input variables show a possibility of fatigue at one moment, then a Warning signal is given in the form of text and sound. This will directly give an indication of drowsiness/fatigue which can be further used as a record of driver performance.

PAPER ID: COMP_19 A REVIEW ON ASPECT BASED SENTIMENT ANALYSIS TECHNIQUES FOR REVIEW ANALYSIS

Faraaz Biyabani¹, Meet Makwana², Avdhoot Parab³, Ashwini Save⁴ ^{1,2,3,4}(*Computer, VIVA Institute of Technology, University of Mumbai*)

Abstract : The computational examination of people's opinions, sentiments, attitudes, and emotions as they are represented in written language is known as sentiment analysis or opinion mining. In recent years, it has become one of the most active study fields in text mining and natural language processing. Two primary factors contribute to its appeal reasons. Firstly, the fact that opinions are fundamental to practically all human endeavors and are

significant determinants of our behavior means that it has a wide range of applications. We seek out other people's perspectives whenever we need to make a decision. Second, it covers a variety of difficult research issues that had never been addressed before to the year 2000. Prior until now, there wasn't much opinionated text available in digital forms, which contributed to the lack of research. Human sentiment analysis is a relatively new field of study that is expanding rapidly. Even if several studies in this field have been published, there is still much that may be done to improve accuracy and human behavior. Despite the fact that the task is challenging with only verbal statements, linguistic data are taken into consideration in this work to analyze human attitudes using deep learning models. Deep learning models for sentiment analysis have proved to be superior in analyzing and representing complex language structures. Also, with the introduction of the Transformer model, there have been major advancements in various NLP tasks. It also led to the development of natural language models which can be fine-tuned on a more specific natural language task such as sentiment analysis. This review explores the use of BERT in combination with convolutional networks to perform aspect-based sentiment analysis. BERT being highly capable of being informed about the words in the sentence, can be used as an advantage along with convolutional networks to produce better results on ABSA than existing systems.

Keywords - ABSA, BERT, Deep Learning, Neural Networks, Sentiment Analysis

PAPER ID: COMP_20 A REVIEW ON AN ENSEMBLE LEARNING APPROACH FOR APOPLEXY PREDICTION

Mitali Kadam¹, Poonav Kuchekar², Srushti Deopurkar³, Sunita Naik⁴ ^{1,2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract: In recent years stroke are one of the leading causes of death by affecting the central nervous system. The term apoplexy refers to brain stroke. There are different types of strokes, among which ischemic and hemorrhagic majorly damages the central nervous system. In this research work, Machine learning techniques are applied in identifying, classifying and predicting the brain stroke from medical information. The standard dataset is available on Kaggle. The dataset contains 11 attributes and 5000 rows. According to research, Stacking proved to be the best with 98.9% of accuracy and 97.4% of recall, precision and F-measure. The stacking was composed of single classifier as base learners and Logistic Regression or Random Forest was used as meta learner. Decision Tree, K-Nearest Neighbor, SVM, Adaboost, Logistic Regression etc was used as a single model or as an ensemble model. The purpose of this paper is to present a survey on predictive models for Brain Strokes using a machine learning ensemble classifier.

Keywords – Stacking, Meta-learner, Ensemble learning, Base learners

PAPER ID: COMP_21 FEATURE BASED IMAGE VALIDATION SYSTEM

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Abstract : The proposed system is a scalable enterprise level solution that will help the organizations to identify weather the uploaded image is acceptable in presented e-filing of important documents, like PAN card and Voter IDs, VISA & various admission forms this system also helps in filling e-forms for national level examinations like GATE, JEE, NEET. The proposed system will reduce the need for manual labour and people chasing the government offices and bankers to change minor details which sometimes leads to repeating the entire process multiple times. Also, many applications are rejected due to minor faults in the images uploaded by the users. As they don't follow the constraints specified in the document by the respective organization. We have implemented multiple features in the proposed system, which includes. Facial alignment and orientation, face detection and verification. The key features of our product will be used to recognize and verify your facial images to enable extremely fast and secure signing in and verification process.

Keywords– Background Separation, CV2, E-filing, Feature Extractor, Edge Detection, Guidelines.

PAPER ID: COMP_22 DECENTRALISED RIDESHARE

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Abstract: The auto- participating request is continuously developing and lately it has come indeed more wide than auto power. still, the classic auto- sharing system is grounded on a centralized database garcon which can frequently lead to hacker attacks or word leaks. also, in a classic auto- sharing system, the possessors of the buses can misuse guests ' data. As noticed currently from a lot of use matters, the stylish result to these grueling issues is to use blockchain technology. Blockchain as a decentralized, inflexible, public tally provides guests with security that's insolvable to tamper with. Blockchain is a system of establishing information in a way that makes it grueling or insolvable to alter, hack, or trick the system. A blockchain is principally a digital tally of deals that's replicated and spread across the entire network of computer systems on the blockchain. stoner's data is sensitive and pivotal, and blockchain can significantly change how stoner's critical information is viewed, by creating a record that can't be altered and is translated end- to- end, blockchain helps help fraud and unauthorized exertion. The former exploration's numerous excrescencies were revealed with a quick skim. The being systems offered a result to produce and apply peer- to- peer shortterm auto- sharing operations grounded on blockchain technology and smart contracts. For the perpetration of smart contracts, the Solidity programming language is used. reliability works with the Ethereum blockchain. The crucial novelty of this system is introducing a peerto-peer auto-sharing service without a central authority, which reflects a drop in costs and an increase in data translucency in that system. Also, token- grounded results give us the capability to cover business- to- business(B2B) and business- to- client(B2C) use cases Keywords-Blockchain, Decentralized, Smart contract, ridesharing, peer-to-peer

PAPER ID: COMP_23 A REVIEW ON PCOS PREDICTION USING DEEP LEARNING

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Abstract: Polycystic ovary syndrome (PCOS) is a hormonal endocrine disorder that occurs in women of childbearing age. As a common condition likely to threaten the physical and mental health of women, the detection of PCOS is a growing public health concern worldwide. Symptoms of PCOS include obesity, menstrual irregularities, weight gain, androgen overproduction, acne, and hirsutism. These symptoms may be somewhat similar to normal women, even in women with PCOS. However, ignoring these symptoms can be detrimental to your health. Existing research focuses on feature-based prediction based on machine learning models. There are no systems focused on feature-based prediction using deep learning models. The current system uses more features and therefore is more accurate. Therefore, the proposed system picks up fewer features with high accuracy. There are also some systems that can predict PCOS based on images that require an ultrasound report. This system can be used for early prediction of PCOS based on various characteristics. This system can be cost effective. Using feature extraction allows us to consider several important features, and the best and smallest set of parameters improves accuracy.

Keywords – PCOS, Deep Learning Model, Detection, Parameters, Accuracy.

PAPER ID: COMP_24 A REVIEW ON THE ADVANCEMENT OF AUTOMATED ATTENDANCE SYSTEM

Shubham Yelve¹, Dikshita Patil², Roopesh Singh³, Janhavi Sangoi⁴ ^{1.2,3,4}(Computer, VIVA Institute of Technology, University of Mumbai)

Abstract: Attendance is the most common element throughout our life, starting from schooling days, right to the corporate world. It is an essential part of justifying the excellence of a particular employee. So there are two kinds of attendance systems a company can choose from, i.e. manual or automated. The traditional attendance tracking method includes punch locks or some other kind of manual system, it's proven to have some associated problems such as time-wasting, fake attendance, and loss of attendance sheets, therefore making the system inefficient and ineffective. However, this method requires consistent human supervision. But fortunately, the evolving technology has led to the introduction of the automated attendance system that provides much better results. some attendance systems that have been made to overcome these problems, based on the detection of biometrics, barcodes, and QR Codes have been able to simplify the attendance process. **Keywords** – Automated Attendance, Barcodes, Biometrics, QR Codes.

PAPER ID: ELECT_01 AUTOMATIC SCANNING OF RFID TAG OF PRODUCTS IN SMART TROLLY AT SHOPPING MALL

Pranay Jadhav¹, Ajinkya Gharat², Ankit Patil³, Deepak Sajnekar⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : Shopping and browsing at large malls is now a daily activity in subway cities. We can see a large rush at malls on holidays and weekends. The rush is even greater when there are special offers and discounts. People at malls are purchasing different things and then place them in the trolley. After a total purchase has been done, individual has to go to the cashier for payments. Then cashier then prepares the bill via using a bar code reader, which results as a time-consuming method and leads to long queues at charge counters. Hence, we had discussed different methods to make old-fashioned manual shopping into smart shopping and had proposed a new method. RFID systems will aid in the elimination of the current barcode scanning system, making shopping simple, easy, and time-efficient. In this system, tags will attach to products and be read by a reader in the trolley, which will show all details about the products on an LCD display. It will also show product weight, and payment will also be done by RFID technique.

Keywords – IoT, Node MCU, RFID Reader, RFID Tag, Smart Shopping

PAPER ID: ELECT_02 RAILWAY TRACK INSPECTION VEHICLE

Abhinnasundar Gujari¹, Yash Pawar², Manoj Goundar³, Ritesh Chavan⁴ ^{1.2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract: A train is the popular conveyor for the people next to buses. Railways are the lifelines of a country. The automation of trains is essential as a mishap causes more damage to its travelers and the department. Our present model is a minor attempt to find out how the aforesaid idea can be implemented. Though this model will not serve the purpose of actual commercial use, it is sufficient to show the way through which we can proceed to make the train systems completely automatic with the aid of electronics. The detection of cracks in rails is a challenging problem, and much research work has been spent on the development of consistent, repeatable crack detection systems for use on in-service rails. While crack detection in the rail head and shear web is consistently achieved by using ultrasonic and eddy current techniques, neither technique is particularly operative for the detection of cracks in the rail foot. In our "Indian railway system", all the controlling purposes are done by manpower. Breaks in railway lines are lines and are still one of the biggest causes of train derailment. The most common break is a crack in the crown of the rail that forms an estimated 70° angle with the horizon line. This flaw, due to its peculiar shape, is known as the kidney defect. Breaks in rails may vary from a narrow crack to the separation of a part of a rail. In some cases, the break occurs inside the rail at the time of the manufacturing process. In our method we are making use of ultrasonic sensors for crack detection. We are making use of the NEO6M module for sending GPS co-ordinates where the train has stopped using LoRa technology.

Keywords- Ultrasonic sensors, LORA, crack detection, railway track, GPS system, ESP32CAM.

PAPER ID: ELECT_03 VEHICLE ACCIDENT PREVENTION BY EYE BLINKING SENSOR AND ALCOHOL DETECTOR

Yashodeep Katkar¹, Bhushan save² Pratik Patil³, Saurabh Bait⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : The challenge represents an answer in which we attempt to tackle the hassle of loss of life and belongings due to drunken use. In our mission, we've used an ESP32 microcontroller connected to an alcohol sensor that detects the presence of alcohol with the aid of reading the breath of a person riding in an automobile. Eye blink sensor is used to detect the drowsiness or sleep state of the driver. The engine of the car is turned off with a gradual decrease in velocity, and the emergency siren is blown with a LED indicator as quickly as alcohol or drowsiness or sleep is detected, thereby minimising the chances of any mishaps that would have occurred. Consequentially, loss of life and assets is averted.

Keywords – ESP32 Microcontroller, alcohol sensor, eye blink sensor, LED indicator, drowsiness

PAPER ID: ELECT_04 MULTIPURPOSE SWIMMING POOL CLEANING DEVICE FOR OBSERVATION, CLEANING AND LIFE GUARDING WITH pH INDICATOR

Hrithik More¹, Shubh Arekar², Rohan Shinde³, Prof Rahul Abhyankar⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : Nowadays people are widely using water parks, public swimming pools, and private pools in villas/farmhouses. Due to the use of pools at such a high rate, there is a requirement of cleaning pools twice a week. If you have your swimming pool, you may want to save money by cleaning the pool yourself because of this there is a need to hire a person to clean the pool, which is costlier at times for an individual owner. Even though we are living in the 21st century there are no such affordable devices to clean the pool and the available devices are way too expensive therefore the owners don't prefer relying on these devices and thus hire a person. To clean the walls of the swimming pool the labour has to hold his breath for several minutes and scrub the walls by hand with the help of a metal plate, it is not only a very hectic job but also dangerous for the life of the person. This is unnecessary donkeywork. Considering these factors, we came up with the idea of developing a device that cleans efficiently and reduces labour intensity. We thought of making a multipurpose device that not only is a cleaner, an observer, an indicator for the pH level and TDS of the water, but also a lifeguarding device. Our device cleans the floor and side walls of the pool and removes all the dirt, algae, residue, etc., and also collects the leaves on the surface. The removed dirt or algae is separated with the help of a filter and the clean water is released back into the pool. It is equipped with pH level and it also has a provision of the camera to observe underwater. In case of drowning situation it can also carry a floater or a rope.

Keywords - *Multipurpose swimming pool cleaner, Filter, Suction pump, pH level indicator, underwater observation device, Life guarding device.*

PAPER ID: ELECT_05 AUTOMATED WATER SUPPLY AND THEFT IDENTIFICATION USING ESP32

Dipesh Chavan¹, Sejal Pashte², Salman Ali³, Deepak Sajnekar⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : This document explained that the water provided to the consumer/purchaser is delivered at a constant flow rate. Certain consumers/buyers may take additional water by hooking up motors to pump water directly from the mains, and this is considered water theft. We propose to develop a system-based microcontroller for Surveillance and theft of the water supply detection system by recording the overflow rate on the side. To use the proposed water distribution system individual consumers may be equipped with a microcontroller kit with the floor determining the flow rate with a flow detector. It is also equipped with a motorized solenoid valve for supplying water to consumers. In case of water theft, a larger amount of water and the corresponding amount is transferred to the consumer ID. If the consumer does not pay or uses more water, the valve is turned off via the microcontroller, cutting off the water supply. The LCD is connected to the microcontroller and displays data locally. The automatic architecture proposed is fully programmed, requiring no human effort.

Keywords - *Microcontroller, Solenoid Valve, Relay, Water Supply Monitoring, Theft Identification, Water Distribution System.*

PAPER ID: ELECT_06 SIMULATION MODEL OF 3 PHASE TRANSMISSION LINE FAULT ANALYSIS

Khushali Ladhava¹, Charmy Bhatt², Nikita Sirsat³, Chitralekha Vangala⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : Today the demand for electricity or power is accelerating day by day these results to transmits more power by boosting the transmission line capacity from one place to the other place. But in the transmission line when supply is transmitted at some time the faults come in the system, like as Phase to Phase, Single Phase to Base, and Double Phase to Base. These faults affect the power system outfit which is connected to it. The main object of this project is to learn or analysis of all this faults and also identify the effect of the faults in the whole transmission system along with the bus system which is connected to the transmission line. This project approaches the MATLAB Simulink software in which the transmission bus system model is designed and various faults will be passed by using the fault toolbox which has been discussed above. After that, various effects on the system due to various faults are shown like as voltage, current, and power with the positive, negative, and zero sequence elements of voltage and current result in terms of graph.

Keywords - Double Phase to Base, MATLAB Simulink Software, Power System, Phase to Phase, Single Phase to Base, Transmission Line.

PAPER ID: ELECT_07 BATTERY SWAPPING STATION WITH BATTERY HEALTH MONITORING SYSTEM

Jigar Patel¹, Amitkumar Vishwakarma², Rohan Gawai³, Bhushan Save⁴

Abstract : India's government wants to transition to EVs because air pollution has been a significant problem there. Due to the fact that charging an EV takes longer than starting one, the need for charging stations will increase as well. This makes switching from a gasoline vehicle to an EV difficult. The proposed remedy is a battery exchange facility. Where we can acquire a fully charged battery and exchange it for our discharged battery because of this idea being put out. It will save time because changing the battery will just take a few seconds. The station's screen will display data on the battery's health parameters provided by the second component of the proposed system, a battery monitoring system. An Arduino mega is an element of this system that helps with battery health monitoring. The Indian government is getting ready to switch to EVs because pollution is a major problem and there is a rising demand for them. In response, this ideology was presented. A planned system where fully charged battery and exchanged for discharged ones is known as a battery exchange station. The second element of the suggested system will communicate the battery status parameters shown above the screen on the AT MEGA 2560 in order to keep a check on the battery status.

Keywords – Arduino Mega, Charging, Batteries, Battery Monitoring, Swapping Station, Parameters.

PAPER ID: ELECT_08 BLDC MACHINE DESIGN SOFTWARE

Sagar Manani¹, Dharmesh Dangodara², Rahul Parmar³, Harsh Chauhan⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : For dynamic applications like those in the automotive, pumping, and rolling industries, BLDC motors are a must. By 2030, it is anticipated that BLDC motors would supplant conventional induction motors as the standard form of power transfer in enterprises. When dependability and durability are taken into account, the BLDC motor fails to provide increased fault tolerance, decreased electromagnetic interference, decreased an acoustic noise, decreased flux ripple, and decreased torque ripple. A small number of Surreys on designing and controlling BLDC motors were conducted throughout the past five years. vital Issues We do not address concerns like comparing existing vector control schemas, improving fault tolerance, reducing electromagnetic interference in BLDC motor controllers, and others. **Keywords** - Designing, BLDC machine, software, DART language, computer-aided, educational tool, and BLDC calculations.

PAPER ID: ELECT_09 DESIGN OF DIGITAL SYNCHROSCOPE BASED ON ARDUINO FOR SYNCHRONIZATION OF ALTERNATORS

Akash Holmukhe¹, Bhushan Save² Anuj Kap³, Lalit Sonar⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract: Synchronization of two alternators is very important process at generating station. Synchronization is done to connect more alternator's parallel to achieve the high demand of power. For this process, synchroscope method is frequently used. Synchroscope shows the differences of frequency and phase angle between two powers by deflecting pointer clockwise and anticlockwise. We also required additional instruments for measuring frequency and voltage. The intention of this paper is to propose the methodology of a single device which measure the required parameters and show on single display and also give signal to circuit breaker or further system to synchronize or connect the alternators with bus. It is fast, cost effective and precise to be used for monitoring.

Keywords - Alternators, Arduino, parallel operation, Synchronization, Synchroscope.

PAPER ID: ELECT_10 RESEARCH ON INSPECTION ROBOT FOR CHEMICAL INDUSTRY

Atish Khade¹, Mukeshkumar Mishra², Shrutika Sonalkar³, Rohan Chavan⁴

Abstract : A gas monitoring system plays an important role in nearly all the chemical industries as it prevents casualties. Multiple of the gas monitoring systems employ distributive seeing, a precious and complex process. The system discussed in this paper is an essential approach that consists of a mobile robot capable of moving on its own with a handicap avoidance algorithm. It can snappily overlook dangerous events (bank, fire, etc.) in all the corridors of an artificial complex and can incontinently induce an alarm and send SMS to all the concerned people if it detects a hazardous event. The use of a mobile robot offers several advantages over traditional approaches, such as covering a larger area, providing real-time data, and adapting to changing environments and processes.

Keywords - Chemical Industry, Dangerous, Fire, Gas Sensor, Mobile Robot, Monitoring, SMS

PAPER ID: ELECT_12 SOFTWARE DEVELOPMENT USING PYTHON LANGUAGE FOR DESIGNING OF SERVOMOTOR

Prerana Ramteke¹, Rinkal Patil², Mahesh Gujare³, Chitralekha Vangala⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : A servomotor (or servo motor) is a rotary or direct knob that allows precise control of angular ordirect position, rapidness, and acceleration. It consists of a suitable motor coupled to a position feedback detector. Servomotors have high strand capabilities. Servomotors are also known as control motors. The mainaim of this design is to experimentally demonstrate the modelling and designing of servo motor using a pythonrested graphical user interface. This system focuses on the parameter setting, analog and digital accession, programming and HMI (Human Machine Interface) with GUI (Graphical User Interface) setting of servo motor designing. Servo Motors have high strand capabilities. Servomotors are also known as control motors. Unlike large mechanical motors, they aren't used for running energy conversion but only for precise speed and precise position control at high strands. The main aim of this design is to experimentally demonstrate the modelling and designing of servo motor using a python rested graphical user interface. It also aims at combining a servo motor with. In order to meet the demands of high accuracy, liableness and real-time control of servo motors we've proposed this design. This design focuses on the parameter setting, analog and digital accession, programming and HMI(Human Machine Interface) with GUI(Graphical User Interface) setting of servo motor designing and control system. *Keywords* – *Designing, GUI, Parameters, Python language, Servomotor.*

PAPER ID: ELECT_13 DESIGN AND IMPLEMENTATION OF WATER GARBAGE CLEANING ROBOT

Dhanesh Patil¹, Anojkumar Yadav², Rajesh Patra³, Komal Patil⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : It describes the design of a robot for cleaning solid waste floating materials on the water surface. The motive of the robot is to clean swimming pools, ponds, and lakes. This robot describes designing of a structure that can provide high stability and can easily collect floating particles. Because if floating particles carry on to glide on the water's surface it leads to the amount of sunlight passing through the water being reduced due to which photosynthesis reduces which helps to less dissolving of O2 in water bodies. Hence, there is necessary to separate this floating material or particles from water bodies. "Water Garbage Cleaning Robot" is an attempt to clean the floating materials, uses a renewable source (solar panel) to operate its machine, Arduino Uno, sensors, motor driver, Bluetooth module, etc. This robot will help to clean the trash and maintenance of cleanliness of the water with minimum cost as well as minimum human effort.

Keywords - *Arduino Uno, Bluetooth module, Floating substance, garbage, photosynthesis, water cleaning, etc.*

PAPER ID: ELECT_14 GSM BASED CONTROLLING AND MONITORING SYSTEM OF UPS BATTERY

Pranay Jangam¹, Mitali Pashte², Asmita Pashte³, Sangita Kamble⁴ _{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)</sub>

Abstract : In remote area we know that Power crisis and load shedding is the major problem. Because of this Power crisis we did not reach to our maximum potential we lost the process efficiency and drop the productivity of our organization. To overcome from this type of problems we have many equipment to get backup to save our industrial projects and domestic work. We called this type of device is UPS (Uninterruptable power supply) We have to monitor the UPS continuously. Today in every scale of industrial sections as well as business area it has use of the UPS system has increased in day by day. The main purpose of this system it is to control and Monitor the UPS system batteries with remotely using the various sensors like ZMPT101BAC voltage sensors and VCC25DC voltage sensor, ESP 32 microcontroller, GSM module and current sensor so UPS modelling and control system it is a very important aspect. Our project it is very useful for electronic equipment system which runs on battery based power supply by adapting this system user can monitor and control the UPS system will be performed by cloud computing and get alert to system through SMS.

Keywords - *Battery monitoring data, continuously monitoring voltage, Cloud computing, GSM, Increasing productivity and efficiency, SMS, UPS.*

PAPER ID: ELECT_15 ELECTRICAL DRIVE BASED FLOOR CLEANING ROBOT

Rahul Gupta¹, Mohan Dhadaga², Deepak Sajnekar³, Suraj Gupta⁴

Abstract : Industrial, commercial, and residential robotics systems are common nowadays. However, an electric drive-based floor cleaning system that provides cleaning as well as mopping works, while being automatic as well as Bluetooth controlled, also it is moderately expensive. This paper presents the Structure and implementation of an electric drive-based floor cleaning with a Wi-Fi-based or Bluetooth-based controller. This system is based on microcontroller and dc electrical motor and depend on various sensor. This system based on android application that is secure and easy to use for the user. We can use an applicationbased system that is secure for the login that connected to the Bluetooth system. It can used to control the system motion to guide it in a specific direction to clean the floor and mop this floor. The human has complete control over the system in either the Bluetooth mode or manualcontrolled mode. This system consists various blocks components namely the Dc battery source, motor wheels, cleaning brush, vacuum fan, water pump, for communication block (Bluetooth control, HC 06 Bluetooth module), and for control software block (Android remote controlled), Water tank place where we store the water for this system. During the implementation and testing of this system, it observed that the robot works as on program, and is operational with most of the functionalities of a domestic commercial state-of-art electrical drive-based floor-cleaning robot.

Keywords -Bluetooth, BLDC Motor Fan, Motor Driver, Sensor, Wi-Fi.

PAPER ID: ELECT_16 IoT BASED FIRE EXTINGUISHER SYSTEM

Mihir Vartak¹, Mukeshkumar Mishra², Dipesh Tokare³, Mayuraj Ahire⁴

Abstract : A fire incident is a disaster with potential loss of life, damage to property and permanent damage disability to the victim. They might also experience trauma and protracted psychosis. Fire Soldiers are primarily responsible for responding to fire disasters, although their safety is frequently in jeopardy. combating fires, particularly in dangerous settings like gas tanks, oil refineries, and nuclear power facilities. They also face other difficulties, especially if the fire subsides. And restricted spaces, as it is necessary to locate the remains of buildings and obstacles to extinguish them put out the fire and rescue the victim. High barriers and risks in firefighting operations, technical Innovations can be used to aid in firefighting. Therefore, this project development presents a firefighting robot that can put out fires without firefighters having to deal with unnecessary things to risk the robot is designed to be flexible in operation compared to other conventional firefighting robots. It had its effect Robot demonstrates ability to automatically detect and extinguish fire locations Fire from a distance at a certain distance. The robot is programmed to recognize the location of the fire and stop as soon as possible. A human operator can monitor the robot by using IOT Server which connects to a smartphone or remote devices.

Keywords - Damage, Detect, Disaster, Hazardous Environments, IOT Server, Robots.

PAPER ID: ELECT_17 WAVE ENERGY GENERATION

Rahul Gupta¹, Mohan Dhadaga², Deepak Sajnekar³, Suraj Gupta⁴ ^{1.2.3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : Oc

ean waves are a huge, largely untapped energy resource, and the potential for extracting energy from waves is considerable. Research in this area is driven by the need to meet renewable energy targets. But is relatively immature compared to other renewable energy technologies. This review introduces the general status of wave energy and evaluates the device type that represents current wave energy convertor (WEC) technologies. Here, our project focusing to eliminates the existing limitations of wave energy converter methods, and also helps the potential of this method for generating electricity and this could be common way to producing electricity in future.

Keywords - Ocean, Wave, Energy Generation, Electricity, Renewable energy, eco friendly

PAPER ID: ELECT_18 PREDICTIVE MAINTENANCE OF MOTOR USING MACHINE LEARNING

Siddhesh Darje¹, Premchandra Kumbhar², Nilesh Marchande³, Deepak Sajnekar⁴

1.2.3.4 (ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract: As we all know that Condition monitoring together with predictive maintenance of electric motors and other equipment used by the industry avoids severe economic losses resulting from unexpected motor failures and greatly improves the system reliability. This paper describes a Machine Learning architecture for Predictive Maintenance, based on Machine Learning approach. The system was tested on a real industry example, by developing the data collection and data system analysis, applying the Machine Learning approach and comparing it to the simulation tool analysis. Data has been collected by various sensors. With the help of this paper, we want to monitor and increase the life span of Electric motor and other equipment's.

Keywords - Predictive maintenance, Fault Diagnosis, Anomaly Detection, Deep Learning,

PAPER ID: ELECT_19 DEVELOPMENT OF AN ANDROID APP FOR DESIGNING OF STEPPER MOTOR BY KODULAR SOFTWARE

Rahul Gupta¹, Mohan Dhadaga², Deepak Sajnekar³, Suraj Gupta⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : A stepping motor or step motor is also known as a stepper motor, may be a brushless DC electric motor of a full rotation divided into a number of equal steps. In this project, we aim to propose GUI software specifically designed for this application. Implementing a system that has GUI for designing Stepper Motor dependent variables supported given parameters. Designing techniques were developed for both typologies of static magnet stepper motors, respectively bipolar stepper motor and unipolar stepper motor. **Keywords** - java language, program, Stepper motor, AN, Robotics

PAPER ID: ELECT_20 IMPLEMENTATION TECHNOLOGY TO REPAIR POTHOLE USING WASTE PLASTIC

Sidharth Machhil¹, Anojkumar Yadav², Anand Katela³, Yogesh Satavi⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : It describe the system for road repair using aggregate with waste plastic waste in different forms is found to be 9% to 12% in municipal solid waste, which is toxic in nature. Non-biodegradability of plastic in the environment has created numerous challenges for both municipal and rustic part of India. common problem are clogged sawage, stagnant of water, release of toxic fumes during open burning. there are several Traditional methods have some loopholes, the life span of traditionally build road is less effective time span of that road is very less or time taking or required more man power. This system is semiautomated where utrasonic sensor is use to detect the pot hole and induction heater melt the agrigate material and pour through the hot runner. Feedback is taken from rescaning pothole by the utrasonic sensor. **Keywords** - Plastic, Pollution, Pothole, Repair, Road, Sensors, Waste.

PAPER ID: ELECT_22 NFC BASED VOTING SYSTEM

Bhavin Patil¹, Mukeshkumar Mishra², Nikhil Sankhe³, Kriti Singh⁴ ^{1,2,3,4}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract: Election is the most important technique used to gauge public opinion when choosing a government or on any topic that is being debated. Electronic voting devices are thereby replacing the traditional paper-based voting systems. The manual counting of voter identities used in the conventional voting process is timeconsuming, difficult, and more susceptible to fraud. In this new model, research into cutting-edge technologies including NFC voter identification, fingerprint recognition, and the Internet of thing (IOT). This goal is to provide the most effective way to reduce election corruption and cross-voting. It boosts the number of voters and motivates people to cast ballots. As part of this effort, each voter will get one NFC tag for voter identification. If the personal information on the NFC tag does not match, the fingerprint sensor is not activated. In order to ensure a strong level of security for polling vote, voting statistics are uploaded to the cloud at the moment each new vote is cast if they match. If they do, the voter will then permit access to the fingerprint in order to confirm their candidacy before casting their ballot. No one can be reached, and there is no way to manipulate the findings in any way. With the help of the Internet of Things, information is immediately updated to the cloud as the vote count increases (IOT). Data from IOT devices are uploaded to a web site on the portal. Only the vote information and results are accessible to the Election Commission (EC). No one is informed of the outcomes, the vote percentage, etc., unless the electoral commission makes an announcement. Keywords - EC, EVM, IOT, NFC, Reader, Voting.

PAPER ID: ELECT_23 REVIEW ON ELECTRICAL AUDIT MANAGEMENT IN MATLAB SOFTWARE

Tejas Sankpal¹, Rahul Abhyankar², Anojkumar Yadav³ ^{1.2.3}(ELECT, VIVA Institute of Technology, University of Mumbai)

Abstract : In this paper features of MATLAB software is used for Electrical Audit Management Report. Comparison of different software and advantages of MATLAB over it. In new update of software, report generation feature is very useful to automatically generate the daily / weekly / monthly report.

Keywords – Artificial Intelligence, Electrical Audit, MATLAB software, Report Generator, Smart Automatic Report.

PAPER ID: EXTC_01 A DRONE FOR SPRAYING PESTICIDES, FERTILIZERS AND DISINFECTANTS

Omkar Choudhari¹, Dhrumil Chauhan², Rutik Kini³, Pratik Parsewar⁴ ^{1,2,3,4}(EXTC, VIVA Institute of Technology, University of Mumbai)</sup>

Abstract : There are too many technologies involved in today's agriculture, out of which spraying pesticides using drones is one of the emerging technologies. Manual pesticide spraying causes many harmful side effects to the personnel involved in the spraying process. The exposure effects can range from mild skin irritation to birth defects, tumors, genetic changes, blood and nerve disorders, endocrine disruption, coma or death. The WHO (world *health organization) estimated as one million cases of ill affected, when spraying the pesticides* in the crop field manually. This paved the way to design a drone mounted with spraying mechanism having 12 v pump, 1 litre storage capacity tank, nozzles to atomize in fine spray, an quadcopter configuration frame, suitable landing frame, 4 brushless direct current (BLDC) motors with suitable propellers to produce required thrust about and suitable lithium- polymer (LI-PO) battery of current capacity 22000 mah and 22.2 v to meet necessary current and voltage requirements. A first-person view (FPV) camera and transmitter can also be fixed in the drone for monitoring the spraying process. This pesticide spraying drone reduces the time, number of labour and cost of pesticide application. This type of drone can also be used to spray disinfectant liquids over buildings, water bodies and in highly populated areas by changing the flow discharge of the pump.

Keywords - Flight Controller, Motors, Pesticides Spraying, Sanitization, Surveillance

PAPER ID: EXTC_02 AI BASED TRASH CLEANING ROBOT

Abhishek Khandekar¹, Vishvesh Khanvilkar², Aman Kutrekar³, Mrunali Patil⁴ ^{1,2,3,4}(EXTC, VIVA Institute of Technology, University of Mumbai)

Abstract : The objective of the project is to design an automatic AI robot which can segregate the waste with the help of object detection .It includes different partitions of water using camera with a robotic arm for picking and placing of waste . The system will be useful in making waste management in smart cities automation, people are busy in their professional life and they forget to pay attention to their surroundings problem which can led to may hazardous disease. The project is aimed to minimize the human efforts to clean the waste and to make Blue planet Blue again. From the interest and need of cleaning contaminations in the house hold, this project idea has been created to suit the prerequisite of working in house, giving more decisions for the utilization of cleaning garbage and waste from the floor. **Keywords -** Robot; garbage; waste disposal.

PAPER ID: EXTC_03 I-AGRO (Intelligent Agriculture)

Karishma Raut¹, Nikita Kubal², Deepak Kumar³, Onkar Pethe⁴ ^{1,2,3,4}(EXTC, VIVA Institute of technology, Mumbai University)

Abstract: India is a developing nation that relies heavily on agriculture for its economy largely based on crop production and Maharashtra is a leading state in agriculture. Machine learning (ML) and artificial intelligence (AI) are being rapidly adapted in agriculture since they can comprehend, learn, and adapt to various situations (based on learning) to boost efficiency. Farming technologies powered by AI enable farmers to achieve more with less while improving quality and assuring a rapid go-to-market strategy for crops. The work focuses on estimating the yield of the crops by using a different machine learning algorithm as well as various plant diagnosis and providing a relevant solution for them. Al's adaptability, high performance, precision, and cost-effectiveness are essential concepts in agriculture. Finally, the applications of Al in crop management and disease management with weather and price forecasting are highlighted.

Keywords - Machine Learning, Convolutional Neural Network, Plant Diagnosis, Random Forest Classifier, Yield Prediction, Forecasting

PAPER ID: EXTC_04 MediCareBot: Better Healthcare Services

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Abstract: The COVID-19 pandemic has shown that there is a lack of healthcare facilities to scope with a pandemic. This has also underscored the immediate need to develop hospitals capable of dealing with infectious patients and to rapidly change supply lines to manufacture the prescription goods (including medicines) that are needed to prevent infection. There is a danger of Hospital-acquired infections (HAIs), Tuberculosis (TB), and many more which are the leading causes of mortality and pessimism. In this scenario, there is a need to reduce person-to-person contact in hospitals. The role of delivery robots is evolving to prevent infection from doctors and medical staff by various viruses (coronavirus, monkeypox, Nipah virus). In this paper, we proposed a robot named MediCareBot with some functionality of providing medicine as well as measuring vital parameters (Heart rate, Temperature, Pulse rate) of the patient. In the project, a line-following robot is a device programmed to follow a specific path. Line tracking robots that monitor patient parameters at given times or transport medication and equipment to patients whenever needed based on predefined routes. Finding the path to the patient's position using Line follower and RFID.A proximity sensor also has attached been to the robot. allowing the robot to detect obstacles in its path and trigger an alert. This technology focused on the delivery of safe, timely, efficient, effective, patient-centered, and equitable health care. Measured parameters are stored in the cloud using the Internet and Send this data to the respective doctor when he/she is busy or not at the hospital and also for the hospital record system.

Keywords - IR Sensor, Line Following Robots, Medicine Delivery, Patient Monitoring System, RFID.

PAPER ID: EXTC_05

A One stop APP for Personal Data management with enhanced Security using Interplanetary File System (IPFS)

Madhura Ranade¹, Abdulkadir Sadriwala², Aniket Yadav³, Harsh Purohit⁴ ^{1,2,3,4}(EXTC, VIVA Institute of technology, Mumbai University)

Abstract: In today's digital era, the use of physical documents has been replaced by software files for various administrative and everyday purposes. To keep up with this trend and provide a secure and efficient platform for managing documents, this thesis/project proposes a platform that utilizes hashing and IPFS technology for secure document management. The proposed system allows users to upload and store documents on a remote cloud storage server, and share them via QR codes. Upon request, the document owner can grant access to the receiver to view and download the document. The system provides two levels of security to protect user's data and documents. This proposed system can be implemented through an Android application. Overall, the proposed system provides an efficient, secure, and modern approach to document management.

Keywords - Android Application, cloud storage, hashing service, IPFS technology.

PAPER ID: EXTC_06

Annapurna – Waste Food Management

Karishma Raut¹, Saurabh Agre², Anjali Gupta³, Poorti Nai⁴

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Abstract : India, the second largest country in the world in terms of population. The food requirement is also rising exponentially with the population. Many factors like, bad weather , pandemic, natural calamites affect food production. If food production is less than only alternative to have enough food is utilization of food. The significant rise in food waste necessitates Charity in terms of donations. In the current scenario, the majority of food is lost daily at numerous restaurants, social gatherings, and other social activities. The current framework provides details about the inspiration for such an application by visiting each organization multiple times to reduce food waste. According to the Food and Agriculture Organization (FAO), nearly 1.3 billion tons of food each year which is one third of what is being produce for human consumption is wasted around the world. On the other hand, the World Health Organization (WHO) estimates that 20% of the world's population faces severe food shortage. The developed application portal will help society by providing food to those in need. It keeps track of restaurants and NGO in nearby locations by highlighting availability of food and need. The supporting features are also kept for communication and from future perspective.

Keywords- Donate, Food Management, NGO, Restaurant, Volunteer

PAPER ID: EXTC_07 Gene Expression based Cancer type Classification using Convolutional Neural Network

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Abstract: Deep learning has grown tremendously in past years and its utilization in medical applications gives superior outcomes. Cancer is a hereditary disorder in which genomic differences generate genes that act improperly and seem to change expression. Gene expression analysis investigates the process by which genes are translated into protein, RNA, or functional gene products. As a result, gene expression levels are useful to find therapy outcomes as well as diagnoses for cancer. The GeneExpressnet is built based on Convolutional Neural Network (CNN) for utilizing gene expression data specifically RNA-sequencing to diagnose many cancer-type classifications. The RNA-sequencing data from The Cancer Genome Atlas (TCGA) is pre-processed before being incorporated into various two-dimensional pictures. In order to attain the best diagnosis accuracy, these images will next be submitted to GeneExpressnet, which will classify them into 33 forms of cancer and outperform other existing models by comparing different performance measures.

Keywords - *Convolutional Neural Network, Deep Learning, Gene Expression, The Cancer Genome Atlas, Tumor Type Classification*

PAPER ID: HAS_01

A Comprehensive analysis of Benzohydrazide based molecules for its potent Antitubercular, Anticancer, Antibacterial, Antifungal and Antimicrobial properties.

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Abstract: There are numerous medical uses for benzohydrazide and its derivatives, including analgesics, anticancer, antitubercular, antifungal, antiviral, and antibacterial properties. The hunt for new therapeutic compounds has been helpful due to the variety of pharmacological properties displayed by benzohydrazide and the great degree of structural diversity offered by its analogues. Individual benzohydrazide derivatives have a wide range of pharmacological activity, indicating that this group of molecules is unquestionably interesting. A fast growing and more active area of study is the related benzohydrazide functionalized derivatives and stated potential biological activity applications for their antimicrobial, anticancer, antitubercular, antibacterial, and antifungal characteristics. **Keywords -** Applications, Biological activities, benzohydrazide derivatives

PAPER ID: HAS_02

Study of potential applications of derivatives of Benzothiazole for its Anticancer, Antimalarial, Antiviral and Antitubercular properties.

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Abstract : Heterocyclic compounds exhibiting biological activity is widely established. Since then, a large number of heterocyclic derivatives have been synthesized and are now known to have wide range of essential applications in a variety of domains including medical chemistry. Another heterocyclic bicyclic class of molecules containing benzothiazole moiety has a wide range of therapeutic applications, including those for anthelmintics, anticonvulsants, analgesics, antiviral, antifungal, anticancer, anti-inflammatory, antidiabetic, antileishmanial, antitubercular, antibacterial etc. Since benzothiazole derivatives have a diverse range of pharmacological activity, demonstrating the undeniable interest of this class of compounds and also is a rapidly expanding and more active area of study. In this study we have focussed on the potential applications of benzothiazole functionalized compounds for their antiviral, anticancer, antitubercular and antimalarial properties. **Keywords -** Applications, Biological activities, benzothiazole derivatives.

PAPER ID: HAS_03 Impact of the Physical Workplace on Work-Performance and Work-Satisfication

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Abstract : The study objects to investigate the link between the physical workspace and productivity. The sample size from the various companies was 110 employees. The study objectives were met by combining a survey with the literature review as part of a qualitative and quantitative approach. In relation to numerous dimensions, the physical work environment components such as noise, temperature, air quality, light, space or seating arrangement, and job satisfaction were assessed. The data collected was analyzed. The findings indicated that situational limitations, which are made up of variables like noise, office furniture, ventilation, and light, are the primary physical work environment features that have a negative impact on job performance and that businesses should pay greater attention to. Companies are encouraged to make an attempt to inspire workers by enhancing the workplace. When workers are motivated, they perform better at work and accomplish the objectives set for the position, increasing the employers' pleasure along the way.

Keywords - physical Work environment, work satisfaction, work performance

PAPER ID: HAS_04

Role of Operations Research Techniques in Agriculture: Review

Paper.

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Abstract: Operations research was developed before 1940 with the objective of improving army operations through the application of mathematical techniques means providing the best solution to every problem in which providing maximum food is one of the major problem which is related to agriculture field. Again now a days in developing countries agriculture is main sources of economic development. So objective of this paper is to study the current literature on use of operations research in solving agriculture problem for this review the wide range of journals and publications.

Keywords - Agriculture, Operations Research, Linear Programming, Transportation Problems, Assignment Problems

PAPER ID: HAS_05 A review on biological activities of Schiff bases

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Abstract: Schiff bases are compounds having an imine or azomethine group which occur in variety of natural synthetic compounds The imine group has been found to have various biological activities and applications. They have found to have medicinal properties, dyeing ability, industrial applications. The current short review focuses on few of such examples where Schiff bases are found to have anticancer, antimalarial, antibacterial, antifungal, and antiviral activities and corresponding applications.

Keywords - Schiff bases, Antimalarial, Antifungal, Antibacterial, Antiviral.

PAPER ID: MCA_01 Security Issues in Cloud Computing

Krutika Vartak¹, Rupendra Kumar Jangid² ^{1,2}(*MCA*, VIVA Institute of Technology, University of Mumbai)

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. The security concerns in cloud computing, such as data breaches, unauthorized access, and lack of transparency, are explored in this paper. also, the paper explores implicit results to these issues, similar as enforcing strong authentication protocols, encryption, and regular security checkups. It's important for associations to be apprehensive of these security pitfalls and take applicable measures to cover their data and systems in the Cloud.

Keywords - Cloud computing, Data breaches, Data protection, Security audits, Security issues

PAPER ID: MCA_02 Accelerate Quantum Computing with AWS Braket

Pradnya Mhatre¹, Priyanka Rajendraprasad Goud², Shivani Jalindar Kakade³ ^{1,2,3}(MCA, VIVA Institute of Technology, University of Mumbai)

Abstract: Amazon braket is a completely controlled AWS service that facilitates researchers, scientists, and developers get started out with quantum computing. Quantum computing cansolve computational troubles past the reach of classical computers as it harnesses the legal guidelines of quantum mechanics to system statistics in new approches. Amazon braket is designed to offer quantum computer customers with remote get right of entry to a single development environment. The service was announced in December 2019 and is presently to be had in preview mode. It's costly and inconvenient to gain access to quantum computing hardware. restrained get entry to makes it tough to run algorithms, optimize designs, compare the contemporary kingdom of the era, and plan for when to make investments your sources for maximum advantage. Braket enables you over come those challenges.

Keywords – *Braket, Cloud computer, offerings, Quantum, scientific, services, studies, velocity.*

PAPER ID: MCA_04 Google Killer: ChatGPT

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Abstract: ChatGPT is a language model created by OpenAI that has the ability to generate human-like responses to text prompts, making it an AI tool that has the potential to disrupt the search engine industry. This paper explores the potential of ChatGPT as a "Google killer" by examining its capabilities, limitations, and future prospects. It also considers the ethical and social implications of such technology and provides recommendations for its responsible use. As a seasoned developer and teacher, let me tell you, ChatGPT is a game changer you don't want to miss out on. To examine how artificial intelligence, in particular natural language processing, may enhance learning outcomes. ChatGPT has the potential to considerably improve academic research in particular, according to our review of its uses, capabilities, and limitations. Researchers can benefit from ChatGPT and other AI tools for data analysis and interpretation, scenario creation, and dissemination of findings. However, there are a number of drawbacks to taking into account when using chatbots or comparable tools in research, including generalizability, dependence on data quality and diversity, lack of domain expertise, limited context understanding, ethical considerations, and limited capacity for original insight. Therefore, when utilizing ChatGPT, it is crucial to take these limitations into consideration and combine it with human analysis and interpretation.

Keywords – Academic performance, Artificial Intelligence (AI), chat gpt 3, Expert system, Google Replacement, Nature language processing (NLP)

PAPER ID: MCA_05 Decentralization and web3 technologies KRUTIKA VARTAK¹, VISHAL YADAV²

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Abstract : These days, most of the people of the net's content material cloth and user statistics are managed with the aid of some huge tech groups. There can be a developing movement to devolve this control lightly across the whole net, representing the transition to Web3. For this motion to be successful, era and protocols ought to be superior to allow internet customers to use the net securely without trusting every other consumer. These days, the internet depends simply so customers must accept as true one corporation, so accepting as true with fewer options hasn't already been superior. Considerably, this movement emphasizes growing peerto-peer networks, blockchains, and distributed garage structures. Those structures appoint cryptographic primitives to assure security.

Keywords - Philosophy, Sociology, Schooling, Technology, Web 3. Zero

PAPER ID: MCA_07

The emergence of deep fake technology

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Abstract: Machine learning techniques are increasing the sophistication of the technology. Deep Learning is also known as Deep Structured Learning, which is part of the wider machine learning family. Deep learning architectures such as Deep Neural Networks, Deep Belief Networks, and Convolutional Neural Networks (CNN) have been used for computer vision and language processing. One such deep learning-based application that has emerged recently is "deep fake".

Deep fake is a technique or technology where fake images and videos can be created that are difficult for humans to detect. This article looks at how deep fakes are created and what kinds of algorithms are used in them. This will help people learn about the deep fakes that are created daily and a way to tell what is real and what is not.

Keywords: deep fake, deep learning, face swapping, fake detection, Lip-syncing.

PAPER ID: MCA_09 Blurry Image Detection and Classification

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Abstract : Images play a major role in many industries, including computing and technology. The field of blur detection has expanded greatly in recent years. The reason that blur detection has attracted the interest of several people is because of the need for quality images demanded by various industries. Blur detection and classification helps to divide the images into out-offocus and out-of-focus or blur sections. Blurred images can be classified into different categories such as motion blur, Gaussian blur, box blur, etc. There are several techniques for distinguishing blurred from out-of-focus images. These techniques use different parameters to measure the blur of the image. Different methods are used to further classify the images into their types. The result of blur detection and classification is important to estimate whether the image can be recovered, whether the noise can be reduced, or whether it can be reused to some extent.

Keywords: Blur, blur detection, blur detection techniques, blur image classification, blur image detection.

PAPER ID: MCA_10 Survey On Mobile User's Data Privacy Threats And Defence Mechanism

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Abstract: The brilliant increase in the use of mobile devices is a herbal consequence of the benefits they provide. but, most cellular customers grant little importance to the safety of information stored, processed, and transmitted. Even extra, the ultimate two years may be considered years of reference for the cell protection industry - ranging from virulent cell ransomware assaults to cellular IoT botnets and cellular safety breaches thru cellular malware, that have redefined protection paradigms. it is clear that we are at a point of inflection and transition to every other technology of cyber-attacks and the tendency is that attacks on cellular gadgets will expand. the security of cellular devices is a topical problem and the major goal is to educate the person to recognize the dangers to which he/she is uncovered and to provide him/her possible protection answers to guard himself/herself against cellular threats. In this article, we are going to present some safety and mitigation techniques with guidelines for development.

Keywords – Cyber Security, Mobile, Protection, Security, Threats.

PAPER ID: MCA_11 Networking using Service Mesh Technology

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Abstract: This research paper examines how a software's unique microservices interact with a specific community and how we can boost their efficiency by adding an abstract layer to their deployment. The paper focuses on how those services are connected to service mesh, which ultimately permits communication or networking between allotted microservices. This is also typical for current packages that run on containers. The research analyses of Istio, a modernized carrier networking layer that serves as a clear and language-neutral means of flexibly and easily automating the utility network functions, come next to the carrier mesh. As a managing tool for the various microservices that make up a cloud native application, it is a very well-liked product.

Keywords – *Cloud infrastructure, Istio, Kubernetes, Load balancing, Microservice architecture, Networking.*

PAPER ID: MCA_12 ARTIFICIAL INTELLIGENCE IN MENTAL HEALTHCARE

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Abstract : A summary of recent original research on AI specifically related to mental health is provided in this article, along with an overview of AI and its present uses in mental healthcare. The development of prediction, diagnosis, and treatment options for mental health care is being aided by current artificial intelligence (AI), and machine learning in particular. To improve user experience and optimise individualised mental health care, AI is being applied into digital treatments, particularly online and smartphone apps. To create prediction/detection models for mental health disorders, AI techniques can be used. In order to assist with clinical diagnosis, prognosis, and therapy as well as clinical and technological challenges, this article presents an overview of AI techniques in mental healthcare.

Keywords – Depression, Machine Learning, Natural Language Processing, Stress, Suicide.

PAPER ID: MCA_13

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN PRECISION FARMING

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Abstract: Rapid socioeconomic change is opening up new areas of application for precision agriculture in certain developing nations, notably India. The high-tech aspect of traditional PA technologies for emerging countries has enormous consequences for economic development, urbanisation, and energy consumption in some developing countries. The authors' investigation into the various uses of the most recent information technology in agriculture is presented in this study. This article offers details on how various receivers and pieces of software can be used and applied to benefit modern agriculture. Numerous opportunities are opened up by these technologies and their applications, such as resource mapping in nature and impact assessments of environmental changes.

Keywords – Adaption, Artificial Intelligence (AI), Development Machines, Geographic Systems, precision Agriculture, promising solutions.

PAPER ID: MCA_15 Blockchain & Machine Learning In Communication

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Abstract: Blockchain can greatly facilitate the sharing of training data and ML models, decentralized intelligence, security, privacy, and reliable ML decision making. On the other hand, ML will have a significant impact on the development of blockchain in communication and network systems, including energy and resource ef iciency, scalability, security, privacy, and smart contracts. However, there are some outstanding key issues and challenges that still need to be addressed before blockchain and ML integration becomes mainstream, including resource management, data processing, scalable operations, and security issues. In this article, we provide an overview of existing work for blockchain and ML technologies. We identify several key aspects of blockchain and ML integration, including an overview, benefits, and applications. Next, we discuss open questions, challenges, and broader perspectives that need to be addressed to consider blockchain and ML for communication and network systems together.

Keywords – Blockchain, communication, Learning, Machine, technology

PAPER ID: MCA_16 Implementation Of 5G Network In Iot Based Healthcare System

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Abstract : The study aims to describe all the features and functions of the 5G technology and how it will be going to be helpful in the field of healthcare using IoT. 5G was introduced and deployed all over the world in year 2019, 5G comes with many new concepts like- network slicing for better support to various application with different computational power on latency and data rates. It is difficult for the current communication technology to fulfil the requirement of highly dynamic and time-sensitive healthcare application of the future. Currently 4G and other communication standards are used in healthcare services and applications. Current connectivity solutions for the IoT face challenges such as support for a massive number of devices, energy- efficiency, device density and security. There are a lot's of IoT devices and sensors are developed which can be used to collect different vitals physiological parameter for example – heart rate, blood pressure, body temperature, Sugar level etc. These devices lots of data which are stored and on cloud or database, these data are used for analysis. In this paper we present a review of 5G assisted healthcare solution in IoT.

Keywords – Healthcare, Internet of things, IOT devices, 5G assisted healthcare, 5G connectivity.

PAPER ID: MCA_17 Sentiment Analysis In Natural Language Processing

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Abstract: Analysis of people's ideas, sentiments, assessments, opinions and feelings as they appear in written language is known as sentiment analysis. In addition to being heavily researched in internet mining, data mining, , and text mining, it is among the most productive research fields in natural language processing. Applications for sentiment analysis include analyzing the outcomes of social network events and examining consumer views of goods and services. Natural Language Processing (NLP) allows researchers to gather such data and analyze it to gain the underlying meaning of such writings. The study of sentiment analysis is getting used in many other domains and it is depend on techniques used by NLP. With the rise of social media, such as reviews, forum debates, blogs, micro-blogs, Twitter, and social networks, Sentiment analysis is significant because it's becoming more. There are techniques for analysis, such as supervised machine learning and lexical-based approaches.

Keywords – Lexicon, Machine Learning, Natural Language Processing (NLP), Sentiment Analysis(SA), supervised learning.

PAPER ID: MCA_18 Deep learning applications and challenges in big data analytics Neha Lodhe¹, Sumit Bhatkar², Ms. Neha Tiwari³

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Abstract: Two areas of data science with a lot of interest are big data analytics and deep learning. Big Data has grown in importance as a result of the large-scale collection of domain-specific data by both public and private entities, which can provide useful information regarding issues like national intelligence, cyber security, fraud detection, marketing, and medical informatics. Large data sets are being analysed by businesses like Google and Microsoft for business analysis and decisions that will affect both current and future technologies. Via a hierarchical learning process, deep learning algorithms extract high-level, complex abstractions as data representations. Based on relatively simpler abstractions created in the previous level of the hierarchy, complex abstractions are learned at a given level. Massive amounts of unsupervised data can be analysed and learned from using deep learning, which makes big data analytics possible even when the raw data is largely unlabeled and uncategorized. In this work, we investigate how Deep Learning might be used to solve certain key issues in Big Data Analytics, such as extracting intricate patterns from enormous amounts of data, semantic indexing, data tagging, quick information retrieval, and simplification of discriminative tasks. We also look into several Deep Learning research areas that require more investigation in order to address specific Big Data Analytics difficulties, such as streaming data, high-dimensional data, model scalability, and distributed computing. Defining data sample criteria, domain adaption modelling, establishing criteria for generating meaningful data abstractions, enhancing semantic indexing, semi-supervised learning, and active learning are some of the problems we pose in our conclusion to provide insights into pertinent future studies. **Keywords** – Big data, Data Analytics, Data Mining, Deep learning, Machine Learning

PAPER ID: MCA_19 Smart Wearable Technology

Pradnya Mhatre¹, Nikunj Pundkar², Siddhi Raut³ ^{1.2.3}(MCA, VIVA Institute of Technology, University of Mumbai)

Abstract : Smart wearable technology is a hot topic in both the academic and business worlds. Rising desire for innovation has sparked a surge in research and the development of new goods that address fresh problems and open up lucrative prospects. However, despite a number of reviews and surveys on wearable technology, a study outlining how this area has there is a lack of recently evolved, which offers a thorough and impartial understanding of the major issues studied by scientists. Smart Wearable technology is a new research field which has undergone huge improvements in the previous decade, and it appears that in the near future, it will gain much greater significance. The development of high-performance wearable technology has unfortunately been fraught with difficulties. With the aid of numerous technologies like microelectronics and wireless communication, this field combines several research areas including computer science and engineering. In this we will see an overview of wireless telecommunication technologies that enable the design of smart wearable devices such as Bluetooth, 4GLTE, Wi-Fi, ZigBee and WiMAX are outlinedas well.

Keywords – Artificial Intelligence, Mobile Technology, OPC, Smart Device, Wearable Technology.

PAPER ID: MCA_20 Dark Web

Neha Lodhe¹, Mayur Bhate², Rith Belwalkar³ ^{1,2,3}(MCA, VIVA Institute of Technology, University of Mumbai)

Abstract : The main objective of Dark web is that it is the concealed content of the World Wide Web. It requires specialized software, authentication and some configuration to access. In order to demystify the same and provide a structural analysis of the Internet, this paper sheds light on the current composition of the Internet and the portion of the World Wide Web held by surface web, deep web and the dark web. It also discusses how the dark web is different from the deep web, mechanism of accessing the deep web, tor browser and the benefits of the dark web along with some of the real-life applications.

Keywords : Access, Anonymous, Deep web, Encryption, Privacy, The dark web, TOR

PAPER ID: MCA_21 ETHERNET-Passive Optical Network

Neha Lodhe¹, Gitesh Lad², Abhishek Yadav³ ^{1,2,3}(*MCA*, *VIVA Institute of Technology, University of Mumbai*)

Abstract: Ethernet Passive Optical Network (EPON) is a type of passive optical network technology that allows for the delivery of high-speed broadband access over a fiber-optic network. EPON technology is widely used in residential and business environments, as well as in metropolitan area networks, to provide fast and reliable internet access. In an EPON system, a single optical fiber is shared among multiple users, using passive optical splitters to distribute the signal. EPON technology uses Ethernet as its medium access control protocol, making it compatible with existing Ethernet-based networks. This compatibility with standardEthernet protocols and interfaces has led to the widespread adoption of EPON technology, particularly in Asia. To prevent service interruptions and ensure reliable network performance, EPON systems require regular maintenance and upgrades. Network operators must also ensure the security of the network, as well as the privacy of user data. Ethernet Passive Optical Network technology is a powerful tool for delivering high-speed internet access to large numbers of users. Its compatibility with standard Ethernet protocols and interfaces, along withits many benefits, has led to its widespread adoption in Asia and other regions. However, regular maintenance and upgrades are required to ensure network performance and security. EPON technology offers many benefits, including high bandwidth, low latency, and low power consumption. It is an efficient and cost-effective solution for delivering high-speed internet access to large numbers of users.

Keywords - Next generation networking, Optical fiber devices, Ethernet networks, Passive optical networks, Optical fiber networks.

PAPER ID: MCA_22 Seizure Prediction using Deep Learning and IoT

Shreya Bhamare¹, Sufiyan Khan², Sohel Shaikh³ ^{1,2,3}(*MCA*, VIVA Institute of Technology, University of Mumbai)

Abstract: In this paper, the design of a smart headband for epileptic seizure prediction is presented. Epilepsy is the fourth most common neurological disorder and affects people of all ages. Epilepsy is characterized by unpredictable seizures and can cause other health problems. The seizures in epilepsy may be related to a brain injury or a family tendency, but often the cause is completely unknown. This paper aims at creating a solution which can predict that a seizure is about to occur so a caregiver and/or the user can pause what they are doing and take appropriate preventative action. In this solution we have used an IOT Brain Sensing Headband, and Raspberry Pi Zero for processing. We also will use machine learning to train our neural net to predict the seizure before it occurs. The solution aids to create a cost effective solution to help Epilepsy Patients using IOT and Deep Learning.

Keywords: - Approximate Entropy, Deep Learning, Epileptic Seizure Detection, EEG, Headband, IOT, Raspberry Pi

PAPER ID: MCA_23

Addressing the power of low-code technology for business process transformation using low code platforms.

Pradnya Mhatre¹, Vivek Pandey², Vishal Singh³ ^{1,2,3}(*MCA*, VIVA Institute of Technology, University of Mumbai)

Abstract: The low-code stage empowers speedy age and conveyance of business applications with least work to write in a coding language and requires the most un-conceivable exertion for the establishment and design of conditions, and preparing and execution. With a quickly developing number of organizations, the utilization of low-code arrangements can be a critical stage forward in making fundamental business applications. This paper portrays the utilization of the Appain and other low code platforms for mechanizing business processes in assembling and manufacturing. Low code development stages give the innovation components to work with and mechanize the improvement of programming applications to help current undertaking needs and advance computerized change. The main focus of this paper is the existing characteristics of the emerging low-code domain and comparison of different low-code platforms and features each platform provides and how they differ from each other, their advantages and usefulness according to the business user, based on a theory-building research methodsthrough literature and other information sources review. Technology eliminates much of the formulation code, providing users with an interactive visualization program for modify business enterprise processes routine tasks in the same way that a flowchart would. Technology, and its part in the corporate world, is a constantly evolving

Keywords - Business application, Business innovation, Low-code, New innovation, Process automation

PAPER ID: MCA_24 Blockchain Based Identity Verification Systems

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Abstract : This research paper presents a comprehensive analysis of blockchain-based identity verification systems. It explores the benefits and challenges of implementing such systems and delves into the various technologies and protocols involved. The paper investigates the current state of identity verification in centralized systems and compares it to the decentralized nature of blockchain-based solutions. The study also highlights the role of smart contracts in automating and securing the verification process. The findings suggest that blockchain-based identity verification systems have the potential to provide a more secure, efficient, and transparent means of verifying an individual's identity compared to traditional, centralized methods. The paper concludes with recommendations for further research in this field and its potential impact on the future of identity verification.

Keywords – *Blockchain, Decentralization, Identity verification, Security, Smart Contracts, Transparency.*

PAPER ID: MCA_25

Business Analytics in Optimizing Business Performance.

Chandani Patel¹, Rahul Avinash Palkar², Daniel Sivaprasad³ ^{1.2.3}(MCA, VIVA Institute of Technology, University of Mumbai)

Abstract : Business analytics has emerged as a key factor in helping companies find new ways of doing things. Business analytics tools can be used to improve a company's services and products. There's a lot we don't know about how business analytics affect a company's ability to generate new ideas. Executives can anticipate trends, drive performance, view key performance metrics, and spot business opportunities by performing business analytics (BA) projects within their organizations. Our research methodology incorporates business analytics, a culture driven by data, innovation, and competitive advantage. This request is based on Sciencedirect.com and other public databases. The following databases were selected because they are well known and used by scientists around the world. Step by step and you are done. This study analysed the BA, BI, and BD studies from 2017 to 2020. Each publication counted contained one of the three key words in the abstract, title, or body. The final results were categorized by topic, type of material, field of expertise, frequency of key terms in each publication, and type of database.

Keywords – Big Data, Business Analytics, Data culture, Decision making, Organizational performance.
PAPER ID: MECH_01 DESIGN AND FABRICATION OF AUTOMATIC CEMENT PLASTERING MACHINE

Devendra Dorkar¹, Raj Nair², Siddhesh Neman³, Aakash Chauhan⁴ ¹²³⁴(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : The aim of this project is Designing and fabrication of automatic cement plastering machine. This project was driven by specific objective which are to examine for mortaring wall with good finishing surface of uniform thickness by the help of trowel mechanism. Various types of mechanical machine element such as; pulley system and lead screw mechanism is used for lifting mechanism, conveyor for plaster feeding. The main power source of this machine is AC motor were used for dc power with the help of SMPS (Switched Mode Power Supply). The modelled and fabricated AUTOMATIC CEMENT PLASTERING MACHINE must saves man power, raw material, cycle time and rate as compared to manual plastering. Additionally, this automatic cement plastering machine can be used as a finishing technology for both inner and outer walls made from bricks like masonry bricks, thermal bricks etc. This Plastering machine will save higher labour charge required for plastering and also improve the productivity and quality then conventional method. We eventually, the automatic cement plastering machine could play significant role in overall construction projects to reduce project net accomplishing time and increases the net profits.

Keywords - Chain, Conveyor, Designing, Plastering Machine, Pulley, Sprocket, Trowel.

PAPER ID: MECH_02 DESIGN AND FABRICATION OF PLASTIC BRICK MAKING MACHINE

Hrishikesh Nimbalkar¹, Jalpesh Solanki², Ashish Tandel³, Abhishek Tiwari⁴ 2.3.41(Department of Mechanical Engineering, VIVA Institute of Technology India)

Abstract : This paper aims at designing and fabrication of a Plastic Reinforced Brick Manufacturing Machine which brings down the plastic wastes in landfills which is primarily responsible for environmental pollution. Most common recyclable plastic products are beverage packaging widely used for water, soda, cool-drinks and juice, plastic bags and plastic containers used for packing food products. These recyclable plastic products are reinforced with the bricks. In the current scenario of energy crisis and fast depleting resources, availability of conventional building materials perennially in terms of quantity and quality, pose a hectic task for builders. Demand for building materials is going up tremendously dayby-day in view of the ever-increasing requirement of housing and habitat sectors. Such a crisis prompted us to reorient over selves so as to evolve a new technology to manufacture appropriate masonry products, using locally available low-cost materials. The concept of construction using green materials was aptly conceived in research realms so as to employ marginal materials and deploy unskilled laborers in massive production schemes. At the same time, considering earth as a sustainable material, there is a growing interest in the maximum use of its resources as modern ingredients in the construction sector.

Keywords - Plastic Reinforced Brick Manufacturing, Recyclable plastic, Plastic brick making machine.

PAPER ID: MECH_03 DEVELOPMENT OF HAND PRESS TO POWER PRESS USING QUICK RETURN MECHANISM

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Abstract: The power press is an important machine tool that is used to changes in the shape of metal. In ancient times metal was shaped manually using hand hammers. Later on, big hammers were used to press large quantities of metal at a time, or to press a thick metal work piece. the helper is specially required to swing the sledgehammer while smith positioned the workpiece. Then after the steam power and wind mills were utilized to the operate large steam hammers. Later on, due to the electrification is most of the power presses are now use electrical power or hydraulic power to obtain the required pressure. The flywheel is a heavy rotating mass which is placed between the power source and driven machine to act as a reservoir of energy. It is used to the store energy when the need of energy and energy is less for the deliver it when the need of energy is high. The current paper is focused on the analytical design of arm type of flywheel which is used for the punching press operation. They are analyzed to improve the performance and quality for press working operation. Cost and material choices are relayed along with a complete set of engineering drawings for the manufacture of the press. Testing and failure modes are the analyzed with an overall goal of customer safety in mind.

Keywords - Hand press, h-frame, design, die, power press, flywheel

PAPER ID: MECH_04 EXPERIMENTAL SETUP TO DIAGNOSE FAULTS IN PHOTO-VOLTAIC CELL

Afraz Shaikh¹, Paren Trivedi², Omkar Sawant³, Chirag Vartak⁴ ^{1,2,3,4}(Department of Mechanical Engineering, VIVA Institute of Technology, University of Mumbai, India)

Abstract: The rapid growth of photovoltaic (PV) systems around the world has brought with it the need for more effective methods to maintain the quality of these systems and diagnose defects. The photovoltaic module is a critical component of PV systems, but defects on these modules can be difficult to detect. These defects are often not visible to the naked eve, and special methods must be used to detect and diagnose them. Regular monitoring is essential to ensure the quality and efficiency of PV systems. Visual inspection and thermal detection methods are commonly used for this purpose. They involve frequent visits to the PV module to check for changes in appearance, such as browning, mechanical damage, hot spots, delamination, bubble formation, and crack detection. These changes in appearance can serve as Indicator of potential Failure. To increase the solar panel lifespan and overall efficiency of the PV system, it is important to accurately detect and diagnose any faults in the system. This requires the use of specialized equipment, such as thermal cameras and IR cameras, in addition to regular monitoring. Furthermore, accurate identification of the fault, and prompt repair would help to minimize system downtime, and increase the overall output and efficiency. In order to keep the system running smoothly, there is a need for frequent monitoring, and proper maintenance of the system.

Keywords - Defects detection, Faults detection, Maintenance, Photovoltaic (PV) systems, Regular monitoring, Reliability, Solar panel lifespan, Thermal detection.

PAPER ID: MECH_05 SEMI-AUTOMATIC GRAIN COLLECTOR AND PACKING MACHINE

Chinar Patil¹, Saarth Patil², Mayank Raut³, Vedant Vartak⁴ ^{123,4}(Department of Mechanical Engineering, Mumbai University, India)

Abstract : Grains like rice, wheat etc., after harvesting is spread up in an open area under the sunlight for the drying process. After drying, the grains must be collected, weighted, and filled manually in sacks by labour. This process requires lifting bulky grain-filled sacks repeatedly, which can be challenging for many people, injure their backs, and eventually result in lasting impairments. The key benefit of this idea is that it allows small farmers to ignore issues with labour availability and labour costs associated with gathering and storing it. Fabrication uses locally accessible materials like steel tubing. By moving the grain collector forward, the grains are collected through a hopper, and then it is lifted using the DC motor. When the hopper plate rotated by motor up to a certain angle, the grains are poured by hopper into the sack. Keywords - DC Motor, Grains, Hopper, Pulley, Rope, Shaft, Bearing.

PAPER ID: MECH_06 DEVELOPMENT OF TOOL CENTERING MECHANISM ON LATHE MACHINE FOR GRINDING PURPOSE

Ashokkumar Chauhan¹, Seon Dias², Ruchik Devgania³ Harsh Bhatt⁴ ^{1,2,3,4}(Department of Mechanical Engineering, VIVA Institute of Technology/ University of Mumbai, India)

Abstract : The report gives a detailed definition of tool centering mechanism on lathe machine for grinding purpose, and also identified the numerous advantages that are associated with the use of tool centering mechanism Increased production, cost savings, interchangeability and high accuracy of parts, a decrease in the need for inspection and quality control costs, a decrease in accidents as safety is improved, a significant amount of machine tool automation, ease of machining complicated and heavy components, and low dimension variability all contribute to the consistent quality of manufactured goods. Many industries need different types of fixtures depending on their use. This can be done by placing fixturing components like locators and clamps in the best possible places. Setting up the fixture for the component requires manual labour. Because loading and unloading the material takes a larger amount of time per cycle.

Keywords - *tool centering mechanism on lathe machine for grinding purpose, production increase, cost reduction, interchangeability and high accuracy of parts, reduction of the need for inspection and quality control expenses.*

PAPER ID: MECH_07 DEVELOPMENT OF EXPERIMENTAL SETUP FOR MACHINERY FAULT DIAGNOSIS OF MECHANICAL LOOSENESS AND BEARING DEFECT

Nawaz Sayyed¹, Omkar Salvi², Himanshu Rai³, Pranesh Padvekar⁴ ^{1.2,3,4}(Mechanical Engineering, Viva Institute of Technology/Mumbai University, India)

Abstract: Vibration measurements and vibration signal data analysis is extensively used for condition monitoring of ball bearings as their vibration signature tells important information about the defect's development within them. Time domain analysis of a vibration signal such as peak-to-peak amplitude, root mean square, Crest factor and kurtosis indicates defects in ball bearings. However, these measures do not specify the position and/or nature of the defects. Therefore, we need to use frequency domain analysis to determine the fault in the system. Each defect produces typical vibrations in ball bearings. Hence, examining the vibration spectrum may give information on the type of defects. In this we will design the experimental setup to monitor the condition of the ball bearing and the machine looseness. The fault in the system need to be measured for the sake of the machine life span in order to increase the production capacity, life span and higher efficiency of the machine. Therefore, the condition monitoring system is important to detect the fault and within the time limit the faulty component will be replaced before it damages to the whole machine.

Keywords: vibration, ball bearing, machine looseness, Time domain analysis, Frequency domain analysis, defects.

PAPER ID: MECH_08 IMPROVEMENT IN PRODUCTIVITY BY JUST IN TIME PHILOSOPHY

Chandan Pandey¹, Arunkumar², Ritwik Tiwari³, Chhaya Shamrao Patil⁴ ^{1,2,3,4}(Mechanical, Viva Institute of Technology/ Mumbai University, India)

Abstract : The aim of this report is to give a survey on how can a productivity be increased by using JIT philosophy, what is JIT philosophy, why it is needed and methods of JIT that reduces the waste and even pollution. The report focuses on increasing productivity by using JIT at conveyer manufacturing industry for development of a product with less wastage in less time. The report presents use of JIT for production upliftment over traditional way of increasing the productivity of product and development of innovative manufacturing system. The main objective of the this JIT is to aimed at reducing flow times within production systems, Also, suppliers and customers will have response times.

Keywords - Enterprise Resource Planning(ERP), Total Productive Maintenance(TPM), Total Quality Management(TQM), Toyota Production System(TPS), Just in Time(JIT).

PAPER ID: MECH_09 QUALITY IMPROVEMENT BY TQM TOOLS

Ritwik Tiwari¹, Chhaya Shamrao Patil², Chandan Pandey³, Arun kumar⁴

Abstract : The aim of this report is to give a survey on how can quality of any factory/ enterprise/ company can be change using simple TQM tools. This report helps to reduce the waste and improve the efficiency of the same. the report throws lights on use of TQM tools for the environment of manufacturing, energy conservation, development of product effectively. The report provides information regarding the use of different tools of TQM to from a better reliable and effective. The report also present the TQM technology used over traditional way as it promotes better design and development of innovative manufacturing system which highlights the main agenda of TQM that is improving the quality of system without increase in the cost or with least increase.

Keywords - Total Quality Management (TQM), Small And Medium Enterprise (SME), Critical Success Factor (CSF). Plan-Do-Check-Act (PDCA), Statistical Quality Control (SQC), Total Production Management (TPM), Just In Time(JIT), Economic Resource Planning(ERP),

PAPER ID: MECH_10 BOREWELL RESCUE RANGER DEVICE

Omkar Bari¹, Kunal Bhoir², Laukik Jahir³, Arun Maurya⁴ ^{1,2,3,4}(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : A technique for rescue task in bore well environment has been proposed. India is facing a distressed cruel situation where in the previous years a number of child deaths have been reported falling in the bore well. As the diameter of the bore well is quite narrow for any adult person and the lights goes dark inside it, the rescue task in those situations is a challenging task. Here we are proposing a robotic system which will attach a harness to the child using pneumatic arms for picking up. A teleconferencing system will also be attached to the robot for communicating with the child. As we all live in 21st century and see that how we are growing in science and technology, but some of the how there are still many problems that still arise in many rural areas of India. Once it was said that we can reach to moon and mars with the help of science and technology, but why are we failing to reach the child that has been fallen into the borewell. It involves a lot of energy and expensive resources which are not easily available everywhere and, in this process, we always need big space around the trapped bore that we can dig a parallel bore..

Keywords - *Borewell robot, teleconferencing, harness, rescue, borewell, child, bore, method, operation, device, trapped, children, small.*

PAPER ID: MECH_11 CFD ANALYSIS OF OPEN SUNROOF USING ANSYS FLUENT

Dhruv Kawli¹, Atharva Kulkarni², ,Gavin Mathak³, Nimish Gharat⁴ ^{1,2,3,4}(Mechanical Engineering, Viva Institute of Technology, Mumbai University, India)

Abstract : The report gives a detailed definition of tool centering mechanism on lathe machine for grinding purpose, and also identified the numerous advantages that are associated with the use of tool centering mechanism Increased production, cost savings, interchangeability and high accuracy of parts, a decrease in the need for inspection and quality control costs, a decrease in accidents as safety is improved, a significant amount of machine tool automation, ease of machining complicated and heavy components, and low dimension variability all contribute to the consistent quality of manufactured goods. Many industries need different types of fixtures depending on their use. This can be done by placing fixturing components like locators and clamps in the best possible places. Setting up the fixture for the component requires manual labour. Because loading and unloading the material takes a larger amount of time per cycle.

Keywords – tool centering mechanism on lathe machine for grinding purpose, production increase, cost reduction, interchangeability and high accuracy of parts, reduction of the need for inspection and quality control expenses,

PAPER ID: MECH_13

FABRICATION AND ANALYSIS OF PIN FIN TEST RIG

Arpit Gawad¹, Siddesh Meher², Pranit Mhatre³, Prathamesh Jangam⁴

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

Abstract : The purpose of this study is originally to give an overview of the Fins and description of recent enhancement of fin shapes that increase the heat transfer rate. The ideal or main purpose of this design is to ameliorate the performance of the fins using different figure and material. In recent times, advance bias induce and dissipate tremendous quantum of heat & power. For numerous cooling operations these bias has come a major challenge. Aged style heat cesspools were frequently inadequate for cooling newer, hotter handling factors. So for determining optimum fin figure, we've considered different shapes (rectangular, circular, tapered, conical, parabolic etc.) and different leg- fin shapes (combination of one of the shapes with different material), we've calculated heat transfer rate and optimized with all aspects to get advanced heat transfer rate. In the present work, trials have been conducted to find the temperature distribution within the leg fin made of different material and shapes and steady state heat transfer analysis has been carried using a finite element software ANSYS to test and validate results.

Keywords - Pin-fin, Ammeter, Voltmeter, Temperature Indicator, Dimmer Stat, D.P Switches.

PAPER ID: MECH_14 DEVELOPMENT OF MACHINE FOR PRODUCTION OF COAL FROM COCONUT SHELL

Kiran Jadhao¹, Aditya Nevrekar², Shubham Kangane³, Aman Kandolkar⁴ 1,2,3,4 (Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract: Coal is an essential need of every industry and on small scale, it is a mass source of energy but it is a fossil fuel so the availability of coal decreases day by day, hence we need to produce coal which is further used for the same purpose. This research describes coal which is made from coconut shells. Coconut is a natural product so it's not harming nature by producing toxic gases and ash. So, designing a small machine takes place which can convert coconut shells into useful coal is further used for burning purposes. In India, around 55% of energy is produced out of coal. The general types of coal used in industries are made up of fossil fuel, but the production of coal from fossil fuel is a very long process, so an adequate amount of coal is not easily available hence the cost of stone coal or conventional coal is high. Hence need to find some other options, where the designing of our mechanism takes place, to produce coal briquettes from coconut in a very compact/easy way. By doing some methods like burning, grinding (powder forming), molding, etc. This technology has greater potential and could be used in the future The briquette is used as an alternative energy source, especially as fuel in rural areas, and it supports reducing energy demand.

Keywords: alternative energy source, briquettes, coal, coconut shells, energy

PAPER ID: MECH_15 SOLAR FOOD CART

Chirag Patel¹, Akshat Rathod², Rohit Sapkal³, Sahil Surve⁴ ^{23,41}(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : The study focuses on the design, development, and evaluation of a solar powered food cart as its application on the street to facilitate the sale of street food to people from the local pedestrian traffic. In particular, the research aimed to design and develop a solar powered Food Cart which has its own electrical system; lighting system, convenience outlets, electric stove and an improve structures. The acceptability of the solar powered Food Cart is evaluated in terms of its aesthetic, functionality, reliability and safety. At present, solar energy conversion technologies face cost and scalability problems for a complete energy system. Solar energy must be absorbed, converted, and stored in a cost-effective manner to provide a completely efficient primary energy source. Solar energy is another possible source of power. Solar-electric modules or photovoltaics (PV) can be added to the roof surface, partially or fully powering food carts. The efficiency of applying PV depends on the type of food being cooed and the size of the kitchen. In all cases, solar energy can complete all of the energy requirements of a typical food cart.

Keywords- Depletion, Photovoltaics, Sustainable, Radiation, Renewable. Extensive.

PAPER ID: MECH_16 DESIGN AND FABRICATION OF SUSPENSIONS SYSTEM OF ATV

Jayesh Ranjankar¹, Yash Patil², Shrutika Juvale³, Vaishnavi Patil⁴ ¹²³⁴(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : All- Terrain Vehicle (ATV) are achieving wider response and significance in the present world, with their characteristic abilities of getting through any terrain along with the simple and compact assembly they rule the off-roading world. The main aim of this project is to make a safe and better performance ATV within the limited budget. In this Project we have done several analyses on suspension system and knuckle with different materials. The designated materials are mentioned below in their respective conclusion.

Considering drivers safety, the roll cage is designed as per the BAJA SAEINDIA 2022 Rulebook. In order to increase the performance of the vehicle. Material and Design Optimization of components has been done on the basis cost and overall weight of the ATV. Keywords–ATV, Optimization, Off-roading, Roll cage, SAE INDIA.

PAPER ID: MECH_17 AUTOMATED SYSTEM FOR MANUFACTURING DEFECTS DETECTION

Keyur Dattani¹, Mandar Koli², Mangesh Kini³, Prathamesh Dongre ⁴ ^{23,41}(Mechanical Engineering, Viva Institute of Technology/Mumbai University, India)

Abstract: Artificial intelligence (AI) is being increasingly used for quality inspection in manufacturing. Quality inspection is a critical process in manufacturing, as it ensures that products meet customer specifications and requirements. AI can be used for quality inspection in several ways, including visual, material, and dimensional. Visual inspection is the most common type of quality inspection, and AI can automatically identify product defects. Material inspection is used to identify defects in materials used in products, and AI can be used to automatically identify defects in materials. Dimensional inspection is used to identify defects in products that do not meet dimensional specifications. AI can be used to automatically identify defects in products that do not meet dimensional specifications. A quality inspection project using a visual inspection system may involve analyzing images to identify defects and classifying objects. The system may be used to inspect products during manufacturing or to check for damage during shipping. So, we are going to develop a project that does quality inspection of the product that is formed by the casting process thereby reducing the use of manpower, increasing the efficiency of the inspection, and speeding up the quality inspection process.

Keywords - Artificial intelligence, Dimensional inspection, Manufacturing, Quality inspection, Visual inspection

PAPER ID: MECH_18 DESIGN AND FABRICATION OF PLASTIC SEGREGATION

Tejas Chaudhari¹ Nirbhay Patil², Ishan Patil³, Shubham Panchal⁴ ¹²³⁴(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : Due to industrialization and urbanization the rapid rise in the volume and amount of waste and the disposal of it is becoming a huge problem that the world is facing today. One of the best ways out for this problem is to collect, sort and reuse or recycle this waste. This work proposes Segregation of Plastic machine which sorts waste materials into plastic and non-plastic using deep learning technique. Waste segregation process and techniques is applied on major materials such as paper, plastic, metal, and glass. The proposed design also consists of a prototype which acts as a real-time classifier. This system can reduce the human efforts by separating plastics from waste and also in keeping the environment clean. Keywords – Environment, Waste, Segregation, Recycle, Learning, Plastic, Design

PAPER ID: MECH_19 SANITARY WASTE DISPOSER WITH POLLUTION CONTROL FILTRATION

Nikhilesh Majalkar¹, Harsh More², Kunal Marade³, Saurabh Kini⁴ ^{1,2,3,4}(Mechanical Engineering, Viva Institute of Technology / Mumbai University India)

Abstract: The problem of improper disposal of menstrual waste is a major roadblock to our system in achieving the "Swachh Bharat" mission' and their goal to create a cleaner India. Our country generates approximately 137,483 tons of used sanitary napkins annually, or 377 tons daily. This waste is problématique for many reasons as improper disposal of menstrual waste is a major issue hence this project has been taken into consideration fix the issue of environmental hazards to some extent which is caused by throwing away the pads and tampons into dumping yards, as it triggers different health issues and the environnement as it takes around 400 to 800 years for pads and tampons to completely decompose. This project can be implemented on various sites such as public toilets, schools, hospitals, and hostels, which are very helpful in collecting waste napkins and tampons that would rather end up in landfills. Also, the proposed system focuses on making the fumes coming out of the chinney less hazardous to the environment by using a combination of different filters which have been put together in a chimney to reduce the carbon footprint to some extent and stop the burnt particles from entering directly into the atmosphère. As the burning process of pads and tampons produces CO and CO2 while burning.

Keywords - hygiene, incinerator, machine, napkin, sanitary.

PAPER ID: MECH_20 DESIGN AND FABRICATION OF PORTABLE BUSBAR MACHINE

Aman Pandey¹, Aditya Phatak², Ajay Kumar Singh³, Ratnesh Shrivastava⁴ ^{1,2,3,4}(Department of Mechanical Engineering, Mumbai University, India)

Abstract : The aim of the project is designing and fabrication of portable busbar bending, punching and cutting machine. This project was driven to ensure that the primitive objective which are to be examined for performing all three operations that is bending, punching, and cutting for busbar can be performed by the aid of hydraulic mechanism. The system would be consisting of all three dies that can be mounted on a portable workstation that can be assembled and dismantle easily, with power pact and electric motor and hydraulic systems the operations will be performed on the desired busbar. In the traditional industries, these operations were performed manually one after another in a synchronous manner and for each operation worker must commute to the specific location to perform it. The benefit of this process is that all the three operations will be performed at a same time in a one machine. We found that we can built it in a cheaper rate without sophisticated design modules and complications.

Keywords - Designing, Multi-functioning operation, Portable machine, Congregate & Disassemble

PAPER ID: MECH_21 DESIGN AND FABRICATION OF SOLAR POWERED MEDICAL REFRIGERATOR

Bhavesh Kotkar¹, Shubham Gogavale², Rahul Bhuvad³, Aaditya Mane⁴ ¹(Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract : The medicine and vaccine require to store in the refrigerator the continuous provision of electrical energy is required so that their efficiency is not affected. This represents an important problem for rural areas where there is no continuous electrical energy. In this case, design a solar energy system for refrigeration of medicines to be used in rural towns. The primary objective of this project is to create a solar powered portable medical Refrigerator that can achieve the ideal temperature for the storage of medications. In the design, a refrigerator operating under the principle and vapour compression refrigeration system will be fabricated. The device was powered with solar energy through the use of solar panels to charge a lead acid battery. The device was able to completely run on solar energy. The refrigerator maintains a temperature of 2 to 6° c. In solar powered refrigerators they are used inverter to convert DC to AC power but in rural areas inverter is very costly so by DC power is used to run compressor and it will reduce cost of inverter and energy efficient. **Keywords** - cooling, Rural area, solar panel, Solar Refrigerator, vaccine.

PAPER ID: MECH_22 DYNAMIC ANALYSIS OF THERMOSYPHON PLANT

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

Abstract : This Paper deals with Study, Design, Development and Analysis of Thermosyphon Cooling system implementing at industrial plant as per required condition with to achieve high heat transfer efficiency. The Thermosyphon (Thermosiphon) works on principle of natural convection variation in density of water, and hence does not use a pump unlike forced convection cooling system. The Aim of this project to establish, redesign, efficient Air cooling thermosyphon system to overcome the problem at particular industrial plant where that place is lacking of any resources of water supply and highly corrosive area where If any kind of leakage present in the system that can be lead to hazard situation. Thermosyphon system is simple, cost effective system and had been used in various applications.

Keywords - Cooling Coil, Heat exchanger, Thermosyphon pot, Mechanical seal, Natural convection

PAPER ID: MECH_23 PREDICTION OF VELOCITY PROFILE FROM A PERFORATED TUBE UNDER SUBMERGED CONDITION & ITS EFFECT ON THE ADJACENT CYLINDER

Vyankatesh Bhingude¹, Sahil kini^{2,} Dhaval More³, Sanket Nandekar⁴ ^{1,2,3,4}(Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract: The velocity profile from a perforated tube under submerged conditions is affected by several factors, including the type of perforation, the size of the tube, the orientation of the perforation, the fluid properties, and the flow conditions. All these factors will affect the shape of the velocity profile and the magnitude of the velocity. The perforation size and orientation will also affect the direction of the velocity. The viscosity, as well as density of the fluid, as well as density of the fluid will be impacted by the fluid's properties, which will then have an impact on flow resistance and pressure decrease across the perforation. The flow conditions will determine Reynold's number, which is a dimensionless parameter that characterizes the flow and is used to predict the behavior of the fluid. The flow rate through a perforated tube is measured by filling the tube with water and then measuring the time it takes for the water to flow out. The velocity profile of the water flowing out of the perforated tube is then determined by measuring the speed at which the water flows at different points along the tube. The effect of the velocity profile on the adjacent cylinder is then determined by measuring the pressure drop across the cylinder. There are many ways to create a velocity profile from a perforated tube.

Keywords - Perforated Tubes, Computational Fluid Dynamics (CFD), Velocity, Reynold's number, Cylinder, Ansys Fluent, Analysis.

PAPER ID: MECH_26 THE EFFECT OF ROAD SAFETY DEVICE WITH AUDITORY ALERTS

Surme Maninder Singh¹, Shaikh Mohd Faisal², Tare Pratik³ ^{1,2,3,4}(Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract : The purpose of this study was to examine a newly designed road safety device. It is a portable device that provide drivers with instant information about driving environment and can act as a data logger. The device has a global positioning system (GPS) receiver so that it can determine the vehicles location and speed approximately every second. If the speed limit Exceeded in addition the device will provide auditory alerts when the driverapproaches potential hazard (eg. ,a Cross walk)

Keywords – portable device, data logger, global positioning system, auditory alerts.

PAPER ID: MECH_28 FABRICATION OF COLD STORAGE FOR THE FISHING BOAT

Kaustubh Rane¹, Suyash Salunkhe², Siddhesh Sawant³, Tejas Tade⁴ ^{1,2,3,4}(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : The results of this study inform the comparison of cycle performance including heat rejection rate, cooling capacity, COP, and pressure-enthalpy diagram. The main conclusion is that type of refrigerant that are simulated can produce high COP which is useful for handling the cooling load that is later available. The report on this study will be used further to design a fish-storage box. This paper gives overview of cold storage, its history, how it works, advantages and disadvantages, and its implementation. Cold storage is an important technology which is basically used for maintaining the quality of the produce and avoid the deterioration of the same. Nowadays cold storage is gaining importance because of its positive result of avoiding spoilage of harvested produce. This paper focuses on the compact design of the cold storage which will be helpful for the local fisherman's on small scale. It's basically designed for the fisherman's who can minimize the total weight of ice blocks in the fishing boat and instead of that afford initial investment in refrigeration system and wants to store more mass of seafood and to gain profit from it. Cold storage consist of direct evaporative cooling system and supplemental refrigeration, Seafood, Storage.

PAPER ID: MECH_29

DESIGN AND FABRICATION OF MINI HYDROELECTRIC SYSTEM FOR ELECTRICITY GENERATION IN RURAL AREA

Suraj Bhogade¹, Milind Dubala², Ajay Gorwala³, Vijay Gorwala⁴ ^{1,2,3,4}(Department of Mechanical Engineering, Viva Institute of Technology/University of Mumbai, India)

Abstract : The contribution of renewable energy in the global electricity production is 26.2% of which 15.8% is the share of hydropower (REN21, 2019). Hydropower is. This is the reason that growth rate of large hydropower is reduced. But unlike solar and wind, hydro is 24X7 available, reliable and predictable source of energy and therefore instead of out-looking this source, it is better to utilize the water energy more effectively. In the present study, an attempt has been made to savonius hydrokinetic turbines with the aim to develop hydropower as low head turbine.

Keywords - low head, hydrokinetic, savours turbines, hydropower.

PAPER ID: MECH_30 DESIGN OF COLD STORAGE FOR THE FISHING BOAT

Omkar Padave¹, Bhavesh Patil², Sahil Patil³, Kashish Shah⁴ ¹²³⁴(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : The results of this study inform the comparison of cycle performance including heat rejection rate, cooling capacity, COP, and pressure-enthalpy diagram. The main conclusion is that type of refrigerant that are simulated can produce high COP which is useful for handling the cooling load that is later available. The report on this study will be used further to design a fish-storage box. This paper gives overview of cold storage, its history, how it works, advantages and disadvantages, and its implementation. Cold storage is an important technology which is basically used for maintaining the quality of the produce and avoid the deterioration of the same. Nowadays cold storage is gaining importance because of its positive result of avoiding spoilage of harvested produce. This paper focuses on the compact design of the cold storage which will be helpful for the local fisherman's on small scale. It's basically designed for the fisherman's who can minimize the total weight of ice blocks in the fishing boat and instead of that afford initial investment in refrigeration system and wants to store more mass of seafood and to gain profit from it. Cold storage consist of direct evaporative cooling system and supplemental refrigeration, Seafood, Storage.

PAPER ID: MECH_31 DESIGN AND FABRICATION OF AUTOMATED SHOPPING CART SYSTEM

Raj Sawant¹, Shubhamraj Prasad², Vijay Prasad³ ^{1,2,3,4}(Department of Mechanical Engineering, Viva Institute of Technology, India)

Abstract : Retailers are often interested in low cost mechanisms to maintain stocks as well as for tracing products across the supply chain in an efficient and effective manner. In addition, shoplifting is another concern face because of the lack of effectiveness in product tracing technique such as "barcode" used in retail supermarkets. "Amazon Go" a smart retail layout which was introduced by Amazon, to address above issues was found to be inefficient due to the over dependency of system based on historical purchased patterns of consumers. In this study, we propose a low-cost, robust, passive UHF RFID based shopping trolley system which allows tracing and processing shopping data in real time. The UHF antenna mounted shopping trolleys are defined "Smart Trolleys" while shopping items are tagged using UHF RFID tags with unique identification codes.

Keywords - Branch Line Coupler, Circular Polarised Antenna, RSSI, Smart Shopping Trolley, UHF RFID

PAPER ID: MECH_32 PROPOSED CONCEPT OF FABRICATION OF POLYPROPYLENE BAG MACHINE FROM USED PPE KIT

Dhruv Patil¹, Vedant Shah², Satyam Singh³, Vedant Thakur⁴ ^{123,4}Mechanical Department, Viva Institute of Technology, India

Abstract : This project research includes the introduction to the basic theories of the project namely plastic waste management and available technologies. Due to covid pandemic use of PPE kit has increased extensively this directly increased the plastic waste generated. There are several case studies on how to manage or recycle plastic waste, PPE kit is one of the major contributors to it. There are many problems faced by the society to execute the available waste management method. Few objectives are set for the project in order to resolves the problems. The methodology that we propose to follow for the project includes market survey and literature review on the project topic, problems solving, 3D modelling of the prototype, assembly, and testing.

Keywords – PPE kits, Covid, Polypropylene

PAPER ID: MECH_33 DEVELOPMENT OF EXPERIMENTAL SETUP FOR MACHINERY FAULT DIAGNOSIS OF MISALIGNMENT AND UNBALANCE

Anas Shaikh¹, Sandeep Rahate², Hritik Rane³, Darshil Rathod⁴ ¹(Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract: The traditional industry is shifting towards the 'industry 4.0' that incorporates automatic fault detection and correction. Industry 4.0 also includes online condition monitoring to make maintenance decisions based on the health of a single machine. Vibration monitoring is one of the primary techniques for the condition monitoring of machines. Shaft misalignment and rotor unbalance are the primary sources of vibration in machines. We will focus on identifying fault conditions using measurements of vibration taken from rotary machines. Detection of sources of vibration will be made based on the amplitude and phase relationships of the vibrations of machine parts. This study describes a model-based technique for fault diagnosis of a system. Using the residual generation technique, residual vibrations are generated from experimental results for a rotating system subjected to misalignment and unbalance. we need to use frequency domain analysis to determine the fault in the system. Each defect produces characteristic vibrations in rotating machines. Hence, analyzing the vibration spectrum can provide insight into the types of faults. The outcomes obtained using the method are evaluated for misalignment and rotor unbalance

Keywords: vibration, industry 4.0, Time domain analysis, Frequency domain analysis, defects.

PAPER ID: MECH_34 DESIGN AND ANALYSIS OF ELECTROMAGNETIC BRAKING SYSTEM FOR WIND TURBINES

Mohd Saad¹, Mishra Akash², Bogati Gyanendra³, Maurya Lav⁴ ¹(Mechanical Engineering, Viva Institute of Technology/Mumbai University, India)

Abstract: In this paper we present a design and analysis of an electromagnetic braking system braking system for wind turbines to control the rotational speed of high RPM shafts in extreme wind conditions. The multi-disciplinary approach to the design and analysis, incorporating both thermal and structural analysis, has allowed for a comprehensive evaluation of the system's performance and efficiency. The results of this study have demonstrated the feasibility of using eddy current braking to control the rotational speed of wind turbines and have shown that the proposed system has the potential to provide a reliable and efficient solution for sustainable energy systems. Further research is needed to validate the performance of the system under various operating conditions and wind speeds.

Keywords- Electromagnetic braking, Wind turbine, Transient thermal analysis, Static structural analysis.

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PAPER ID: MECH_35 SMART SAFETY GOGGLES

Ashutosh Patil¹, Vinit Patil², Viraj Pendurkar³, Chinmay Vartak⁴

Abstract: We the group of engineering have analysed a major problem happening around which is due to drowsy driving. This is the major issue where human lives are harmed rather many are losing their lives. Considering all this problems and analysing the scenario we tried to find out a solution for it. And through this project we can minimize the number of accidents and also reduce the loss of human lives. We are trying to develop an system called as "Smart Safety Goggles" integrated on a goggle consist of some components mounted on it such as IR based eye blink sensor which will sense the moment of human eye, Arduino UNO in which commands will be feeded, Sprayer which will spray water, Vibrator, Buzzer etc. Which can minimise the percentage of accidents caused due to the drowsy driving. And also their is no such system available in the market.

Keywords - IR Sensor, Arduino, Drowsiness

PAPER ID: MECH_36 AUTOMATION IN SWAGING MACHINE

Bharbhare Sachine Kisan¹, Chikhale Omkar Vishwanath², Dharshe Siddhesh Sunil³, Dhas Suyash Laxman⁴

123.4 (Department of Mechanical, VIVA Institute of Technology, Mumbai University, India)

Abstract : The aim of the project is to designing and fabrication of full automation. This project was driven so as to ensure that the primitive objective which are to be examined for performing swaging process can be performed by the aid of pneumatic system. The system would be consisting of main swaging machine head, pneumatic cylinders, feeder system for hollow round shape pipes, motor and channel sliders workstation that can be assembled and dismantle easily. In the traditional industries, these operations were performed manually one after another in a synchronous manner and for each operation worker have to commute to the specific location to perform it. This was indeed a time-consuming job and not efficient for onsite operations. We surveyed some of the modern industries who are already working on this project but found that all of the machines are imported (China and German make) and which gave us the reason to work on this machine, because after analysis we found that we can built it in a cheaper rate without sophisticated design modules and complications. Our project deliberately stressed upon the objective of satisfying one specific operation so that we can ease the use of machine for industrial purpose. This project could play a significant role in operation industry to reduce net accomplishing time and increases the net profits by the integrating the above-mentioned processes.

Keywords – Metal Forming, Designing & Fabrication, Pneumatic Sliding Bed, Auto-Feeder, Stepper Motor.

PAPER ID: MECH_37 ANALYTICAL AND EXPERIMENTAL INVESTIGATION OF COMPOSITE BRICK

Aditya Ahire¹, Sunil Kallepawar², Amaan Ahmed Momin³, Onkar Helonde⁴ ¹²³⁴(Mechanical Engineering, Viva Institute of Technology/ Mumbai University, India)

Abstract: In this conventional Brick made up soil, clay and sand, etc. has been selected. The design and fabrication of brick sample made up of conventional and selected composite material will be carried out, their analytical and experimental analysis for selected components is to be done by using ANSYS software and laboratory tests. At last, the comparative analysis between conventional and Composite Bricks on the basis of various characteristics has been discuss.

Keywords – Analytical, ANSYS, Brick

PAPER ID: MECH_38

PORTABLE BATTERY OPERATED SUGARCANE JUICE EXTRACTION MACHINE

Gupta Anuj¹, Gawand Shubham², Gupta Aniket³

123.4 (Mechanical, Viva Institute of Technology / Mumbai University, India)

Abstract : The aim of this project is to Design and fabrication of a Portable Battery operated sugarcane juice extracting machine. At present, several methods are available in market to extract juice from sugarcane fromconventional to modern machines. Existing sugarcane machines are heavy, expensive and require human effort to operate them. Hence the main objective of the project is to construct and test sugarcane juice extracting machine which reduce human involvement (manpower), cost effective with high efficient in working. This includes experimental study of construction and working of pre-existing manually operated sugarcane juice extractor machine, arrangement of rollers in machine to achieve maximum efficiency output. To work on obtain User-friendly, Safe and Easy to use, Automatic functioning Parameter, as a result to Develop Portable, Cost effective, Least maintenance machine to serve hygienic, fresh sugarcane juice.

Keywords - Sugarcane juice extractor, portable, battery operated, sugarcane machine.

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PAPER ID: MECH_39 SMART WHEELCHAIR

Aatif Bilal Haju¹, Amarjeet Ramchandra Kannojia², Sahil Sanjeev Mathkar³,

Sujith Saji John₄

123.4 (Viva Institute of Technology/ Mumbai University, India)

Abstract: Every wheelchair is manually operated to move in and around. However, the Smart Wheelchair brings independence and effortlessness to a person. A Smart Wheelchair is a mechanically controlled device designed to have self-mobility with the help of the user command using head/hand effortlessly. This reduces the user's effort to drive the wheels of the wheelchair. Furthermore, this provides an opportunity for physically impaired persons to move from one place to another. This smart wheelchair will be fully automated and will have a range of 20 km on a single charge and will be able to climb stairs independently without any attachments, this will make the physically challenged person move independently without any assistance.

Keywords- Automated, Disability, Battery, Motor, Assistance, Mobility, Track mechanism.

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Virar, Maharashtra, India Plot no133 Shantivan Co-op Hsg Soc, Padman Sar Virat Nagar, Virar East, Virar, Maharashtra 401307 Lat 19.447451°

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