

ID : ICRTET-EEE201

Optimal Location of IPFC for Improving Power System Performance

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Abstract

This paper presents a new scheme based on cuckoo search algorithm (CSA) for enhancing the performance of interline power flow controller (IPFC) under multilines transmission for reducing the transmission line congestion to a great extent. Optimal placement of IPFC is done by subtracting line utilization factor (SLUF) and CSA-based optimal tuning. The multi objective function consists of active power loss, security margin, bus voltage limit violation and capacity of installed IPFC. The multi objective function is tuned by CSA and the optimal location for minimizing the congestion in transmission lines is obtained. The simulation is performed using MATLAB for the case study using an IEEE 30-bus test system. The performance of CSA has been studied under different loading conditions and compared with two other optimization techniques such as particle swarm optimization (PSO) and differential evolution algorithm (DEA). The result shows that the proposed CSA outperforms the other two methods and it best suits the power system security.

Keywords : congestion management; cuckoo search algorithm; Interline power flow controller

ID : ICRTET-EEE202

OPEN-CIRCUIT FAULT-TOLERANT CONTROL FOR OUTER SWITCHES OFFIVE-LEVEL RECTIFIERS IN WIND TURBINE SYSTEMS

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Abstract

A five-level converter which is used as the power converters for wind turbine systems on account of their merits, for example, high effectiveness, low-current total harmonic distortion, and furthermore low collector-emitter voltage. Interior permanent magnet synchronous generators (IPMSGs) is actualized as the generator in the wind turbine systems which is inferable from their merits of effectiveness and size along these lines in the wind turbine systems may substance of the five-level converter and the IPMSG, fault-tolerant controls for an open-circuit fault of switches have been set up and it is utilized to enhance unwavering quality. In this paper which is centers around the open-circuit fault with the external switches (Sx1 and Sx4) in five level rectifiers (both impartial point cinched and T-type) which are associated with the IPMSG. And further more what's, the impacts of Sx1 and Sx4 open-circuit faults which are dissected, and it is rely on there examination, a tolerant control is proposed. The proposed tolerant control is maintains with the ordinary operation for the sinusoidal currents under the open-circuit fault with external switches by the expansion with the remuneration incentive to the reference voltages.

Keywords: Five-level converter, wind turbine systems, Interior permanent magnet synchronous generators (IPMSGs), Fault-tolerant controls, impartial point cinched, T-type, open-circuit fault.

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ID : ICRTE-EEE203

Analysis of UPFC Impact on Transmission Line Performance

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Abstract

This paper presents an analysis of the dynamic operation of unified power flow controller (UPFC). A two machine-double line power system model is considered for the study. The main objective is to achieve effective independent control of real and reactive power flows with zero dynamic interactions. Towards achieving the objective, PI controller with abc-dqo transformation and space vector pulse width modulation (SV-PWM) technique based scheme is carried to design UPFC controller. The proposed scheme is fully validated through digital simulation. The simulated results show that the shunt converter provides good voltage regulation and series converter influences power flow over the transmission line together with power oscillations damping. Further the results illustrate how the UPFC contributes dynamically to a faster recovery of the system to the pre-fault conditions.

Keywords - Flexible Alternating Current Transmission System (FACTS), Pulse Width Modulation, Space Vector, Unified Power Flow controller, PI, VSC, STATCOM, SSSC.

ID : ICRTE-EEE204

Renewable energy source fed Switched-Z-Source Inverter for EV applications

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Abstract

In this paper, a new topology Renewable energy source (Photo Voltaic(PV)) based Switched-Z-Source Inverter For EV applications. This inverter in comparison with the conventional Z-source inverter needs higher number of active elements, lower number of capacitors and inductors. Reduction of harmonics in voltage and current, weight, size and cost are the main advantages of the proposed topology. In addition, this inverter is able to solve the problem of short circuit across the inverter leg and consists of higher value of voltage gain when compared with the conventional switched boost inverter. Moreover, the developed topology of the proposed inverter based on switched inductor cells is introduced. Investigated and evaluate the performance of the proposed inverter in different operating modes. The proposed topologies are also compared with the conventional Z-source inverters in view of number of elements; the voltage gain and capability of fault tolerance. Finally, emulate the accuracy performance of the proposed inverter is reconfirmed by using the simulation results in MATLAB/SIMULINK software


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ID : ICRTET-EEE205

Speed control of sensor less BLDC motor with two side chopping PWM

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Abstract

The Brushless Direct Current (BLDC) motors are one of the motor types rapidly gaining popularity. BLDC motors are used in aerospace applications, medical field, industrial automation equipment and instrumentation. As the name implies, BLDC motors do not use brushes for commutation; instead, they are electronically commutated. This paper proposes a new optimized sensorless drive for speed control of BLDC motor, which is based on back-EMF zero crossing detection (ZCD) of only one phase voltage of BLDC motor. This commutation technique of BLDC motor significantly reduces sensing circuits and cost of motor drive. The effectiveness of proposed speed control for sensorless technique is verified through simulation. Two side chopping PWM technique with a PI duty cycle controller is used for speed control.

Keywords – BLDC, PI controller, PWM, ZCD, VSI

ID : ICRTET-EEE206

Integration and Modelling of Renewable Energy Sources for DC Microgrid Application

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Abstract

This Paper presents a dynamic modeling of a DC Microgrid which has a Solar and Wind as a Distributed Energy Sources (DES). A Multi Port DC –DC converter is used to integrate the renewable sources to the DC bus. A Permanent Magnet Synchronous Generator (PMSG) based Wind energy conversion system (WECS) is used with a Maximum power point tracking so that it can extract high wind energy below the rated speed of the wind. Both the Photovoltaic (PV) and WECS is integrated to a common bus with an Energy Storage system to support the DC bus based on the load requirement. The performance analysis of proposed architecture is validated in the MATLAB/Simulink software.

Keywords—DC Microgrid, PMSG, Photovoltaic, Maximum power point tracking, Perturb and Observe.


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ID : ICRTET-EEE207

A transformerless hybrid series active filter for Power Quality Improvement in electric vehicles

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Abstract

A transformerless hybrid series active filter to enhance the power quality in single- phase systems with critical loads. This paper emphasis on the energy management and power quality issues related to electric transportation and focuses on improving electric vehicle load connection to the grid. The control strategy is designed to prevent current harmonic distortions of nonlinear loads to flow into the utility and corrects the power factor of this later. While protecting sensitive loads from voltage disturbances, sags, and swells initiated by the power system, riddled of the series transformer, the configuration is advantageous for an industrial implementation. This polyvalent hybrid topology allowing the harmonic isolation and compensation of voltage distortions could absorb or inject the auxiliary power to the grid. Aside from practical analysis, this paper also investigates on the influence of gains and delays in the real-time controller stability. The simulations and experimental results presented in this paper were carried out on a 2-kVA laboratory prototype demonstrating the effectiveness of the proposed topology.

Keywords — *Current harmonics, electric vehicle, hybrid series active filter (HSeAF), power quality, real-time control.*

ID : ICRTET-EEE208

A COMMON-MODE VOLTAGE REDUCTION BASED INVERTER FOR ELECTRIC DRIVES

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ABSTRACT

This paper presents a modified two-level three-phase inverter for the reduction of the leakage current. With respect to a traditional two-level inverter, the proposed solution reduces the common-mode voltage, both in amplitude and frequency. Between the DC source and the traditional three-phase bridge, two active DC-decoupling devices and a voltage-clamping network have been added. A dedicated control strategy was developed adopting a modified Space Vector PWM modulation, oriented to the reduction of the common-mode voltage. Simulations showing the good performance of the solution are presented. Preliminary and experimental results are presented using the simulation results in MATLAB/SIMULINK software

Key words- *Three-phase, inverter, drive, H8, PWM, space vector, common-mode voltage, leakage current.*

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Geo-Spatial Technology Based Integrated Ground Water Resource Studies in Telangana State-A review

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Abstract— In recent times the geospatial technologies such as remote sensing (RS) and geographic information system (GIS) are playing vital role in assessing, monitoring and conserving groundwater resources. The use of geospatial technology is constantly rising for the water resource management. With the increasing World's the availability of fresh water for human needs is predicted to be a serious limiting factor in the future. It is estimated that only 10.5million km³ of freshwater is available on Earth, out of which only one-third of the total freshwater is stored in the form of groundwater. If this groundwater is properly located, and managed carefully being a renewable resource the groundwater could be sustained forever. This paper offers a study on the assessment of groundwater potential zones in the Telangana district of India using geospatial techniques. The results derived from the literature study can be used to plan and manage these available groundwater resources in order to meet the growing regional demand for fresh water.

Keywords— GIS, geospatial, ground water, Telangana

A critical review on early-age cracking in concrete

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Abstract — The concrete is the most commonly used versatile building material which has been extensively used for the wide range of residential and industrial applications. It is a combination of three basic components: cement from the Portland, water and aggregates (gravel, rock or sand). The incorrect component mixing, unsuitable humidity and variations in the temperatures may lead to poor quality in concrete. The early-age cracking in concrete is a major problem in structures under working conditions, which is mainly depending on the nature of the material, hydration intensity, treatment atmosphere and healing conditions. This comprehensive review article will assist in identifying the common causes and the effects of early-age cracking in concrete and, suggesting the possible preventive measures. Furthermore, the various types of early-age cracking, variables causing cracks such as temperature, thermal expansion, and tensile strength; simulation and identification of early-age cracking.

Keywords— Concrete, early-age, cracks, shrinkage, creep.


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Analysis and capacity based earthquake resistant Design of multi storied RC frame

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Abstract- Earthquakes in different parts of the world demonstrated the disastrous consequences and vulnerability of inadequate structures. Many reinforced concrete (RC) framed structures located in zones of high seismicity in India are constructed without considering the seismic code provisions. The vulnerability of inadequately designed structures represents seismic risk to occupants. The main cause of failure of multi-storey multi-bay reinforced concrete frames during seismic motion is the soft storey sway mechanism or column sway mechanism. If the frame is designed on the basis of strong column-weak beam concept the possibilities of collapse due to sway mechanisms can be completely eliminated. In multi storey frame this can be achieved by allowing the plastic hinges to form, in a predetermined sequence only at the ends of all the beams while the columns remain essentially in elastic stage and by avoiding shear mode of failures in columns and beams. This procedure for design is known as Capacity based design which would be the future design philosophy for earthquake resistant design of multi storey multi bay reinforced concrete frames. The aim of this project work is to present a detailed worked out example on seismic analysis and capacity based design of four-storey reinforced concrete frame building.

Keywords: Component, design, vulnerability

Critical Comparative Analysis of Ordinary and Moment Resisting Framed Structure with Shear Walls under Dynamic Loads

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Abstract- Due to growth in population spacing in India is wanted, mainly in town regions. Also because of growth inside the transportation and protection measure the FSI (Floor Spacing Index) in Indian towns is growing extensively. Structural engineers inside the seismic regions across the world often face the pressure to design excessive rise homes with stiffness irregularities, no matter the fact that they apprehend those homes are inclined below seismic loading. Today's tall houses are becoming an increasing number of slim, primary to the possibility of more sway in assessment with earlier excessive rise homes. Improving the structural systems of tall buildings can manipulate their dynamic reaction. With more appropriate structural workplace paintings collectively with shear partitions and tube structures and stepped forward cloth homes.

Shear walls play a very essential function in retaining the stiffness and tension of the shape. Stiffer structures have higher natural frequency or resonance. Hence, the overall performance in the route of lateral

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dynamic loading the shape stays intact. Depending upon the frequency and the and the depth of the seismic hobby the techniques to growth can also moreover use one or the alternative technique or a couple of strategies combining to shape a stiffer and rigid shape which could resist more seismic masses. In the existing observe a 36 storey excessive upward push constructing, there may be no surprising change in plan because of the reality if there can be any unexpected change it may result in the stiffness/torsional irregularities of building if a small seismic forces or each other a whole lot less rate horizontal stress strike the form. The optimization strategies which may be used in this task are firstly considered the size of shear wall is same inside the direction of building after which evaluation is finished from the stop result the failed shear wall dimensions are expanded to face up to the entire shape, in this way the optimization became finished for huge style of time till the entire shape includes robust to stand as lots because the forces. In this gift venture ETABS software has been achieved to layout and optimize shear wall in conjunction with 2nd resisting frames. The form has been designed in vicinity IV conditions with medium soil.

Keywords- Stiffness, shear wall, Seismic loads, ETABS

Behavioural study on self-compacting concrete

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Abstract- This Case Study Report addresses experiments and theories on Self-Compacting Concrete. First, the features of "Japanese and Chinese Methods" are discussed, in which the packing of sand and gravel plays a major role. Here, the arrange & fill of all solids in the concrete mix serves as a process for the development of new concrete mixes. Mixes, consisting of slag blended cement, gravel (4 – 16 mm), three types of sand (0 – 1, 0 – 2 and 0 – 4 mm) and a polycarboxylic ether type super plasticizer, were developed. These mixes are extensively trail, both in fresh and hardened states, and get to know all practical and technical requirements such as medium strength and low cost. It follows that the particle size distribution of all solids in the mix should follow the grading line as presented by And reason and Andersen. Furthermore, the packing behaviour of the powders (cement, fly ash, stone powder) and aggregates (three sands and gravel) used are analysed in detail. It follows that their loosely piled void fraction are reduced to the same extent (23%) upon vibration (aggregates) or blend with water (powders). After a long time, the paste narrow marks of the powders are used to obtain something a linear relation between the deformation coefficient and the product of Blaine value and particle density.

Keywords-Self Compacting Concrete; Particle size distribution; Mixture proportioning; Workability; Engineering properties.

Laboratory Study of Black Cotton Soil Blended With Copper Slag and Fly-Ash

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Abstract- Expansive soil is one of the major soil deposits in India they exhibit high swelling and shrinkage when exposed to changes in moisture content and hence have been found to be most troublesome from engineering considerations. So there is a need to stabilize these soils when they are used for construction. In this regard, the expansive soil properties are found out. To this soil, as a first consideration, stabilized with copper slag adding at an interval of 5% reaching up to 30%. In second consideration, fly-ash is selected as a stabilizing agent to stabilize the expansive soil at an interval of 2%, reaching up to 10%. In the last consideration, sample of expansive soil with 30% copper slag is taken to be stabilized with fly-ash at an


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interval of 2% reaching up to 10%. Finally regression analysis for these test results is carried out.

Keywords: Black cotton soil, Copper slag, Fly-Ash, CBR.

Study of properties of natural fiber reinforcement concrete made with coconut shell

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Abstract-Utilization of agricultural waste material in concrete enhances the properties of concrete. To study this phenomenon concrete made of fly ash, coconut fibre for M40 was done and evaluated. Cement is substituted with stone dust by 10%, 20%, and 30%. Coconut shells are replaced in the place of coarse aggregate. The breadth of coconut fiber will vary from 0.25 to 1.0 cm. The present study has illustrated that addition of coconut fiber and coir fiber to concrete enhances the properties of concrete as partial replacement. In this study, M 40 grade of concrete was produced by replacing coarse aggregate by coconut shell. Twelve cubes were casted and their compressive strength is evaluated at 7, 14 and 28 days. The compressive strength of concrete reduced as the percentage replacement increased. Concrete produced by 0%, 5%, 10%, 15% replacement attained 28 days compressive strength of 37.2, 32, 33.11, 35.67, N/mm² respectively.

Keywords: Coarse aggregate, Coconut shell, compressive strength

Bearing capacity of footings on sand

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Abstract- Soil mechanics engineering is one of most important aspects of civil engineering involving the study of soil, its behavior and application as an engineering material. Good soil engineering embodies the use of the best practices in exploration, testing, design and construction control, in addition to the basic idealized theories. With increasing load on soil due to construction of multi storied buildings there is a need to construct footing by conducting a test of their model in laboratory on the soil over which the foundation is to be laid.

Sand is one of the soils over which foundations are laid, so it is necessary to conduct experiments by placing different model footings over sand and find out their ultimate bearing capacity and based on these values, it can be incorporated on to the field and foundations can be laid. Square footings of different sizes are taken and model testing of these footings are conducted and the ultimate bearing capacity of different footings are found and on the basis of these values foundations are laid on sandy soils. these values can also be compared with theoretical analysis of Terzaghi and Meyerhof's to check out the difference in values of ultimate bearing capacity between a theoretical and practical analysis.

Keywords—component, bearing capacity, footing.

Strength characteristics of cement mortar with stone dust as replacement

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Abstract-The demand of natural sand is quite high as there was an extensive use of concrete in the world of globalization era and this will lead to certain problems in construction field. India is one of the countries that are facing the same problems as other developing countries. Due to this situation, some developing countries are facing a shortage in the supply of natural sand. Quarry dust is one of the alternatives to replace the natural sand. This experimental study is undertaken to determine the optimum mix ratio of river sand and quarry dust in cement

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mortar. Three types of mix proportions of cement with sand were practiced in the mortar mixes that are 1:1, 1:2, 1:3 (cement: sand) and sand is partially replaced with stone dust 0%,20%,40%,60%,80% and 100%.

Compressive strength is decreased if there is more content of quarry sand in the mixture. The compressive strength of the samples was determined on the 7th and 28th days. Results obtained indicate that the compressive strength of compressed concrete increase with the increase of age. Mix ratio 1:1 (cement: sand) with replacement of 40% stone dust gives the highest compressive strength. More stone dust into the mortar mix as partial replacement material to sand resulted the lower compressive strength. This can partly be attributed to the properties of the stone dust and sand which might contribute to the negative effects in the strength of the cubes.

Keywords-Quarry dust, cement mortar, compressive strength

Compressive and split tensile strength behaviour of geopolymer concrete towards conventional concrete

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Abstract- Concrete is the most common material for construction. The demand for concrete as a construction material leads to the increase of demand for Portland cement. Concrete is known as a significant contributor to the emission of greenhouse gases. The cement industry is the second largest producer of the greenhouse gas. One of potential material to substitute for conventional concrete is geopolymer concrete. Geopolymer concrete is an inorganic aluminosilicate polymer synthesized from predominantly silicon, aluminium and by product materials such as fly ash, GGBS (ground granulated blast furnace slag). Test specimens of 150×150×150 mm size were used for the study. 20-30% of Fly ash by the mass was replaced by GGBS. The variable used were percentage of steel fibre volume fraction viz. 0.0%, 0.5%, and 1%, and basalt fibre volume fraction viz. 0.0%, 0.15%, and 0.3%. The concentration of sodium hydroxide was 12Molar and 14 Molar in geopolymer concrete. For curing, temperature was fixed as 600 C for 24 hours. The geopolymer specimens were cured by using steam curing chamber. The specimens were cured after the rest period of three days. Proper mixture proportion for geopolymer concrete. The specimens were tested after the age of 7 days.

Key words: Geopolymer, Green concrete, Fibers, GGBS, Alkaline solution, flexural strength, Tensile strength and Compressive strength.

Advanced Computational Methods versus Analytical and Empirical Solutions for Determining Restraint Stresses in Bottom-Restrained Walls

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Abstract - The distribution of restraint stresses in bottom-restrained walls is important information for the efficient crack control of wall-like concrete members. Practical examples are retaining walls, bridge abutment walls or tank walls, for which the results can be used in order to assess the risk and intensity of harmful separating cracks over the wall height. Different solutions exist for the determination of these stress distributions, ranging from advanced computational methods over analytical and semi-analytical solutions up to empirical approaches. The aim of the present contribution is two-fold. On the one hand, the general applicability as well as commonalities and differences of the investigated solutions were demonstrated by using them for the analysis of a given demonstration example. On the other hand, a parametric study was carried out in order to assess the dependence of the prediction

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quality of the applied solutions on changing conditions. Altogether it was found that advanced computational methods and analytical or semi analytical solutions showed a good agreement for common design tasks. Solutions with empirical modifications, however, were proved to be less satisfying from engineering perspective due to predefined parameters or mechanically inconsistent modifications.

Keywords: Restrained walls, semi analytical solutions, empirical approach.

Fatigue Life Assessment of Orthotropic Steel Deck with UHPC Pavement

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Abstract: In recent years, a number of large-span bridges with orthotropic steel decks were constructed in China. With increasing traffic volumes and higher wheel loads, many fatigue cracks developed at the welds and the edge of cut-out holes. This paper aims at presenting the numerical analysis on the fatigue performance of the orthotropic steel deck using ultrahigh performance concrete (UHPC) overlay as the deck pavement instead of the conventional asphalt concrete pavement. By using finite element method (FEM) model, stress distribution at fatigue sensitive locations under the action of wheel loads is characterized and the obtained stress ranges indicate that the UHPC pavement significantly reduces the magnitude of the stress peak valued. A suggested truck stream model based on the weigh-in-motion (WIM) data of four bridges in China is employed to calculate the stress variation at specific fatigue details. Furthermore, the fatigue damage accumulation at fatigue details under the UHPC and conventional asphalt concrete pavement is studied based on Miner's linear cumulative damage rule and the rain-flow method. The results indicate that the UHPC pavement on the orthotropic steel deck can extend the service lives of the concerned regions over 100 years, but the fatigue lives will reduce significantly when the elastic modulus of UHPC decreases to 50% of the original value.

Keywords: Ultrahigh performance concrete (UHPC), Finite element method (FEM) model, weigh-in-motion (WIM)

A review on empower food, nutritional security and improve soil health for zero budget natural farming viable for small farmers

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Abstract- Agriculture faces many challenges, making it more and more difficult to achieve its primary objective - feeding the world - each year. Population growth and changes in diet associated with rising incomes drive greater demand for food and other agricultural products, while global food systems are increasingly threatened by land degradation, climate change, and other stressors. Uncertainties exist about regional and local impacts of climate change, but the overall global pattern suggests that the stability of the food system will be at greater risk due to short-term variability in food supply. Humankind has to nourish about 9.5 billion people by 2050 which requires maintaining the integrity of the soil and water resources with changing global climate system. Land degradation is a worldwide challenge, substantially affecting productivity in more than 80 countries and especially serious in developing countries. The impact of land degradation has already put at risk the livelihoods, economic well-being, and nutritional status of more than 1 billion people in developing countries (FAO, 2009). Agriculture must change to meet the rising demand, to contribute more effectively to the reduction of poverty and malnutrition, and to become ecologically more sustainable. Poverty and hunger must be eradicated in our generation and should therefore be a prominent stand-alone goal. The majority of the world's poor people live in rural areas, and agriculture growth has proven effective in lifting rural families out of poverty and hunger. Managing the linkages between agriculture,

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poverty and nutrition is critical as we look towards providing children with an opportunity to reach their full potential. Land degradation adversely affects the ecological integrity and productivity of about 2 billion ha, or 23 percent of landscapes under human use and up to 40 percent of the world's agricultural land are seriously degraded. India with 2.4% land area supports more than 17% of the world population. Achieving food security under the regime of climate change will require a holistic system approach, incorporating the principles of natural farming or conservation agriculture (CA), and judicious crop rotation. Zero budget natural farming (ZBNF) an offer workable options to eradicate poverty and hunger while improving the environmental performance of agriculture, but requires transformative, simultaneous interventions along the whole food chain, from production to consumption. It also requires unprecedented, large-scale behaviour change by consumers as well as producers of food. Long-lasting solutions will require re-thinking of rural development and smallholder agriculture towards structural transformations that include and benefit the poor. Improved farming systems and new technologies and business models can create decent jobs, allow the overcoming of resource constraints, enable greater market participation, and also lessen physical hardships in agriculture.

Keywords: Sustainable solutions, organic agriculture, nutrition security, evergreen revolution

Utilization of recycled tiles and tyres in stabilization of soils and production of construction materials

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Abstract- Tile waste is found in several forms including manufacturing slurry, manufacturing dust, and solid pieces from cracked, smashed, and rejected tiles at the construction sites. Worn out tyres that are no longer safe to be used by vehicles are either discarded or burned, adversely impacting natural ecosystems. These wastes are non-degradable and have a direct environmental impact. Poor waste management can lead to hazardous pollution, reduced soil fertility, and increased space consumption at disposal sites. The massive and increasing volume of the tile and tyre wastes calls for recycling of the materials for economical reuse, cleaner production, and greener development. One area for beneficial reuse of these waste materials is the improvement of engineering properties in soft soil. Structures on soft soils may experience several forms of damage due to insufficient bearing capacity and excessive settlement. Hence, soil stabilization is often necessary to ensure that the soft soil can meet the engineering requirements for stability. A comprehensive review of the published literature on the use of recycled tyres and tiles to stabilize and enhance soft soils was carried out. The properties of soft soil-waste mixtures such as liquid limit, plastic limit, plasticity index, compaction behaviour, unconfined compressive strength, and California Bearing Ratio have been presented. When used as partial replacement of cement, sand, and aggregate in concrete, the effect of tyre and tile waste on workability, durability, and compressive strength of the concrete has also been presented. Recycled tiles and tyres have been used with or without any other admixtures to sustainably improve the strength and bearing capacity of soil. The suitability of recycled tiles and tyres in soil stabilization has been discussed with regard to enhancement of strength and reduction of settlement. In addition, the beneficial effects of the recycled tiles and tyres, when they partially replace cement, sand or stone in concrete, have been discussed.

Keywords: environmental pollution, soil stabilization, recycled tiles, recycled tyre, soft soil

Establishment of correlations for prediction of CBR using Non-destructive testing Equipment

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Abstract- Soil compaction is one among the foremost critical components within the construction of roads, airfields, embankments, and foundations. The durability and stability of a structure are related to achieving a proper soil

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compaction. Consequently, the compaction control of different soils used in the construction of highways and embankments is needed for enhancing their engineering properties. The current methods for assessing the standard control for construction of highways is predicted on determining the sector unit weight measurements and comparing that to the utmost measure weight decided in the standard or modified Proctor tests that are conducted in the laboratory. The field dry unit weight measurement is determined using either destructive tests, which include the sand cone, the rubber balloon, and the core cutter methods; or other non-destructive tests such as the nuclear density gauge.

The purpose of soil compaction is to improve its engineering properties not only their dry unit weight and moisture content (Holtz and Kovacs, 1981). Pinard (1998) stated that quality control specifications suffer from a number of problems since the used unit weight criteria do not reflect the engineering properties of soils in roadway conditions. Fleming (1998) also reached to similar conclusions.

Key Words: Bituminous Concrete (BC), NDT test, soil core cutter methods.

Seismic performance evaluation of a fully integral concrete bridge with end-restraining abutments

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Abstract - A fully integral bridge that is restrained at both ends by the abutments has been proposed to form a monolithic rigid frame structure. Thus, the feasible horizontal force effect due to an earthquake or vehicle braking is mainly prevented by the end-restraining abutments. In a recent study, a fully integral bridge with appropriate end-restraining abutment stiffness was derived for a multi span continuous railroad bridge based on linear elastic behaviour. Therefore, this study aims to investigate the nonlinear behaviour and seismic capacity of the fully integral bridge and then to assess the appropriate stiffness of the end-restraining abutment to sufficiently resist design earthquake loadings through a rigorous parametric study. The finite element modelling and analyses are performed using Open Sees. In order to obtain the force-deflection curves of the models, nonlinear static pushover analysis is performed. It is confirmed that the fully integral bridge prototype in the study meets the seismic performance criteria specified by Caltrans. The nonlinear static pushover analysis results reveal that, due to the end-restraining effect of the abutment, the lateral displacement of the fully integral bridge is reduced, and the intermediate piers sustain less lateral force and displacement. Then, the sectional member forces are well controlled in the intermediate piers by a proper application of the end-restraining abutments.

Keywords-Bridge, Open Sees, non-linear behaviour, seismic analysis, FEM

Recent trends in advances earthquake resistant construction design

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Abstract-Earthquakes are the indication of transformation in the earth's internal structure. Seismic activity is common in most parts of the world, though the frequency of its occurrence is a function of local tectonic setup. The past earthquake experiences have demonstrated huge loss of life and building stock, affecting the social and economic conditions of a country. Though it is not possible to prevent an earthquake, the least that can be achieved in reducing the damage is to make the buildings earthquake resistant. With the advancement in our understanding of the earthquakes, most of the countries have mandated the incorporation of seismic provisions in building design and architecture. In the event of an earthquake, the seismic waves originating from the focus is transmitted in all the possible directions. These shock waves propagate in the form of body waves and surface waves through the earth's interior and, are highly random in nature. These ground motions cause structures to vibrate and induce inertia forces

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in the structural elements. In the absence of seismic design, the building may fail, leading to a catastrophe. The seismic design philosophy aims to primarily ensure life safety and secures the functionality of the building. In conjunction with the design philosophy, it is essential to adopt earthquake-safe construction practices for the efficient seismic performance of a building. No region in the whole of India can be considered as earthquake free due to the ongoing subduction of the Indian Plate under the Eurasian plate. The paper aims to create awareness about the earthquake-safe buildings in various seismic zones. The most common building typologies encountered in the recent years are the moment resisting frame (RC frame), moment resisting frames with brick infill, and masonry buildings. This study investigates the construction practices adopted for these common building typologies. Recommendations are made for the local construction practices wherever found necessary with relevance to the codal provisions. In addition, the possible future trend in the earthquake resistant technology has also been discussed.

Keywords- Seismic Loads, Construction practices, Earthquake resistant design.

Stabilization of BCS using shredded tyre Chips and fly ash for sub grade

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Abstract—Evolution of Road construction is increasing day by day. To cater this demand, there is a immense requisite for construction materials. The overall performance of pavement is not only dependent on its design but also on load bearing capacity of soil. This research deals with the sub grade layer comprising of natural soil, which receives the transmitted loads and also acts as foundation of a pavement. Generally black cotton soil have low bearing capacity and high swelling, so it is not suitable for sub grade in pavements. This study is focussing on improving properties of BCS. For this shredded rubber from waste of percentages 10% and 8% has been chosen as the reinforcement material and fly ash of percentage 12% and 15% as binding agent which was randomly included into the soil at different combinations. This study has been focused on the strength behaviour of soil reinforced with randomly included shredded rubber fibre and fly ash.

The samples were subjected to California bearing ratio and unconfined compression tests. From the results obtained, there is improvement in the shear strength and bearing capacity parameters of the BCS. The results obtained are compared with unreinforced samples and graphs are drawn towards the usability and effectiveness of fiber reinforcement as a replacement for deep or raft foundation and on pavement sub grade soil as a cost effective approach. It is found that properties of BCS are improved by adding shredded rubber and fly ash.

Key Words: BCS (black cotton soil), CBR, ultimate compression test, shredded tyre.

Behavior of Concrete Filled Steel hollow Cylindrical Composite Components

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Abstract—Conduct of composite steel-concrete components in different stacking stages is all around broke down by hypothetical examinations and trials. Concrete-Filled Steel Tube (CFST) is one of numerous composite components utilized at present in structural building. Various methodologies and structure ways of thinking were embraced in various plan codes for it. Be that as it may, for empty CFST components, which are more powerful than conventional CFST, any code doesn't give data about how to structure these components. Further examinations of empty composite CFST components are required. In stacking stage, when a specific degree of stresses exists, a connection between steel cylinder and solid center shows up and hence a perplexing pressure condition of component happens, which builds the load-bearing limit of the entire composite component. This connection between parts of CFST components is come to as a result of various material properties, for example, Poisson's proportion, flexibility modulus and so on. In this article reasons of the above-mentioned complex pressure state

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PAPER ID: ICRTET-ECE-027

ENERGY HARVESTER FROM MEMS BASED PIEZOELECTRIC

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ABSTRACT:

Piezoelectric energy harvester (PEH) is emerging as a novel device which can convert mechanical energy into electrical energy. It is mainly used to collect ambient vibration energy to power sensors, chips and some other small applications. This paper first introduces the working principle of PEH. Then, the paper elaborates the research progress of PEH from three aspects: piezoelectric materials, piezoelectric modes and energy harvester structures. Piezoelectric material is the core of the PEH. The piezoelectric and mechanical properties of piezoelectric material determine its application in energy harvesting. There are three piezoelectric modes, d_{31} , d_{33} and d_{15} , the choice of which influences the maximum output voltage and power. Matching the external excitation frequency maximizes the conversion efficiency of the energy harvester. There are three approaches proposed in this paper to optimize the PEH's structure and match the external excitation frequency, i.e., adjusting the resonant frequency, frequency up-converting and broadening the frequency bandwidth. In addition, harvesting maximum output power from the PEH requires impedance matching. Finally, this paper analyzes the above content and predicts PEH's future development direction.

Key Words: Energy Harvesting, Piezoelectric Material, Piezoelectric Modes, Resonant Frequency

PAPER ID : ICRTET-ECE-008

ENERGY HARVESTING THROUGH CANTILEVER TYPE PIEZOFILMS HARVESTER MODEL

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ABSTRACT:

Usable electrical energy harvesting from mechanical vibration is novel for operating low-power remote devices. Two different mass loaded cantilever type piezo films (commonly used as piezo sensor) are considered in this investigation to convert mechanical Vibration into electrical energy. An artificial vibrator is fabricated to simulate the ambient vibration. The ac power generated by the piezo films is converted by a commercial passive converter to obtain usable dc power. A total of eight experiments are conducted and we found that in the regime of ambient vibration ($\lt; 100\text{ Hz}$), the piezo films of lower area with lower resonant frequency can provide higher power. Further, when energy harvester contains multiple piezo films, better performance is obtained for

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homogeneous films in contrast to the heterogeneous films. Study on load characteristics reveals that parallel combination of films generates highest power, signifying that a vibrating piezo film acts as a current source. In our study, peak power is obtained for a load resistance of $480 \text{ k}\Omega$, signifying a better current driving capability of the harvester. The peak power is found to be highly nonlinear with the vibrating frequency and is found to be maximum around the vibrating frequency of 59 Hz. In addition, electrical power delivered to the resistive load per unit area of the film is found to be as high as $1.43 \mu\text{W}/\text{cm}^2$ and it is much higher than the similar reported harvesters.

Key words: Energy harvesting, Load characteristics, Piezo film, Vibration.

PAPER-ID: ICRTET-ECE-011

IMPLEMENTATION OF WIRELESS COMMUNICATION CHANNEL USING BRAIN INSPIRED RESERVOIR COMPUTING BASED MIMO-OFDM

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ABSTRACT:

Store processing (RC) is a class of neuromorphic figuring approaches that arrangements especially well with time-arrangement forecast undertakings. It essentially diminishes the preparation many-sided quality of repetitive neural systems and is likewise appropriate for equipment usage whereby gadget material science are used in performing information handling. In this paper, the RC idea is connected to recognizing a transmitted image in numerous info different yield orthogonal recurrence division multiplexing (MIMO-OFDM) frameworks. Because of remote engendering, the transmitted flag may experience serious contortion before achieving the collector. Consequently, an effective image identification technique ends up noticeably basic. The traditional approach for image recognition at the beneficiary requires exact channel estimation of the fundamental MIMO-OFDM framework. Be that as it may, in this paper, we present a novel image discovery plot where the estimation of the MIMO-OFDM station ends up noticeably pointless. The presented plot uses a resonance state arrange (ESN), which is an uncommon class of RC. The ESN goes about as a black box for framework displaying purposes and can foresee nonlinear dynamic frameworks in a proficient way. Reenactment comes about for the uncoded bit

Keywords: MIMO, OFDM, Reservoir Computing

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PAPER-ID : ICRTET-ECE-012

A NOVEL APPROACH FOR FAST IMAGE DE-HAZING USING WEIGHTED GUIDED FILTER

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ABSTRACT:

The atmosphere scattering affect the captured images with blurred and partial white and gray color in haze and haze climate condition. Due to the inconvenience caused by the video surveillance system in this weather the study of an algorithm called de-hazy became more important. Based on the calculation of depth map using HSV color space image we propose a new de-hazing algorithm. The main contribution in our study is the judgment of air light value the algorithm analyzes the physical imaging process in hazy weather and derives an approximate spread by using prior dark filter. A new technique is proposed for the local contrast enhancement which made the algorithm more efficient when matched with other algorithms. The quality of de-hazed images is visually impressive when compared with conventional approaches. The execution time is prominent as the time consuming step in de-hazing is to combine pixel-wise constraints with spatial continuities. The algorithm proposed has a reduced execution time. By using the fast guided filter the speed of the algorithm is increased which has improved the adaptability

Key Words— De-hazing, depth map, air light, local contrast enhancement

PAPER-ID : ICRTET-ECE-013

FAULT AWARE SELF HEALING INTELLIGENT ON CHIP NETWORK

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ABSTRACT:

To avoid packet loss and deadlock scenarios that arise due to faults or power gating in multicore and many-core systems, the network-on-chip needs to possess resilient communication and load-balancing properties. In this work, we introduce the Fashion router, a self-monitoring and self-reconfiguring design that allows for the on-chip network to dynamically adapt to component failures. First, we introduce a distributed intelligence unit, called Self-Awareness Module (SAM), which allows the router to detect permanent component failures and build a network connectivity map. Using local information, SAM adapts to faults, guarantees connectivity and deadlock-free routing inside the maximal connected subgraph and keeps routing

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tables up-to-date. Next, to reconfigure network links or virtual channels around faulty/power-gated components, we add bidirectional link and unified virtual channel structure features to the Fashion router. This version of the router, named Ex-Fashion, further mitigates the negative system performance impacts, leads to larger maximal connected subgraph and sustains a relatively high degree of fault-tolerance. To support the router, we develop a fault diagnosis and recovery algorithm executed by the Built-In Self-Test, self-monitoring, and self-reconfiguration units at runtime to provide fault-tolerant system functionalities. The Fashion router places no restriction on topology, position or number of faults. It drops 54.3 55.4% fewer nodes for same number of faults (between 30 and 60 faults) in an 8x8 2D-mesh over other state-of-the-art solutions. It is scalable and efficient. The area overheads are 2.311% and 2.659% when implemented in 8x8 and 16x16 2D-meshes using the TSMC 65nm library at 1.38GHz clock frequency.

Key Words: Self-Awareness Module, subgraph

PAPER-ID: ICRTEE-ECE-014

A CONFIGURABLE AND LOW POWER HARD DECISION VITERBI DECODER IN VLSI ARCHITECTURE

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ABSTRACT:

Convolutional encoding and viterbi algorithm are basic concepts of error correction method. Viterbi algorithm is one of decoding method for data error correction. In VLSI area, the design challenges are usually about its power, area consumption, speed, complexity, and configurability. This paper proposed a configurable and low power design for hard-decision viterbi decoder in VLSI. For any number of traceback the design can be configured by increasing or decreasing the size of traceback parameters. It needs $N+2$ clock cycles latency to complete the process, where N is the number of traceback. In this research, configuration test have been conducted for $N=32$ and $N=64$. The design also has been synthesized in Xilinx as target boards. It gives good synthesis results in operational speed and area consumption.

Key Words: Viterbi decoder, convolution encoder, low power, VLSI.

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PAPER-ID: ICRTET-ECE-015

POLY-PHASE IIR FILTER BANKS FOR SUB-BAND ADAPTIVE ECHO CANCELLATION APPLICATIONS

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ABSTRACT:

Poly phase IIR structures are known to be very attractive for very high performance filters that can be designed using very few coefficients. This combined with their reduced sensitivity to coefficient quantization in comparison to standard FIR and IIR structures makes them very applicable to very fast filtering especially when implemented in fixed point arithmetic. In this paper we suggest replacing standard FIR filter banks used in Sub band adaptive poly phase FFT echo cancellation applications with such a structure. We demonstrate here that such an alternative approach results in a much more computationally efficient implementation combined with more accurate channel detection and improvement in the adaptation speed.

Key words: FFT, Poly phase IIR filters,

PAPER-ID: ICRTET-ECE-016

A TWO-SPEED, RADIX-4, SERIAL-PARALLEL MULTIPLIER

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ABSTRACT:

In this paper, we present a two-speed, radix-4, serial-parallel multiplier for accelerating applications such as digital filters, artificial neural networks, and other machine learning algorithms. Our multiplier is a variant of the serial-parallel (SP) modified radix-4 Booth multiplier that adds only the nonzero Booth encodings and skips over the zero operations, making the latency dependent on the multiplier value. Two subcircuits with different critical paths are utilized so that throughput and latency are improved for a subset of multiplier values. The multiplier is evaluated on an Intel Cyclone V field-programmable gate array against standard parallel-parallel and SP multipliers across four different process-voltage-temperature corners. We show that for bit widths of 32 and 64, our optimizations can


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result in a 1.42–3.36 improvement over the standard parallel Booth multiplier in terms of area–time depending on the input set.

Key Words— Booth, field-programmable gate array (FPGA), machine learning (ML), multiplier, neural networks.

PAPER-ID: ICRTET-ECE-017

HOME AUTOMATION BASED ON WIFI MODULE

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ABSTRACT: This project presents a design and prototype implementation of new home automation system that uses WiFi technology as a network infrastructure connecting its parts. The proposed system consists of two main components; the first part is the server (web server), which presents system core that manages, controls, and monitors users' home. Users and system administrator can locally (LAN) or remotely (internet) manage and control system code. Second part is hardware interface module, which provides appropriate interface to sensors and actuator of home automation system. Unlike most of available home automation system in the market the proposed system is scalable that one server can manage many hardware interface modules as long as it exists on WiFi network coverage. System supports a wide range of home automation devices like power management components, and security components. The proposed system is better from the scalability and flexibility point of view than the commercially available home automation systems.

Key Words: Wifi module, Web Server

PAPER-ID: ICRTET-ECE-018

PERFORMANCE EVALUATION OF DOWNLINK MEMO IN LTE TECHNOLOGY

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ABSTRACT: LTE (Long Term Evolution) is the last step towards the 4th generation of radio technologies designed to increase the capacity and speed of cellular networks. At present, current generation of cellular technology dominated by 3G (third generation), LTE is marked as 4G. The third generation partnership project (3GPP) currently work for developing the 3rd generation mobile and telecommunication system with a future 4th generation system. This project mainly focuses on design of a LTE DL (downlink) inspired channel simulator using the AWGN and fading channel model, here OFDMA is used as a multiple access scheme. The performance of noise and

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interference in AWGN channel and fading channel at LTE DL is measured and compared to obtain less noisy channel. Both lower and higher order modulation schemes are used in LTE DL. The parameters used for comparison in AWGN channel and fading channel are BER (Bit Error Rate) and Eb/No (db).The proposed work is about to reduce the noise in AWGN channel and fading channel.

Key Words-Long Term Evolution (LTE) , Frequency Division Duplex (FDD) , Time Division Duplex (TDD) , Orthogonal Frequency Division Multiple Access (OFDMA) , Additive White Gaussian Noise (AWGN).

PAPER-ID: ICRTET-ECE-019

Implementation of Digital Modulation using FPGA with System Generator

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ABSTRACT: The main objective of the paper is to describe all modulation techniques (like: BPSK, ASK, FSK, QPSK,QAM) on Field Programmable Gate Array (FPGA) development board which is widely available and inexpensive. Todevelop the system blocks Simulink environment and system generator version 16.2 are used under MATLAB version 14(R2014A). To achieve simulation and synthesis of KINTEX 7 FPGA tools from Xilinx VIVADO 16.2 are used. VeryHigh Speed integrated circuit hardware description language (VHDL) is used for describing the hardware in system understanding language. Digital to Analog converter is used to interface both FPGA and CRO which is used to visualizethe analog output of the digitally modulated signal.

Key Words: Amplitude Shift Keying (ASK), Binary Phase Shift Keying (BPSK), Frequency Shift Keying (FSK), Quadrature Phase Shift Keying (QPSK), Digital Communication, Field Programmable Gate Array (FPGA), Receivers, Transmitters.

PAPER-ID : ICRTET-ECE-020

Vehicle protection design using RFID tag to tag communication

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ABSTRACT:AS THE NUMBER OF urban vehicles grow rapidly, vehicle theft has become a shared concern for all citizens.The main idea of this project is to incorporate RFID tags in the vehicle and on the number plate which has the details of the vehicle. Both the RFID tags will have same data.These two tags are synced with each other wirelessly. When one of the tag is not in sync with the other, the adjacent tag senses and responds indicating a problem.The reader is programmed to read the data in such a way that when the data in both the tags are matched, it displays matched along with the vehicle details and if the data is not matched it displays mismatched and indicates the theft of the vehicle.

Key words: Automatic Identification, RFID tags, Reader, Wireless Communication


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PAPER-ID: ICRTET-ECE-021

ADVANCED IOT BASED LPG LEAK SENSING AND ALERTING SYSTEM OVER GSM AND WIFI

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ABSTRACT: Gas detecting innovation has among the topical research, ponder for rather now and then. With the reason for local gas chamber cooking turned out to be simple and settling them is moreover abbreviated. Be that as it may, at that point are likewise sick impacts of utilizing these barrels. Spillage of residential gas isn't just lethal to human and creature life, yet in addition aims colossal property misfortune. In this way, location and essential advances are to be considered to forestall unfortunate mishaps. Many accidents tendencies due to shortcircuits, gas leakages, Etc. won't permit a normal person to enter the accident space, therefore on the scale back any harm. Such accidents are a unit, increasing every day, owing to lack of awareness, precaution measures and mental object. Multiple sensors were used for detection method. This paper presents an intelligent security system helpful for many of the house and business application.

Key Words: MQ5 Gas Sensor, Smart Alerting Techniques, Raspberry-pi3, Buzzer, Light Emitting Diode.

PAPER-ID : ICRTET-ECE-022

WIRELESS SENSOR NETWORK SYSTEM USING RASPBERRY PI AND ZIGBEE FOR BUILDING MONITORING APPLICATIONS

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ABSTRACT: With over a decade of intensive research and development, wireless sensor network (WSN) technology has been emerging as a feasible solution to many innovative applications. In this paper, we describe a wireless sensor network system that we have developed using open-source hardware platforms, Raspberry Pi and zigbee. The system is low-cost, low power consuming and highly scalable both in terms of the type of sensors and the number of sensor nodes, which makes it well suited for a wide variety of applications related to environmental monitoring. Raspberry Pi is cheap, flexible, fully customizable and programmable small computer embedded linux board and abilities of its usage as WSN node and sensor node. Raspberry Pi works as a base station which connects


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the sensor nodes via zigbee protocol in the wireless sensor network and collects sensors data from different sensors, and supply multi-clients services including data display. The client can visit the base station remotely via (website) Ethernet or command console.

Key words— Wireless Sensor Network; Raspberry Pi; Zigbee; Base station; Sensor Node.

PAPER-ID : ICRTET-ECE-023

IOT based Greenhouse monitoring and alerting system using Raspberry Pi

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ABSTRACT:

Greenhouse is a controlled area environment to grow plants .In order to achieve maximum plant growth, the continuous monitoring and controlling of environmental parameter such as temperature, soil moisture ,light intensity, humidity etc. are necessary for greenhouse system. A greenhouse provides an environment to grow plants all year round, even on cold and cloudy days. The main aim of this project is to design a simple, low cost system to monitor the value of environmental parameter and they are continuously updated and controlled in order to achieve optimum plant growth. Due to the unequal distribution of rain water,it is very difficult to full fill requirement needed by farmers to manage water equally , it requires some irrigation method that are suitable for anyweather condition,soiltypes and variety of crops. It is more important to find method that give perfect analyzing and controlling to develop proper environment. Greenhouse is the best solution to control and manage this problem. DHT11,soil moisture sensor, LDR sensor are the main sensors used in this project which give the exact value of temperature, humidity, water contentin soil andlight intensity respectively [2]. A cooling fan, artificial light and motor pump are connected to Raspberry-pi. Here we will use Raspberry pi processor and IOT (Internet of Things). By using IOT we control devices or any environmental needs anytime, anywhere. Based on the characteristics of correct perception, efficient transmission and intelligent synthesis of Internet of Things. This research focuses on developing a system that can automatically measure and monitor changes of temperature, light intensity, humidityandmoisture levelinthegreenhouse.

Key Words: Raspberry Pi, Android App, green house monitoring, DHT11 sensor, Two electrode sensor, Light dependent resistor


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PAPER-ID : ICRTET-ECE-024

Nodemcu based Advanced Smart Library Management System Using IOT

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ABSTRACT:

This paper proposes the design and implementation of smart library for digitalizing the library by using Internet of things without any human interruption. The arduino mega 2560 is main component of this project it is interfaced with Radio frequency identification technology, Liquid crystal display(LCD),GSM Module and NodeMCU. Implementation of this framework is based on RFID technology i.e. RFID tags are placed on books and RFID reader is used to read these tags. This study is to automize the library such as allowing fast transaction flow and easily handling the activities like process of issuing and return of book from library can be done using by using RFID technology and student will get notified using GSM. RFID is used to check the availability, misplacement of book, provide anti-theft and location of book. Book availability and location of book can be checked on webpage. Information of each user card will be maintained on database and update automatically using IoT.

Key Words: Arduino mega 2560, RFID reader, RFID tag/Card, GSM module, NodeMCU

PAPER-ID : ICRTET-ECE-028

Massive MIMO systems for 5G wireless communication networks

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ABSTRACT:

Multi-user MIMO is a dominant technology in 5G network systems assigns different data streams to different users to providing significant capacity and performance advantages over 4G . The 5G technology will introduce Massive MIMO (mMIMO)with sub-6 GHz frequencies, multiple antennas focus the transmit and receive signals into smaller regions of space, bringing huge improvements in throughput and energy efficiency. The more data streams, the greater the data rate and more efficient use of radiated power.. The 5G mantra is to increase network capacity and data rates while minimizing operator expenses.. The 5G massive MIMO will help to increase

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the high data rates to multiple users, helping to increase capacity and Increasing spectral efficiency and high reliability . It's clear that to achieve the 5G target of 20-Gb/s data rates, it will be necessary to use millimeter-wave (mmWave) spectrum.

Key Words: MIMO, 5g Technology

PAPER-ID: ICRTET-ECE-029

ENERGY-EFFICIENT ROUTING PROTOCOL FOR WIRELESS SENSOR NETWORKS

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ABSTRACT: Wireless Sensor Networks (WSN) services are applied in many civilian, engineering, medical monitoring, automation and military scenarios. WSN are distributed network of sensors, it has different parameters like temperature, humidity, also has initiated various security threats, especially in unattended environments. Network consists of three basic components such as Nodes, Base Station, and Battery unit. This network first sense the data by using sensing element, because nodes act as a sensor and process the data. Finally data is transmitted using low battery power. Because of less battery powered it will get die out quickly. So energy efficiency routing is the important issues in WSN. Nodes consume energy while transmitting data, therefore it affects the lifetime of the network. Hence we have to develop an efficient routing algorithm in which nodes consume less energy. Many algorithms are developed in order to achieve less energy consumed routing algorithm in different layers. Such as Network layer, application layer and data link layer. In this paper the Modified Low Energy Adaptive Cluster Hierarchy (M-LEACH) routing protocol has been discussed. Implementation has been done by using MATLAB software.

Key Words—LEACH, wireless sensor network, cluster head, energy consumes, dead nodes

PAPER-ID : ICRTET-ECE-030

ROBOTIC VEHICLE CONTROLLED BY USING DTMF

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ABSTRACT Robotic vehicle based on DTMF (Dual Tone Modulation Frequency), the robot operates using AT 89s52 microcontroller. This circuit consists of simple DTMF Tone decoder IC (HT9170B) and a motor driver IC (L293D or L298N). When a key is pressed from our mobile, it generates a tone, which is a combination of high and low frequencies. Then these frequencies passed to the code decoder, it decodes the incoming tone into 4 bit binary sequence. The decoder data at the output is directly given to the driver IC to drive the two motors. These motors rotate according to the decoded output.

Key Words—DTMF, Binary Sequence, motor driver, microcontroller

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Paper Id:ICRTET-CSE301

SECURE DATA COMMUNITY AGGREGATION AND STORAGE OF ATTRIBUTES IN THE PUBLIC CLOUD

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Abstract

The fast advancement of cloud administrations, immense volume of data is shared through cloud computing. Albeit cryptographic methods have been used to give data secrecy in cloud computing, current instruments can't authorize protection worries over ciphertext related with multiple owners, which makes co-owners unfit to suitably control whether data disseminators can really scatter their data. In this paper, we propose a secure data group sharing and conditional dissemination scheme with multi-owner in cloud computing, in which data owner can share private data with a group of users via the cloud in a secure way, and data disseminator can disseminate the data to a new group of users if the attributes satisfy the access policies in the ciphertext. We further present a multiparty access control mechanism over the disseminated ciphertext, in which the data co-owners can append new access policies to the ciphertext due to their privacy preferences. Moreover, three policy aggregation strategies, including full permit, owner priority and majority permit, are provided to solve the privacy conflicts problem caused by different access policies. The security analysis and experimental results show our scheme is practical and efficient for secure data sharing with multi-owner in cloud computing.

Keywords: -Data sharing, cloud computing, conditional proxy re-encryption, ciphertext, attribute-based encryption, privacy conflict.

Paper Id:ICRTET-CSE302

MACHINE LEARNING ALGORITHMS PROCESSING IN BIG DATA ANALYTICS

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Abstract

Big data refers to size of data produced not only in terabytes but in Exabyte or even beyond this and it is a large data combination of both structured and unstructured data that it is very difficult to process using traditional database and most software techniques. It envelope the volume of information, the velocity or speed at which it is created and collected, and the variety or scope of the data points being covered. The developments and new methodologies in researches on machine learning for processing big data. It has a learning methods and various types of data types, basic issues in big data processing and application of machine learning approaches in big data. Finally, we processing algorithms in this domain and our further research aims and directions.

The data being produced is structured, unstructured or even semi-structured. It has become difficult to find meaningful patterns hidden in these various data sets. The data is being produced at lightning speed. In this review paper, various machine learning algorithm have been reviewed for Big Bata processing.

Keywords: Data analysis, Machine learning, Data mining, Big data, Distributed computing, Knowledge discovery.

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Paper Id:ICRTET-CSE303

MIGRATION TECHNIQUES IN MOBILE CLOUD

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Abstract

Mobile cloud computing is one of the machinery important in today's mobile environment run by using mobile devices in cloud surroundings. It combines the features of both mobile computing and cloud computing, in that way provides optimal services to the users of mobile strategy. As Mobile Cloud Computing is the most essential fields with growing age of today's fast internet using and mobile world along with its uses it has to faces some of the issues and challenges some of them are address in this paper. Because the information is cloud computing and accessing it with mobile devices all the transaction goes through the network so it is vulnerable to attack. For keeping the use of this essential tool of constant in this advance world we are giving some of the solutions to these challenges to address in the field of Mobile Cloud Computing.

Key Words: *Mobile computing, cloud computing, mobile cloud computing, mobile cloud application*

Paper Id:ICRTET-CSE304

GRAPH BASED PRINTED KANNADA CHARACTER RECOGNITION SYSTEM BY USING BACKPROPAGATION NEURAL NETWORK

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Abstract

An optical recognition system (OCR) scans the input printed Kannada character and identifies character resides in database model to outline a separate transcript, it's been pre-processed. There many existing OCR systems are available for handling the printed English report with sensible levels of accurateness. Those systems are existed for European languages and some of the Asian languages such as Japanese, Chinese, etc. As many OCR systems exists also for Kannada languages. Printed Kannada character can be recognized using neural network. This methodology uses three-layer model such as, input layer, hidden layer and output layer. The combination of graph based features and neural classifier gives the expected result.

Keywords—*character recognition, pre-processing, BPNN, training, testing.*


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Paper Id:ICRTET-CSE305

A COMPOSITE SERVICE COMPOSITION IN MOBILE AD HOC NETWORKSBASED ON NOVEL NODE MODEL

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Abstract

Composite service provision in mobile ad hoc networks encounters great challenges and its success rate is not satisfactory because the nodes' locations are dynamic and the nodes maybe unavailable at any time. Composite service is built through the service composition. In mobile ad hoc networks, the factors influencing the success rate of service composition are mainly the number of nodes and the time spent for the composition. The node's failure probability is proportional to the length of time the node exist in the networks. In order to improve the success rate of service composition, we take several measures. First, we split the service requirement into several segments and cluster the nodes, so that the nodes' waiting time for service composition can be reduced. Second, we propose a new node model of "one node contains multiple services" in mobile ad hoc networks. Using this type of nodes model, the number of nodes required for service composition can be reduced. These means can increase the success rate of service composition.

Key words: *service provision; service composition; mobile ad hoc networks; cluster; requirement splitting*

Paper Id:ICRTET-CSE306

CONJECTURE CLOUD WITH BIG DATA: PROFESSIONAL PLAYING FORECASTING

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Abstract

Major Golf and Grand Slam Tennis tournaments such as Australian Open, The Masters, Roland Garros, United States Golf Association (USGA), Wimbledon, and United States Tennis Association (USTA) United States (US) Open provide real-time and historical sporting information to immerse a global fan base in the action. Each tournament provides real-time content, including streaming video, game statistics, scores, images, schedule of play, and text. Due to the game popularities, some of the web servers are heavily visited and some are not, therefore, we need a method to autonomously provision servers to provide a smooth user experience. Conjecture Cloud Computing (CC) has been developed to provide a smart allocation/deal location of servers by combining ensembles of forecasts and predictive modeling to determine the future origin demand for web site content. CC distributes processing through analytical pipelines that correlate streaming data, such as scores, media schedules, and player brackets with a future-simulated tournament state to measure predicted demand spikes for content. Social data streamed from Twitter provides social sentiment and popularity features used within predictive modeling. Data at rest, such as machine logs and web content, provide additional features for forecasting. While the duration of each tournament varies, the number of origin website requests range from 29,000 to 110,000 hits per minute. The CC (Conjecture cloud) technology was developed and deployed to all Grand Slam tennis events and several major golf tournaments that took place in 2013 and to the present. which has decreased wasted computing consumption by over 50% and above. We propose a novel forecasting ensemble that includes residual, vector, historical, partial, adjusted,

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cubic and quadratic rank based forecasters. In addition, we present several predictive models based on Multiple Regression as inputs into several of these forecasters. We conclude by empirically demonstrating that the predictive cloud technology is able to forecast the computing.

Keywords: *Preprocessing, Event Forecaster, Post Processing, Historical Forecaster, Historical Post Processing, Final Forecast and Rank Forecasting.*

Paper Id:ICRTET-CSE307

ADVANCED INTELLIGENT PROCESSING OF ENCRYPTED DATA IN CLOUD-BASED IOT

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Abstract

Phrase search allows retrieval of documents containing an exact phrase, which plays an important role in many machine learning applications for cloud-based IOT, such as intelligent medical data analytics and other services. With the emergence of cloud computing most of the data owners are outsourcing their corpus data from local sites to the commercial public cloud for great flexibility and economic savings. But tactical data has to be encrypted before outsourcing for preserving data privacy and also encrypted data gives an effective data utilization services. Traditional searchable encryption uses Boolean search to search the data which is not satisfied for multi-user data. In this paper, we propose P3, with ranked keyword over the encrypted cloud data which improves system usability and file retrieval accuracy. Further to protect score information one-to-many order preserving mapping techniques has been developed. We propose a system where we will be adding physical layer security component which will help the system to be more secure and less vulnerable to attacks.

Keywords: *Phrase search, encrypted data, artificial intelligence, IOT, cloud, Ranked Keyword based search, score dynamics, order preserving mapping, IMEI based security.*

Paper Id:ICRTET-CSE308

AN OPTIMISTIC SURVEY AND QUICK RECOVERY IN WIRELESS MOBILE COMPUTING

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Abstract

Mobile computing is a fast emerging field in distributed computing. Application of data recovery in the mobile computing environment presents many challenges due to the mobile nature of the hosts, and limited bandwidth available on wireless links. The mobility of the hosts makes it difficult to store application logs and access them for recovery. In this paper we present survey of different recovery schemes in the mobile wireless environment.


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Keywords: Message logging, asynchronous recovery, check pointing, rollback, mobile agents

Paper Id:ICRTET-CSE309

REVIEW ON VARIOUS BUG TRAIGE TECHNNIQUES AND APG FOR EFFICIENT SOFTWARE BUG TRIAGING

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Abstract

In recent development almost every software organization spending more than half of their project revenue for fixing bugs and these bugs are generating continuously for open source projects, and the most of the existing methods to fix bugs are manual and this process is not feasible every time and it is tedious task to the software companies, so a novel method should be proposed in order to avoid bug fixing problems, hence herewith proposing Automatic Patch generation (APG) method. Patch generation is one of the important tasks in software maintenance i.e. on debugging activities such as fault localization and prioritization. In practice, debugging cannot be completed without patch generation even if a fault is accurately localized or efficiently prioritized. Patch generation is recognized as an essential task in software development since most contemporary software systems inevitably contain bugs that need to be fixed. As the size and complexity of software systems get larger and higher, significantly more number of bugs are found and reported. Naturally, the corresponding cost for resolving the bugs is rapidly increasing. PROFIX Pattern is an automated technique for patch generations which lead novel pattern-based repair technique learned from human-written patches.

Keywords: APG, Patches, PROFIX Pattern

Paper Id:ICRTET-CSE310

OFFLINE SIGNATURE RECOGNITION SYSTEM BY USING EUCLIDIAN DISTANCE IN GRAPH THEORY

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Abstract

Signature recognition is an important requirement of automatic document recognition system. Many approaches for signature recognition are found in literature. A novel approach for Graph based offline signature recognition system is presented in this paper, which is based on powerful Graph based features. The proposed system functions in three stages. Pre-processing stage, which consists of six steps: gray scale conversion, noise removal, nonnalization, binarization, resize, thinning to make signatures ready for feature extraction, Feature extraction stage; where totally 22 features are extracted which are used to distinguish the



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different signatures. Finally in classification stage; a simple Euclidean distance measure is used as decision tool. The average recognition accuracy obtained using this model ranges from 94% to 95% with the training set of 50 persons.

Keywords—*Pre-processing; Binarization; Normalization; Euclidean Distance; Graph theory; Graph based features.*

Paper Id: ICRTET-CSE311

INCREASING ACCURACY OF PREDICTING HEART STROKE USING EFFECTIVE MACHINE LEARNING TECHNIQUES BY APPLYING PRINCIPAL COMPONENT ANALYSIS (PCA)

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Abstract

In medical science, heart stroke is one of the main challenges; This is because many parameters and technical factors are required to accurately predict the disease. The main idea behind this discussion is to highlight how useful machine learning approaches are for assessing heart stroke using medical data. (Detrano, R., et.al.1989). This research emphasizes overcoming the vulnerability and creating a computer system so that misinterpretations and misinterpretations of data by heart consultants cannot be avoided. Machine learning is a good choice for high accuracy assessment of not only heart stroke but also other diseases. This is because this different tool uses a functional vector and its different data types under different conditions for predicting heart stroke, algorithms such as Naive Bayes, Decision Tree, and Neural Network. Classified reports of heart stroke The Decision Tree is used to deliver, but the neural network provides opportunities to reduce the risk of heart stroke. (M. A. Jabbar, 2013). The main goal of this paper is to reduce the dimensions of data by applying Principal component analysis of projecting the (k) dimensional subspace to increase computational efficiency while retaining more information. An important question is "what is the size of k, which represents" well "data?". This research is dedicated to extensive research in the field of machine learning techniques for heart stroke. It also shows the future prospectus of the machine learning heart stroke algorithm. This paper provides an in-depth analysis of the use of deep learning in the area of heart stroke assessment.

Keywords: *Heart stroke, Data Preprocessing, Train & Test datasets, Machine learning algorithms, Classification, Naive Bayes, Decision Tree, and Neural Network algorithms, Dimensionality Reduction, Principle component analysis.*

Paper Id: ICRTET-CSE312

SOCIAL MEDIA SENTIMENT ANALYSIS

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Paper ID: ICRTET-HS106

STUDY OF A TRANSPORTATION PROBLEM OF AN ESSENTIAL ITEM FROM VARIOUS ORIGINS TO DIFFERENT DESTINATIONS BY USING EQM

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Abstract

We considered a transportation problem of essential item rice from the different origins to different destinations and formulated the problem as a LPP model. We obtained an IBFS to the problem by NORTH-WEST CORNER (NWCM) method and EASY QUICK METHOD (EQM) and compared the results and displayed in the tables. The key idea in EQM is to minimize the best combinations of the solution to reach the optimal solution. Comparatively, applying the EQM in the proposed method obtain the best initial feasible solution to the transportation problem and performs faster than the existing methods with a minimal computation time and less complexity. The proposed method is therefore an attractive alternative to traditional problem solution methods. The EQM can be used successfully to solve all different transportation problems in different areas of study. Finally, MODI method has applied for optimal solution for the effectiveness of the proposed method.

Keywords— *Transportation Models, Initial Basic Feasible Solution (IBFS), Optimal Solution, EASY QUICK METHOD (EQM) and NORTH-WEST CORNER METHOD (NWCM).*

PaperID: ICRTET-HS107

CHEMICAL APPLICATIONS IN ANTI FUNGAL AGENTS AND CLASSIFICATION OF FUNGAL INFECTIONS

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Abstract

Fungal infections are common in human beings and animals. The recent development of novel antifungal agents as significantly contributed to the successful treatment of fungal diseases. Most of these agents are fungistatic and do not kill the fungal cell. Thus facilitating the emergency of resistance species, which further complicate therapy. Alternatively, some of the most effective anti fungal agents are too toxic after continuous use or can only be administered intravenously. The ideal antifungal drug would be non toxic, fungicidal, and amenable to self administration. Anti fungal agents have wider range of applications.

Keywords: *Antifungal agents, fungicidal, candidiasis, Topical medications, Seborrhotic dermatitis.*

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PaperID :ICRTET-HS108

Use of Religion and Myth in R. K. Narayan's Works

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Abstract

R. K. Narayan was born on 10th August, 1906 in Madras in working class south Indian family R.K. Narayan is widely considered to be one of India's greatest English language novelists. The most attractive feature of Narayan's personality is that he is a pure Indian both in spirit and thought. R. K. Narayan is a name in English Literature that does not need any introduction. He appears to be shining like a glittering star in the galaxy of Indian fiction writers who wrote in English. His career as a writer spanned over 60 years. He received a number of awards and honors including the AC Benson Medal from the Royal Society of Literature and the Padma Vibhushan, India's second highest civilian award. Narayan was also nominated to Rajya Sabha, the upper house of India's Parliament. He is widely known for his simple and unpretentious writing style, often compared to William Faulkner. Most of his works show his deep interest in Hindu Religion and Myth. In this research article, a humble attempt has been made analyze the way how Narayan accepts the Hindu Religion and Myth in the lives of his protagonists. He does not alter or modernize the myths but through their symbolic representation shows their timeless relevance as the most immediate form of human experience.

Key words: spirit, thought, unpretentious, modernize, myth, galaxy, symbolic, representation, relevance, spanned.

Paper ID: ICRTET-HS101

Water Resource Management in Agriculture Using Smart Irrigation Scheduling

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Abstract

Agriculture is dependent on fresh water, but India has 17 % of the world population and only 4 % of the world's fresh water resources are available. Effective use of water resources leads to high yield. Water is transferred from the soil to the environment as evaporation and water is transferred through the plants to the environment as transpiration. Water enters into deep soil and this process is termed percolation. The two processes, evaporation and transpiration combinedly is known as evapotranspiration. Penman-Monteith FAO 56 or lysimeters helps to calculate the total water loss in evapotranspiration, percolation and runoff. Evapotranspiration mainly depends on temperature, solar radiation, relative humidity, wind speed and rainfall. IoT sensor helps to monitor the weather parameter. Reinforcement learning take input from IoT sensor and decision are made on when you irrigate and how much to irrigate so that it helps to reduce the water loss by the environment. Irrigation has a directly impact on crop yield. More amount of irrigation leads to soil nutrition loss, changes in soil property, high chance of diseases, major changes in crop growth and yield.

Keywords— Smart irrigation scheduling, Penman-Monteith FAO 56, agriculture sensor network, IoT

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ICRTETMBA008

Classification and Factors Influencing Accounting Systems

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ABSTRACT

This paper provides a brief review about the need for harmonization and the factors that are affecting the adoption of International Accounting Standards. These factors are the Legal System, the Taxation system, the Provider of Finance and culture. As an accounting system we mean the accounting practices a company uses in order to prepare its annual financial reporting. Also we are analyzing in depth the Nobels, (1998) model, which supports, that companies which have more outsider finance are from a weak-equity market and belong to a Class B accounting system (be interested more in creditors and taxes) and are more likely to change to a Class A accounting system (interested more in shareholders and investors, generally in those which have not got an internal relationship with the company).

Key words: Harmonization; Classification; International Accounting Standards.

ICRTETMBA012

Stress Management on Software Company (A Case Study of 3S Technologies, Hyderabad)

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ABSTRACT

In modern life stress is a common problem. The negative effects of stress affect individuals health and performance. Stress refers to any environmental, organizational and individual or internal demands, which require the individual to adjust their behavior pattern. Situations that can result in the experience of stress are called stressors. There are three major sources of stress i.e environmental, individual and organizational. The research instruments that are taken are questionnaires and interviews. This article investigates the relationship between job stress and job satisfaction. The factors of job stress that have been examined under this study include, management role, relationship with others, workload pressure, homework interface, role ambiguity, and performance pressure. The sample consists of 50 employees of different designation in 3S technologies.

Key words: Stress, Job Satisfaction, stress reduction strategies

ICRTETMBA010

A study on investors' attitude towards mutual funds as an investment option

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Abstract In this paper, structure of mutual fund, operation of mutual fund, comparison between investment in mutual fund and bank and calculation of NAV etc. have been considered. In this paper, the impact of various demographic factors on investors' attitude towards mutual fund have been studied. For measuring various phenomena and analyzing the collected data effectively and efficiently for drawing sound conclusions, Chi-square (χ^2) test has been used and for analyzing the various factors responsible for investment in mutual funds, ranking was done on the basis of weighted scores and scoring was also done on the basis of scal

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ICRTETMBA006

A study on implications of Quality of Work life with reference to Varun Motors

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ABSTRACT

Companies are more likely to be successful when all teams are working towards the same objectives. Strategic HR carries out analysis of employees and determines the actions required to increase their value to the company. Strategic human resource management also uses the results of this analysis to develop HR techniques to address employee weaknesses. "Quality of Work Life" is finished at Varun Motors Pvt Ltd. to grasp how ever the standard of Work life programs are a unit taken to the workers is managed at the various levels. The report begins with an associate introduction regarding the importance of quality of Work life in a corporation and therefore the important role it plays in up the performance of workers thereby resulting in structure growth. The human resources are the foremost necessary assets of a corporation. So to realize the goals or objectives of a corporation thus, they have to satisfy the workers with the financial and fringe advantages. Quality of Work life is that the best observe to meet the necessity of workers. Methodology accustomed collect the information in each primary data like questionnaires and interviews and secondary data like books, journals, previous records and The company follows a typical policy of quality of Work life, that is adequate enough and honest. This policies are unitarily versatile and because it have undergone many changes from time to time to suit the necessities of the workers in addition because the organizations. The report more work mates regarding quality of Work life followed by varun motors pvt ltd. The aim of this study is to search out the satisfaction level of workers on good method that is followed by Varun Motor to reinforce the performance of their workers. The right method of quality work life help to achieve the expectations of workers satisfactory levels and it ends up individual and structure development.

Keywords: Job security, Job enrichment, Job analysis, Quality circles, Quality of work life

ICRTETMBA011

Managing Diversity in India

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Abstract

Managing business in the era of globalisation involves handling several strategic issues in human resource management (HRM). Diversity management (DM) has been recognised as one such issue. This paper discusses the criticality of managing diversity in handling HR concerns in the changing global business environment in India. It especially focuses on the ongoing global demographic changes; the shifts in contemporary DM concept from equal opportunities to managing diversity; and content and context of diversity issues in the country. As Indian companies go towards employing global workforce and operate in competition with other players in the global market, DM issues are likely to assume a greater degree of criticality for them as well. A higher incidence of convergence of management practices across countries will also give rise to a greater need for valuing diversity. The paper further argues that presently the Indian discourse on diversity mainly involves issues connected with legal compliance. These too are not quite comprehensive, and most of such laws apply only to the public and government sectors. But gradually especially in the sunrise sectors like the software industry, companies are moving towards building a global workforce. In the long run, Indian employers are likely to feel a greater demand for valuing diversity and thus move from equal opportunity compliance to respecting diversity and building great places to work.

Keywords: Diversity, equal opportunities, valuing diversity, strategic HRM, India

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ICRTETMBA013

Knowledge management and its role in role in higher education

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ABSTRACT

Higher educational institutions access and use knowledge during their processes and activities. The growth in the number of higher educational institutions in India in the last decade has increased competition and the pressure to perform better. This in turn has forced the institutions to recognize the need for knowledge management (KM) initiatives in order to stay ahead in their sphere.

This paper discusses the concept of Knowledge management and its role in the new trends of education. It also explains about Knowledge management, the types of Knowledge management, their Educational trends and efforts made towards making study materials more learner- centred. In response to these trends, colleges and universities are offering new courses via distance and also formal traditional delivery. Effort to share the most recent understandings of Knowledge management in education is changing roles and challenging higher educational institutions to adapt. The increased productivity required by faculties is one of the main driving forces in development of more diverse and effective teaching method.

Keywords: Accounting, enterprise, management, financial, economy.

ICRTETMBA014

A literature review on employee motivation

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Abstract

Research on employee motivation has attracted both the academics and corporate companies from the past few years. In the present study, possible dimensions of motivation have been extracted and explain about its direct and indirect impact on motivation techniques. This study has examined the multidimensionality of motivation from the existing literature and present a conceptual framework based on it and explains about various motivation techniques which are having a positive impact on quality of life, performance of the employee in the organization and employee satisfaction about their work. The originality of this study lies in its theoretical framework where an attempt has made to come up with a construct nature having dimension that are directly or indirectly influences employee motivation. In the previous research papers few dimensions of motivation were used to explain the different model of motivation theory which has direct impact on employee motivation in the organization. However the models need to be validated by using quantitative measures. To make the study more relevant, only those studies were included which were published on motivation in the last few years. In order to study the various issues related to employee motivation, a large body of literature remainly from different journals and books of different author have been taken in.

Key words: Employee motivation, Motivational dimensions, Employee performance, Motivation techniques, Motivation theories.

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ICRTETMBA005

THE INFLUENCE OF WORK- LIFE BALANCE ON EMPLOYEE COMMITMENT

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ABSTRACT

In today's competitive business environment, every organization is facing a problem of attracting and retaining competent human resource. To overcome this, every organization needs to maintain high Quality Work life and satisfactory working environment. Employee commitment is one of the challenges faced by many organizations, both public and private. Retention of productive employees is a major concern of HR professionals and business executives. It is more efficient to retain a quality employee than to recruit, train and orient a replacement employee. A good balance in work and life can play a phenomenal role in the attainment of personal and professional goals and ensure employee commitment in organizations. It has been established that employees report that work is a significant source of stress and they typically feel tense or stressed out during the workday. This study sought to determine the influence of work-life balance on employee commitment. The study was guided by the ERG theory, Herzberg's Two Factor Theory, and Segmentation theory. Descriptive research design was used. The target population comprised of the managers and staff. The study used closed-ended self-administered questionnaires as data collecting instruments. The pilot study was carried out to establish reliability of the research instruments. Data was analyzed quantitatively using the SPSS. From the regression results, growth and development opportunities were found to be the most important determinant of employee commitment. The findings of this study will help human resource planners within public corporations to gain a better understanding of factors that influence employee commitment and which will enable them to plan for improved service delivery.

Keywords: Employee Commitment, Growth and development, Quality of work life, Work-life balance.

ICRTETMBA009

MANAGEMENT ACCOUNTING AND ITS IMPACT


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ABSTRACT

Accounting as a scientific discipline, identifies, records and communicates information that is relevant, reliable and comparable to decisions by the user. Management accounting differs from financial accounting mainly regarding users. Managerial accounting information is needed for internal users, while financial accounting information serves external addresses. The objectives of management accounting are related to meeting the objectives of the organization. Accounting Management helps an organization to make decisions, control, planning and reporting of more qualitative information. Competition, increased services and information technology advances are key factors that have contributed to greater practice of management accounting in the enterprise. This means active participation of management accountants in key processes of the enterprise. Today, their role is very large and the application of ethical standards is mandatory.

Keywords: Accounting, enterprise, management, financial, economy.


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ICRTETMBA019

A STUDY ON INVESTMENT OPPURTUNITIES IN STOCK BROKING COMPANIES AT SHRIRAM INSIGHT

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ABSTRACT

Investment opportunities management is the professional asset management of various securities (shares, bonds and other securities) and other assets (e.g., real estate) in order to meet specified investment goals for the benefit of the investors. Investors may be institutions (insurance companies, pension funds, corporations, charities, educational establishments etc.) or private investors (both directly via investment contracts and more commonly via collective investment schemes e.g. mutual funds or exchange-traded funds). The provision of investment management services includes elements of financial statement analysis, asset selection, stock selection, plan implementation and ongoing monitoring of investments. Coming under the remit of financial services many of the world's largest companies are at least in part investment managers and employ millions of staff.

Fund manager (or investment adviser in the United States) refers to both a firm that provides investment management services and an individual who directs fund management decisions. One needs to invest to earn return on your idle resources and generate a specified sum of money for a specific goal in life and make a provision for an uncertain future. One of the important reasons why one needs to invest wisely is to meet the cost of inflation. Inflation is the rate at which the cost of living increases.

The cost of living is simply what it costs to buy the goods and services you need to live. Inflation causes money to lose value because it will not buy the same amount of a good or service in the future as it does now or did in the past. The sooner one starts investing the better. By investing early you allow your investments more time to grow, whereby the concept of compounding increases your income, by accumulating the principal and the interest or dividend earned on it, year after year. The three golden rules for all investors. This project will also help to understand the investors face before investing in any of the investment tools and thus to scrutinize the important aspects for the investors before investing that further helped in analyzing the relation between the features of the products and the investors' requirements.

ICRTETMBA021

A STUDY ON THE IMPACT OF TEAM WORK PERFORMANCE OF THE EMPLOYEE

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ABSTRACT

Why are some teams successful and others unsuccessful? What criteria or attributes are needed for success? Contemporary teaching and learning practice over the past few years in higher education institutions has seen a proliferation of open-ended constructivist learning designs that incorporate collaboration. This has promoted the need for identifying essential attributes needed for successful teamwork. This study reviews the literature with a view of identifying a framework that educators can use to help promote effective teamwork in their classes. A case study is used to investigate two teams of final year multimedia students completing a project-based unit, in which teamwork was an essential ingredient and immersed in an authentic context. Attributes gleaned from the literature for successful teamwork was used to compare the two diverse teams. Research has provided a number of attributes required for successful teamwork. Many of these attributes have been consistently identified in the


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literature. Table 1 provides a summary of literature on the successful attributes needed for effective teamwork as follows:

- Commitment to team success and shared goals - team members are committed to the success of the team and their shared goals for the project. Successful teams are motivated, engaged and aim to achieve at the highest level;
- Interdependence - team members need to create an environment where together they can contribute far more than as individuals. A positive interdependent team environment brings out the best in each person enabling the team to achieve their goals at a far superior level (Johnson & Johnson, 1995, 1999). Individuals promote and encourage their fellow team members to achieve, contribute, and learn;
- Interpersonal Skills includes the ability to discuss issues openly with team members, be honest, trustworthy, supportive and show respect and commitment to the team and to its individuals. Fostering a caring work environment is important including the ability to work effectively with other team members;
- Commitment to team processes, leadership & accountability - team members need to be accountable for their contribution to the team and the project. They need to be aware of team processes, best practice and new ideas. Effective leadership is essential for team success including shared decision-making and problem solving.

ICRTETMBA024

Structure of Indian Financial Sector

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Abstract

This paper traces the story of Indian financial sector over the period 1950-2015. In identifying the trends and turns of Indian financial sector, the paper adopts a three period classification viz., (a) the 1950s and 1960s, which exhibited some elements of instability associated with laissez faire but underdeveloped banking; (b) the 1970s and 1980s that experienced the process of financial development across the country under government auspices, accompanied by a degree of financial repression; and (c) the period since the 1990s till date, that has been characterized by gradual and calibrated financial deepening and liberalization. Focusing more the third period, the paper argues that as a consequence of successive reforms over the past 25 years, there has been significant progress in making interest and exchange rates largely market determined, though the exchange rate regime remains one of managed float, and some interest rates remain administered. Considerable competition has been introduced in the banking sector through new private sector banks but public sector banks continue have a dominant share in the market. Contractual savings systems have been improved but pension funds in India are still in their infancy. Similarly, despite the introduction of new private sector insurance companies' coverage of insurance can expand much further, which would also provide greater depth to the financial markets. The extent of development along all the segments of the financial market has not been uniform. While the equity market is quite developed, activities in the private debt market are predominantly confined to private placement form and continued to be limited to the blue-chip companies. Going forward, the future areas for development in the Indian financial sector would include further reduction of public ownership in banks and insurance companies, expansion of the contractual savings system through more rapid expansion of the insurance and pension systems, greater spread of mutual funds, and development of institutional investors. It is only then that the both the equity and debt markets will display greater breadth as well as depth, along with greater domestic liquidity. At the same time, while reforming the financial sector, Indian authorities had to constantly keep the issues of equity and efficiency in mind.

Key words: India, Financial Sector Reforms, Banks, Insurance, Pension Funds, Financial Markets. JEL


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ICRTETMBA023

Role of Performance Appraisal System on Employees Motivation

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Abstract

In many organizations, reward decisions depend on subjective performance evaluations. However, evaluating an employee's performance is often difficult. In this paper, we develop a model in which the employee is uncertain about his own performance and about the manager's ability to assess him. The manager gives an employee a performance appraisal with a view of affecting the employee's Self-perception, and the employee's perception of the manager's ability to assess performance. We examine how performance appraisals affect the employee's future performance. The predictions of our model are consistent with various empirical findings. These comprise (i) the observation that managers tend to give positive appraisals, (ii) the finding that on average positive appraisals motivate more than negative appraisals, and (iii) the observation that the effects of appraisals depend on the employee's perception of the manager's ability to assess performance accurately.

Key Words: Subjective Performance Appraisal, Credibility, Cheap Talk

ICRTETMBA022

IT RISK MANAGEMENT

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ABSTRACT

More and more companies are concern about their IT risks nowadays, especially the companies relying on IS (Information System) in business. The objective of this thesis focused on what risk in the case company should be paid the most attention to. In short, the aim is to find out what the biggest threat was in the case company and the reason. Moreover, when exploring the answer, it was possible to understand the process of managing IT risks.

The general methodology of this study is deductive research method. It aimed to check if the general IT risks found in literature in the case company. Moreover, the researcher was to develop the theory that organized cyber criminals and hackers are the riskiest security problem in business. Interviews and observation were carried out collect the data. The study revealed that, inadequate anti-virus software protection is the biggest threat for the case company, and because the manager decided to ignore the existing problems, it will be an even bigger threat in the future.

Key words: IT risks, risk management, software protection.

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ICRTETMBA018

AN EMPIRICAL STUDY ON COMPARATIVE PERFORMANCE OF GOLD ETFs AND CPSE ETF AS AGAINST CNX NIFTY50 INDEX

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ABSTRACT

Exchange Traded Funds (ETFs) are diversified mutual fund portfolios that trade like stocks on the stock exchange. As stock markets are highly volatile and stock picking is difficult for an investor, investing in an ETF is relatively safe. Gold products are considered a highly valuable mean of investment in present scenario of financial markets.

There are many alternatives to invest in gold like Gold Exchange Traded Funds, Gold Fund of Funds, e-gold, stocks of gold mining companies, gold futures, gold bars, gold coins, gold jewellery, etc. Amongst these, the Gold Exchange Traded Funds have emerged as most successful source for investment in gold and ETFs industry has shown rapid growth. In India, ETF segment got a boost in 2014, when the government decided to divest in Central Public Sector Enterprises (CPSEs) through the ETF route. CPSE ETF, a special mutual fund was launched to help the government disinvest in the public sector companies. The ETF shall track the performance of the Nifty CPSE Index. Nifty CPSE Index is constructed in order to facilitate Government of India's initiative to disinvest some of its stake in selected CPSEs.

It is important to diversify a portfolio across different asset classes, since all assets don't move in the same direction. Optimal diversification helps in reducing risk as well as creating wealth to an investor.

This research paper is an attempt to examine the performance of Gold ETFs in relation to its benchmark, i.e. physical gold and performance of CPSE ETF with its market index, Nifty CPSE index. The study also attempts to compare the performance of Gold ETFs and CPSE ETF. The performance of these two ETFs is compared against broad market index, CNX Nifty50.

The performance of Gold ETF, CPSE ETF, Gold, Nifty CPSE Index and CNX Nifty50 Index is gauged in terms of risk and return, and beta and alpha. Mutual fund performance evaluation tools are also deployed. The period of study is five years, January 2015 to December 2019. Monthly returns are arrived at by taking into consideration closing prices available on the website of National Stock Exchange. Closing prices of Gold ETFs, CPSE ETF, Nifty CPSE Index and CNX Nifty50 market index are been used. Gold prices from the bullion market are considered.

The findings and conclusion of the study will facilitate the investors in taking decision how to optimally diversify their portfolio of investment. The findings will also help the small investors to choose from the given investment options.

ICRTETMBA003

A Study on Mobile Banking Service Quality and Its Impact On Customer Relationship

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Abstract

A new communications technology is redefining the convergence of telecommunications and computing.


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Technology-based innovations will be the key determinant in offering diversified and customized banking services to their varied customer portfolios, at a reduced cost. Even if it is convergent with the assumptions of the paradigm of relationships, it should be indicated that some banking products are based on advanced solutions that may surpass real market demands. We examine the development of technology in the banking sector.

Index Terms—Technology, Innovations, Banking Sector, India

ICRTETMBA025

A REVIEW OF RELATED LITERATURE ON GOLD ETFs (GOLD EXCHANGE TRADED FUNDS)

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ABSTRACT

For centuries, Indians have had a strong affinity for gold. However, it was only in the year 2007 when India launched its first Gold ETF (Gold BeES), there was a tremendous boost in investment demand for gold. The underlying asset of Gold ETF is gold. Also, Gold ETFs gives investor an exposure to Indian gold market. Gold has always been a popular investment destination for various types of investors, standing out as a tried and true safe haven that generally performs well in times of equity market turbulence as well as an alternative to fiat currencies that have occasionally come under pressure. But the development of Exchange Traded Funds has given gold a significant tremendous boost in the investing world, and the combination of precious metals exposure and the exchange-traded structure has proven to be an extremely efficient financial security that is appealing to all types of investors. Gold ETFs are an excellent choice of investment for investors looking to beat inflation in the long-run. Moreover, gold as an asset is less volatile when compared to equities. This research paper explores into the earlier research done on Exchange Traded Funds (ETFs) focussing primarily on Gold Exchange Traded Funds (Gold ETFs). The purpose of this study is to review the existing related literature specifically on Gold ETFs.

ICRTETMBA027

PRESENT TREND MARKETING AND CUSTOMER SATISFACTION

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ABSTRACT

This document is an overview of current trends in digital communication. Digital marketing and its tools (online advertising, online video and interactive television advertising, mobile marketing, buzz marketing, websites and social media) are perfect for communication with all stakeholders, and at first place with customers. This days the main challenge of companies and digital marketing communication is being noticed.

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Digital technologies match traditional communication and media channels, beside that they span the marketing mix. Accordingly, digital communication become significant element of marketing communication. Companies can hardly gain profit without getting noticed, especially if the target audience is young people that are digital natives. The originality of this paper is its focus on new trends in digital communication and their impact on companies processes to explore how a strategic adoption of digital communication tools can influence creating strategies and action plans.

Any organization has to listen to its external customers and stakeholders. ... Customer satisfaction can be addressed as a strategic business development tool and it does have a positive effect on an organization's profitability.


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Paper ID: ICRTET-ME 003

NEW TRENDS IN MANUFACTURING RAPID PROTOTYPING – AS AN APPLICATION IN MEDICINE

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ABSTARCT

The most interesting and challenging applications of rapid prototyping technologies are in the field of medicine. RP medical models have found application for planning treatment for complex surgery procedures, training, surgical simulation, diagnosis, design and manufacturing of implants as well as medical tools. This paper explores and presents the procedure for making medical models using RP, medical rapid prototyping technologies application in different fields of medicine and the future trends in this area.

Keywords— Rapid Prototyping (RP), Computer Tomography (CT), DICOM, Segmentation, Medical Modeling, 3D Medical Model

Paper ID: ICRTET-ME 004

CFD ANALYSIS OF CONVERGENT-DIVERGENT NOZZLE


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ABSTARCT

In this thesis, flow through an axisymmetric Convergent-Divergent nozzle is carried out both numerically and analytically. Numerical analysis has been carried out with the help of CFD tools available (Gambit-2.4.6 for modeling and Meshing, FLUENT13.0 for flow simulation). Analytical approach: Solving 1-D isentropic compressible flow equations. This study involves the variations in fluid properties, like pressure, Temperature, Density, Reynolds number and corresponding Mach number along the nozzle. Numerical results are validated with the Analytical solutions.

Keywords: Convergent-Divergent nozzle, Numerical analysis, Analytical approach, isentropic compressible flow


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Paper ID: ICRTET-ME 005

VIBRATORY STRESS RELIEF IN MANUFACTURING PROCESSES

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ABSTRACT

A finite element model was developed to predict weld residual stress and simulate the vibratory stress relief. Both resonant and non-resonant vibration stress relief were studied to better understand the mechanism of vibration stress relief. The effect of process parameters, vibration amplitude and frequency, of vibration stress relief on weld residual stress reduction was investigated with the developed model. It was found that both resonant and non resonant vibration stress relief can relieve weld residual stresses. For the nonresonant vibration, the stress reduction strongly depends on the vibration's amplitude. For the resonant vibration, the vibration's frequency is essential to stress relief. The vibration's frequency should be close to the structure's natural frequency for the desired vibration mode.

Keywords: residual stress, frequency, resonant vibration, Vibratory stress relief, Thermal stress relief.

Paper ID: ICRTET-ME 006

INVESTIGATION OF MECHANICAL PROPERTIES ON STAINLESS STEEL-304 USING HVOF SPRAY COATING

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Abstract

The main objective of this work is to enhance the best wear, erosion resistance and hardness properties on a given stainless steel specimen with a composite cermet called the 86,10,4 WC-Co-Cr (86% Tungsten Carbide+10% Cobalt+4% Chromium) powder by using a thermal spray process called HVOF (High Velocity Oxy-Fuel) spray coating. HVOF thermal spray process uses high gas pressure and extremely high velocity to produce a very dense coating. HVOF systems have internal combustion chambers where a mixture of fuel (gas or liquid) and oxygen are combusted. The resultant combustion products are expanded through a nozzle where they attain supersonic velocities as evidenced by the formation of "shock diamonds" at the exit of the barrel. The guarantee a high quality of protection against wear, micro hardness and erosion & to increase its use in industrial operations that want to optimize some characteristics of coating materials. The average value of wear resistance of the substrate material was increased to 5151 from 4347 (1/k).

Keywords: HVOF, Wear resistant coatings, hard coatings.


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Paper ID: ICRTE-07

DESIGN AND ANALYSIS OF A VERTICAL AXIS WIND TURBINE BLADE

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Abstract

One of the most important design parameters for cost-effective VAWT is selection of blade material. VAWT blades must be produced at moderate cost for the resulting energy to be competitive in price and the blade should last during the predicted lifetime (usually between 20 and 30 years). At present, Aluminum blades fabricated by extrusion and bending are the most common type of VAWT materials.

Then available prospective materials are shortlisted and assessed. Subsequently, comparisons are made between the available materials based on their mechanical properties and costs. Finally, comparisons have been made between the design features of a VAWT with Aluminum and the alternative material blades using one of the prospective airfoils. The results of the design analyses demonstrate the superiority of the alternative blade material over conventionally used Aluminum. Structural and modal analyses have been conducted using advanced finite element methods.

Keywords: VAWT, Finite Element Method, Aluminium blades

Paper ID: ICRTE-08

INVESTIGATION ON MECHANICAL PROPERTIES OF Al 7178 METAL MATRIX REINFORCED WITH ALUMINA OXIDE

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ABSTRACT

Aluminum metal matrix reinforced within Aluminum Oxide (Al₂O₃) particles are being used for a high performance application such as automotive, aerospace, military, electrical industries and marine industries. In the current paper aluminum alloy 7178 was taken as base metal (matrix) and Aluminum Oxide was selected as reinforcement. Aluminum Oxide (Al₂O₃) powder of approximately 40µm particle size was reinforced in an aluminum alloy matrix to produce composites with 3%, 6%, 9%, and 12% of Aluminum Oxide weight percentage

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with the stir casting technique. The fabricated composite specimen was subjected to series of tests are evaluated the Mechanical properties such as Tensile strength, Hardness, and Microstructure was studied under optical microscope. It was observed from the results that effect on mechanical properties such as Tensile strength and Hardness with the various weight percentages of reinforcement particles in the aluminum matrix and distribution of reinforcement particles in aluminum matrix is fairly uniform.

Key words: Al 7178, alumina oxide (Al₂O₃), mechanical properties (tensile strength, hardness and microstructure) and stir casting technique.

Paper ID: ICRTET-ME 009

SUPERIOR EQUIPMENT AND VARNISH OUTLOOK FOR GAS TURBINE APPLICATIONS

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ABSTARCT

The need for very specific hardness / hardness materials can only be satisfied by design concepts using reinforced compounds. Carbon fiber made of high-strength and durable silicon in a high-temperature titanium matrix is one of the main candidates whose development will be described. Design concepts for high-pressure turbines that incorporate thermal protection layers for ceramics, i.e. heat-insulating coatings, will go beyond the natural limits provided by the melting point of Ni-based super-turbine blades. The sophisticated design of the aerodynamic engine will focus on reducing specific fuel consumption and increasing the weight-to-weight ratio. In the end, this requires an increase in pressure ratios, as well as higher operating temperatures, and certainly poses a major challenge to the structural design and materials used. High-capacity materials for high temperatures are required, as are very light structures. Reducing the weight of the pneumatic dynamic motor requires a new compact compressor design with a few phases. Gas turbine blades are designed for cooling methods, as well as for cooling films in external cooling and thermal cooling in internal cooling. The turbine blade is designed with four-hole and six-hole heat cooling. The film cools the air in the blade through several small holes in the chassis. The current material used for the blade is chrome-plated steel. Here, it is replaced by composite materials of ceramic matrix and silicon carbide. Advanced evaporation treatment using electron beam technology is the preferred choice for manufacturing these coatings in highly rotating parts. However, considerable efforts are still needed to improve these coatings, make them more reliable, and thus achieve a philosophy designed to fully exploit their potential.

Keywords: gas turbine, rotor blade, steady state thermal analysis, fiber-reinforced composites, thermal barrier coating.


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Paper ID: ICRTET-ME 010

ACCELERATE AND SIGNALING FRAMEWORK FOR INSTANT GROUND CLEARANCE

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ABSTARCT

This examination paper predominantly centers around the structure, improvement and assessment of a programmed movable ground freedom framework. This framework is meant to improve vehicle execution on off-road conditions from harsh to level surfaces. The proposed structure is finished by utilizing pneumatic chamber which is set between wheel get together and assemblage of vehicle. Two innovation is been utilized, one is that vehicle will lift consequently dependent on speed of the vehicle and other one is that vehicle will identify the knocks out and about. This innovation can be embraced for all kind four wheeler vehicles. By using the idea of Adjustable Ground Clearance Mechanism which will demonstrate helpful impact to the rough terrain vehicles to change the ground leeway as indicated by landscape. Here this paper tells how programmed lift is accomplished through pneumatics with the assistance of sensors.

Keywords: Pneumatic Cylinder, spring, Ground Clearance, Spur Gear, IR Sensors, Relay Switches.

Paper ID: ICRTET-ME 011

ANDRO HUMANIOD CERAMIC AIRCRAFTED ROBOTS

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ABSTARCT

To developing of this kind of ANDRO HUMANIOD CERAMIC AIRCRAFTED ROBOTS is to overcome the drawbacks caused by the normal robots, such as lack of capacity to withstand high temperatures and smaller life times, and also saving the time etc. it also working as like an aircraft and it will be movies suddenly from one place to another place and, main purpose to save human life. By using these robots in a proper manner we should have more applications in future, we should be reach one step development in scientific manner. And our future should be bright. and save the life of human and its very helpful for growth of any country

Keywords: Ceramics materials, Robots, Aircraft


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Paper ID: ICRTET-ME 012

A SCOPE OF INDUSTRIAL ROBOTIC AUTOMATION IN THE FOURTH INDUSTRIAL REVOLUTION

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Abstarct

Digitization of assembling process is the requirement for the present industry. Industry 4.0 is the fourth modern transformation that was first presented in Germany. This paper shows a survey on the advances of mechanical and computerization innovation in accomplishing industry 4.0. Numerous organizations, look into focuses, and colleges recognize that apply autonomy and computerization innovation is the premise of modern assembling and a significant driver for Industry 4.0.The assembling ventures are as of now changing from large scale manufacturing to redid creation. The goal of this paper is to give an outline on the headway in the advancement of assembling process by nonstop upgrade in the mechanical innovation and control robotization in Industry 4.0 for accomplishing best outcomes for any assembling procedure. Ideally, from this report, designing understudies would be presented to new innovations of innovation transformation just as to make the business mind for a superior future.

Keywords— Industry 4.0; robotics and automation; Internet of Things (IoT) power; smart factories and smart production,

Paper ID: ICRTET-ME 013

HEAT FLOW ANALYSIS OF CONCENTRIC TUBE PRALLEL FLOW HEAT EXCHANGER WITH HELICAL INTERRUPTER

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ABSTARCT

The heat exchanger is an important device in almost all of the mechanical industry, as in case of process industries it is a key element. thus from long many researchers in this area are working to improve the performance of these heat exchangers in terms of heat exchangers heat transfer rate. Here it is an attempt to enhance the heat rate in concentric tube parallel flow heat exchanger by inserting a helical interrupter inside the heat exchanger tube.

Keywords— Heat exchanger, Concentric tube, Parallel flow, Wire coil helical Interrupter inserts


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Paper ID: ICRTET-ME 014

PROCEDURES OF LEAN AND GREEN MANUFACTURING

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ABSTARCT

In the present compititive world, pretty much every assembling organizations is in the race of winning cash or the expense of dirtying and harming condition. Lean assembling has been utilized to improve forms, to decrease process squander, to get greatest yield and to acquire benefit. Assembling organizations are worried about changing over materials and work into products and ventures as productively as conceivable to amplify the benefit of an association. It is so as to make improved variants that utilize assets without influencing the administrations conveyed or item made. Green assembling is a strategy for assembling that limits waste and contamination. Lean assembling is the framework which points in disposal of the loss from the framework with a deliberate and constant methodology. Right now the strategies of lean assembling framework and green assembling framework has been considered.

Keywords: Lean Manufacturing, Green Manufacturing, Green Manufacturing, Waste

Paper ID: ICRTET - ME 015

DESIGN OF A SUSPENSION SYSTEM

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ABSTARCT

The Shock absorber is the most shock impulse and dissipates important part in any vehicle. It handles kinetic energy. It reduces the amplitude of disturbances and improved ride quality. The spring is compressed quickly when the wheel strikes the bump. The compressed spring rebound to its normal dimension when load is removed.

The spring goes down below its normal height when the weight of the vehicle pushes the spring down. This, in turn, causes the spring to rebound again. The spring bouncing process occurs over and over every less each time, until the up-and-down movement finally stops.

Keywords— Shock absorber, Springs, Suspension system, CATIA, Vehicle


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Lundapur (V), Ghatkesar (M), Medchal ()

Paper ID: ICRTET-ME 016

PERFORMANCE TEST ON FOUR STROKE SINGLE CYLINDER WATER COOLED DIESEL ENGINE BY METHYL ESTERS OF OLIVE OIL AND CASTOR OIL WITH ADDITIVE

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ABSTARCT

With increase in the demand of petroleum products the prices of petrol and diesel are increasing worldwide. This trend is expected in years to come as the resources are also depleting. Hence alternative sources of energy for running our generators, automobiles etc. are being considered worldwide. The possibility of obtaining oil from plant resources has aroused a great interest and in several countries, vegetable oil after esterification being used as "Biodiesel". In the present work, Castor oil and Olive oils are blended with diesel and used as an alternate fuel for CI engines.

Different proportions of fuel blends have been produced by the process of blending. The fuel properties of each blend are determined. The load test on 4-Stroke Diesel engine with rope brake dynamometer using blends of Castor oil and Olive oil with diesel are done. The performance parameters such as Power, Specific Fuel Consumption, Thermal Efficiencies, Mechanical Efficiency and Mean Effective Pressures are calculated based on the experimental observations of the engine and compared for different blends and also added additive to enhance the efficiency of engine. The sustainability of using alternate fuels in Diesel engines, especially the potential use of Castor oil and Olive oil as biodiesel have been brought to the fore through this work.

Keywords—component, formatting, style, styling, insert (key words)

Paper ID: ICRTET - ME 017

EVALUATION OF MECHANICAL PROPERTIES OF HYBRID NATURAL FIBER REINFORCED POLYMER MATRIX COMPOSITE

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ABSTARCT

The present experimental study aims at learning the behaviour of hybrid natural fiber composites. The specimens are prepared by hand lay process using banana and jute fibers cluster as reinforcement, epoxy resin as matrix and hardener as Aradur HY951 to harden the resin which otherwise remains sticky. Samples of banana, jute and the stacking plies of banana and jute (BJB, JBJ) fibers are prepared by hand layup method. The test specimens are fabricated according to ASTM standards and experimental investigations were carried out. Mechanical properties of the material such as Tensile strength, Impact strength, Flexural strength and Hardness were obtained from the experimental investigation. And also made comparison between chemically treated and untreated hybrid composite

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materials for moisture absorption through Water absorption test. The test results shows that jute/banana/jute hybrid composite having better properties than the other three composites and it was found to be superior in all aspects.

Keywords: Banana, Jute, Polymer matrix composites and mechanical properties.

Paper ID: ICRTET - ME 018

PATH PLANNING ANALYSIS ON MOVING OBSTACLES OF ROBOTS


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ABSTRACT

The method consists of two fuzzy level controllers architecture based on a fuzzy probabilistic control and a Adaptive Neuro-Fuzzy Inference System (ANFIS). Each robot has low level probabilistic fuzzy controller to eliminate the stochastic uncertainties as well as to make the multi-robots team navigates from the start point to the target point without any dangerous collision. In addition, the robot collaboration scheme is highly depends on the conditions of each robot, such as its position and velocity. However, the conventional method does not actively cope with variable situations since each robot has difficulty to recognize the moving robot around it as an obstacle or cooperative robot. To compensate for these shortcomings, we apply Deep q learning to strengthen the learning algorithm combined with CNN algorithm, which is needed to analyze the situation efficiently. This article aims to bring a brief review of the state-of-the-art NNs for the complex nonlinear systems by summarizing recent progress of NNs in both theory and practical applications. Specifically, this survey also reviews a number of NN based robot control algorithms, including NN based manipulator control, NN based human-robot interaction, and NN based cognitive control. Especially, the history and applications of numerous heuristic methods in MP is investigated. Simultaneously, a global backtracking mechanism guides the robot to move to the next unvisited area quickly taking the use of the explored global environmental information. What's more, the authors extend their CCPP algorithm to a multi-robot system with a market-based bidding process which could deploy the coverage time. Experiments of apartment-like scenes show that the authors' proposed algorithm can guarantee an efficient collision-free coverage in dynamic environments. The proposed method performs better than related approaches in coverage rate and overlap length.

Keywords: Fuzzy level controllers, Adaptive Neuro-Fuzzy Inference System, CNN algorithm, Deep q learning, CCPP algorithm


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Paper ID: ICRTET - ME 019

STATIC TESTING OF SOLID FUEL ROCKET ENGINE

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ABSTRACT

Rocket engine is constructed with nozzle as integral part of the casing and fuel grain is loaded into the chamber and sealed off with a bulk head. The fuel selected is table sugar ($C_{12}H_{22}O_{11}$) and mixed with an oxidizer Potassium Nitrate (KNO_3). The fuel grain is prepared by wet mixing and loaded into the casing. Thrust is measured by placing a load cell in front of rocket engine. A maximum thrust of 56 N is obtained. A serious wear at the throat of the nozzle is observed after single firing of the rocket motor reducing thrust in the subsequent firings.

Key words: Solid fuel, Potassium Nitrate, Fuel Grain, Load cell, Thrust, Impulse

Paper ID: ICRTET - ME 020

STUDY OF A SOLAR PARABOLIC COLLECTOR WITH DIFFERENT ABSORBER MATERIALS

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ABSTARCT

The energy is always a need to continue the life cycle with low cost and high efficiencies at the end of the day output. And engineering is always in the hunt of the new and best technology to furnish the vast and clean output which should be obviously friendly to the nature. So, it is intended to build a machine which can give more efficient and clean energy with low cost, powerful and also friendly to the nature, for that it is simple to switch the solar energy system. As everyone knows that the solar energy is enormous and abandon in nature and some thousand watts of heat energy is transmitted to our earth from the sun in the form of light every day. The PTSC (Parabolic Trough Solar Collector) technology is very useful as it is used for approximately all solar energy applications such as steam and power generation, water heating, air heating etc. A model of solar collector setup has to be developed with different materials of absorber tube and analysis of the performance of the solar parabolic trough collector.

The absorber tube material is selected based on the high thermal conductivity like Aluminum, copper. Measurements of total direct radiation on the plane of the collector, ambient temperature, water flow rate, and inlet and outlet temperatures of the water inside the absorber tube are collected and employed in studying the performance of the solar parabolic trough collector.

Keywords – Solar Energy, Parabolic Collector, Thermal Performance, Thermal conductivity

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Paper ID: ICRTEET - ME 021

MACHINE LEARNING TECHNIQUES FOR MOTION ANALYSIS OFFATIGUE FROM MANUAL MATERIAL HANDLINGOPERATIONSUSING THREE-D MOTION CAPTURE DATA

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ABSTARCT

Industrial Revolution 4.0 is described as the interconnection of Information, Communications Technologies (ICT) and factory ground employees. Workers in the fabric coping with industry are regularly problem to repetitiv motions that reason exhaustion (or fatigue) which leads to paintings-associated musculoskeletal problem (WMSDs). The maximum common repetitive motions are lifting, pulling, pushing, carrying and taking wall withload. In this studies records is accumulated as time-stamped movement statistics the usage of infrared camer at a fee of 100Hz whilst a topic performs one of the repetitive motions (i.E. Lifting). The facts is a combination xyz-coordinates of 39 reflective markers. This effects in 117 facts points for each frame captured. Since the motions occur over time for a duration of time, this facts is used as input to a time-collection device studying (M) model inclusive of Recurrent Neural Network (RNN). Using this version, this paper evaluates system learnin techniques, primarily based on RNN, to assess the fatigue aspect as a result of repetitive motions.

Keywords— industrial revolution 4.0, manual material handling, fatigue, machine learning, recurrent neur network, motion capture

Paper ID: ICRTEET - ME 022

EXPERIMENTAL ANALYSIS ON MECHANICAL BEHAVIOUR OF S-GLASS, FLAX AND ASBESTOS POWDER REINFORCED EPOXY POLYMER MATRIX COMPOSITES

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ABSTARCT

The aim of our work is to investigate the effect of change in mechanical properties of Flax and S-gli polymer matrix composites when asbestos powder is added to it. It has been undertaken with an objective to explc the use of flax as one of the composite material as a low cost option. Different types of tests will be conducted in t

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Paper ID: ICRTET - ME 024

DESIGN AND ANALYSIS OF PRESS TOOLS FOR A THERMOSTAT LEVER COMPONENT

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ABSTARCT

Press tools are used to fabricate sheet metals into required shape by various press operations also called cold stamping. A device is used for punching out sheet metal components such as levers from the stock strip used the lever mechanism of thermostat. A thermostat is a device automatically operates an electrical switch mechanism in response to sensed changes in temperature in response to the remote temperature sensor controller which the switching mechanism is actuated in response to a certain movement of the lever mechanism. The primary objective of the paper is to design progressive and bending tools or dies that combine maximum production produce the component and least maintenance with "lowest feasible cost, that exceeds the expectations of customer in aspects like Quality, Cost, for the desired life. JDP TOOL TECH has got a project to design press tools for thermostat lever. This paper presents CAD analysis and design calculations for press tools for the thermostat lever mechanism.

Keywords: Press tools, Cold stamping, Progressive tools, CAD analysis, Thermostat lever mechanism

Paper ID: ICRTET - ME 025

DESIGN AND STRESS ANALYSIS OF IC ENGINE CAMSHAFT

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ABSTARCT

Camshaft is used in the engine for transfer's motion to inlet & exhaust valve. If transfer of motion is proper then the strokes of the engine will not do in proper way. It also effects on performance of engine. To make work of camshaft in precise way, it is required in order designing a good mechanism linkage camshaft. In four strokes engine one of the most important component is camshaft, such an important subject and that over the year's subject of extensive research.

In this study, Design of Camshaft is done as per power stroke and suction stroke and its model is done in CATIA and Static and Modal Analysis is carried in ANSYS. By varying Materials like Aluminum A & Stainless Steel and find out which is best material Suits for design.

Keywords: Static analysis, Camshaft, Modal analysis, stainless steel, ANSYS, CATIA


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OPTIMIZATION OF OPERATING PARAMETERS (ALUMINIUM) IN CNC TURNING

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ABSTRACT

In any machining process, apart from obtaining the accurate dimensions, achieving a good surface quality and improved metal removal rate are also of utmost importance. A machining process involves many process parameters which directly or indirectly influence the quality of the product. Metal Removal Rate and Surface Roughness in turning process are varied due to various parameters of which feed, speed, depth of cut are important ones. A precise knowledge of these optimum parameters would facilitate to reduce the machining costs and improve product quality. Extensive study has been conducted in the past to optimize the process parameters in any machining process to have the best product. Current investigation on turning process is a Response Surface Optimization technique applied on the most effective process parameters i.e. feed, cutting speed, depth of cut and type of material, while machining (Aluminium alloy and Resin) with high speed steel as cutting tool. Main effect plots are generated and analyzed to find out the relationship between them. The details of experimentation and analysis are given in the following context. Response Surface Design is a powerful and efficient method for optimizing quality and performance output of manufacturing processes, thus a powerful tool for meeting this challenge. The present study discusses an investigation into the use of Response Surface Design for optimizing the output parameters (Surface Roughness and Metal Removal rate) generated by a CNC turning operation. The present study utilizes a standard experimental design for determining the optimum turning parameters. Controlled factors include spindle speed, feed rate, depth of cut and material. After experimentally turning samples (Aluminium alloy and Resin), using the selected experimental design and parameters, this study produced a verified combination of controlled factors and a predictive equations for determining Metal Removal Rate and surface roughness for the selected materials with a given set of parameters. In today's rapidly changing scenario of manufacturing industries, applications of optimization techniques in metal cutting processes was essential for a manufacturing unit to respond effectively to severe competitiveness and increasing demand of quality product in the market. Optimization methods in metal cutting processes, considered to be a vital tool for continual improvement of output quality in products.

This study focused in finding the optimum cutting speed that will produce the best surface finish and improved metal removal rate for different materials. Lathe machine was used to conduct the experiment. Selecting the wrong cutting parameter may lead to several negative effects. For example, high maintenance cost of the Lathe machine, poor surface finish, shorter tool life, low production rate, material waste and increase production cost. In order to find out the optimum cutting speed for each material, there were other cutting parameters needed to be constant, such as feed rate, depth of cut and diameter. In machining operation, the quality of surface finish was an important requirement for many turned parts. Thus, the choice of optimized cutting parameters is very important for controlling the required surface quality. The focus of this study is to find a correlation between the output parameters (Metal Removal Rate and Surface Roughness) and cutting speed, feed and depth of cut for the two different materials. Response Surface Methodology (RSM) has been applied to determine the optimum machining parameters leading to minimum surface roughness and maximum Metal Removal Rate in turning process on Aluminium alloy and Resin.

Keywords: Metal Removal Rate, Surface Roughness, Optimization methods, Response Surface Methodology

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BORDER PROTECTION ROBOT USING ARDUINO

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ABSTRACT:

This project is based on a Security System which is fabricated for the Border Security using Arduino. The main purpose of this project is to describe you how this system works, how it helps the soldiers to secure the borders of our country. This is an electronic system which utilizes the ultrasonic waves uses the technique of echolocation which is controlled by Arduino board to determine the altitude, range, direction, or speed of both moving and immovable objects. This is implemented on different fencing sections of border, on the places where there is no fencing on border lines & where patrolling of the soldiers is difficult or even impossible. The detection range of the proposed system is tested up to 10m with the angle of rotation from (0 to +180) and (180 to 0) degrees This system is fully automated and able to work continuously after the detection of intrusion and firing the laser mounted on the robot. This system can also be easily implemented on the homes for personal home security and in the banks, storage sites, safes, vaults etc.


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ARDUINO BASED ROBOT CONTROL USING INTERNET OF THINGS

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ABSTRACT :

This work describes a new approach for a course and laboratory designed to allow students to develop low-cost prototypes of robotic and other embedded devices that feature Internet connectivity, I/O, networking, a Real-Time Operating System (RTOS), and object-oriented C/C++. The Application Programming Interface (API) libraries provided permit students to work at a higher level of abstraction. A low-cost 32-bit SOC RISC microcontroller module with flash memory, numerous I/O interfaces, and on-chip networking hardware is used to build prototypes. A cloud-based C/C++ compiler is used for software development. All student files are stored on a server, and any Web browser can be used for software development. Breadboards are used in laboratory projects to rapidly build prototypes of robots and embedded devices using the microcontroller, networking, and other I/O subsystems on small breakout boards. The commercial breakout boards used provide a large assortment of modern sensors, drivers, display ICs, and external I/O connectors. Resources provided include e-Books and laboratory assignments with schematics and sample microcontroller application code for each breakout board.


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SMART VEHICLE COMMUNICATION

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ABSTRACT:

The project titled as SMART VEHICLE COMMUNICATION is arduino based system. By this advanced technology we can get accurate information about the collision and short circuit taken place in the vehicle. This system combines advanced hardware design and sophisticated electronic control technology into a compact, reliable package. In this project a vibration sensor is used as an accident detector. When the vehicle meets with an accident, the vibrating sensors generate the signal, this signal is being compared with the threshold values. If the value generated exceeds the threshold it is recognized as accident and this information is immediately informed to their relative persons through GSM as a message to mobile. In this system vibration sensors are used for detecting range of collision, Similarly the short circuit sensors will detect the short circuited condition and intimated through the sms in which disaster can be minimized. Vibration Sensors data will be in analog form so it needs to be converted to digital, which is fulfilled through A/D Converter, and this digital data is being sent to microcontroller there it is compared with the threshold values, if it exceeds the threshold values then only data will be sent to GSM (global system for mobile communication) & location data is captured with the help of GPS (Global Positioning System). Here we are making use of the GPS which gives exact location of the collide vehicle


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Bank Locker Security System Using Touch Sensor and Bluetooth Module

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ABSTRACT:

Nowadays, the Internet of Things is becoming a reality more and more. Beside smart thermostats, light switches and power outlets controllable by smart phone apps creating smart homes, technology has solutions for daily encountered problems as well. We have identified two specific problems related to locking system and we proposed solution for the same. The one is Bank locker and the second is mail box. Having a lock on a Bank or mail box is not a guarantee that the Bank locker or the documents won't get stolen. The proposed work provides a convenient way of locking, providing reliable security system for the Bank locker/mail box. The proposed system uses the IoT technology and smart phone to lock or unlock the device remotely through authentication. In particular, this work proposes security enhancement against any physical damage or theft. The proposed locker allows the user to lock and unlock easily and securely. Using user's phone, the lock system can be locked/unlocked by entering a pass code in the Android application. One can also use the system using the registered touch patterns that can be entered through a touch sensor present in the lock. It provides intelligent lock/unlock with the location of your phone to the locker with the Bluetooth strength. It also provides theft alert to the user


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STOLEN VEHICLE DETECTION USING GSM AND GPS

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ABSTRACT:

At present days with increase in number of vehicle's, vehicle thefts are also increasing in large numbers it is a challenging task for the owners to protect the vehicles, to overcome the theft of the vehicles anti-theft system is designed which is easier, useful and cost effective to protect the vehicles. This system uses GSM and GPS system .by using GSM system if anyone starts ignition of the engine the microcontroller sends the signal to send the SMS to the owner. If theft detected by the owner then he simply sends the SMS to stop the vehicle from the mobile. The location of the vehicle can be detected by using GPS module.

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HOME AUTOMATION BASED ON IOT USING NODEMCU WITH GOOGLE

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ABSTRACT:

Home automation or demotic a term for home automation coined by Jim Hill has been evolving drastically. We saw many home automation technologies introduced over these years from Zig bee automation to Amazon Echo, Google Home and Home from Apple. It has become a craze these days.

Google Home price is around 150\$ (USD) with an additional cost of the devices to be connected to, the total cost of the system reaches over 250\$ (USD). Apple Home Kit too is pretty more expensive, over 100\$ (USD) more than the Google Home just for a basic setup. Philips Hue, a smart light which is controlled by the Google Assistant, Amazon Echo and Siri, voice assistant by Apple is priced around 145\$ (USD).

Similarly, Belikin's Wemo light is priced around 44\$ (USD) per unit and this can be controlled both by Siri and Google Assistant. So, overall we can see here that to make our home smart we need to invest quite a lot, let's say some 250\$ (USD) for a basic setup. What if we can automate our house within (cost of the Smartphone is not included as it is assumed to be owned by every individual these days) 10\$ (USD) and can control up to 8 appliances using Google Assistant? Well, this paper describes the implementation of such a system.

The system is implemented using ordinary household appliances Natural language voice commands are given to the Google Assistant and with the help of IFTTT (If This Then That) application and the Blynk application the commands are decoded and then sent to the microcontroller, the microcontroller in turn controls the relays connected to it as required, turning the device connected to the respective relay On or OFF as per the users request to the Google Assistant. The microcontroller used is Node MCU (ESP8266) and the communication between the microcontroller and the application is established via Wi-Fi.

AUDITORIUM CONTROLLING SYSTEM USING IR WITH VISITOR COUNTER

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ABSTRACT:

This Project "Auditorium controlling system using IR with Visitor Counter using Microcontroller" is a reliable circuit that takes over the task of controlling the room lights as well as counting number of persons/ visitors in the room very accurately. When somebody enters into the room then the counter is incremented by one and the light in the room will be switched ON and when anyone leaves the room then the counter is decremented by one then the light will be switched OFF until all the persons in the room go out. The total number of persons inside the room is also displayed on the seven segment displays. The microcontroller does the above job. It receives the signals from the sensors, and this signal is operated under the control of software which is stored in ROM. Microcontroller ATmega328p continuously monitor the Infrared Receivers, When any object pass through the IR Receiver's then the IR Rays falling on the receivers are obstructed this obstruction is sensed by the Microcontroller


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DESIGN AND IMPLEMENTATION OF ADVANCE HEARTBEAT MONITORING SYSTEM

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ABSTRACT:

Health related issues and parameters are of utmost importance to man, and is essential to his existence, thus he has sought for an improved system that would be able to capture and monitor the changes in health parameters i.e., Heart-Beat irrespective of time and location so as to provide for measures that will forestall abnormalities and cater for emergencies. This work presents a system that is capable of providing real time monitoring of the heartbeat with improvements of an alarm and SMS alert. This project aims at the design and implementation of a low cost but efficient and flexible heartbeat monitoring and alert system using GSM technology. It is designed in such a way that the heartbeat/pulse rate is sensed and measured by the sensors which sends the signals to the control unit for proper processing and determination of the heartbeat rate which is displayed on an LCD, it then proceeds to alert by an alarm and SMS sent to the mobile phone if and only if the threshold value of the heartbeat rate increases or decreases. Thus this system proposes a continuous, real time, remote, safe and accurate monitoring of the heartbeat rate and helps in patient's diagnosis and early and preventive treatment of cardiovascular ailments. The heart rate can be measured by monitoring one's pulse using specialized medical devices such as an electrocardiograph (ECG), portable device e.g. wriststrap watch, or any other commercial heart rate monitors which normally consisting of a chest strap with electrodes. Despite of its accuracy, somehow it is costly, involve many clinical settings and patient must be attended by medical experts for continuous monitoring. For a patient whom already diagnosed with fatal heart disease, their heart rate condition has to be monitored continuously.

This project is based on alert system that able to monitor the heart beat rate condition of patient. The heart beat rate is detected using photoplethysmograph (PPG) technique. This signal is processed using Arduino UNO to determine the heart beat rate per minute. Then, it sends SMS alert to the mobile phone of medical experts or patient's family members, or their relatives via SMS. Thus, doctors can monitor and diagnose the patient's condition continuously and could suggest earlier precaution for the patients themselves. This will also alert the family members to quickly attend the patient.



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BLUETOOTH BASED GAS DETECTION ROBOT USING ARDUINO UNO

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ABSTRACT:

High range gases have been taking place frequently and the threat to human lives and properties is growing in recent years. Dangerous gases can spread even at some distance from the source of leakage. Most accidents are caused because of a poor maintenance in industries and etc.,. Therefore, developing the gas leakage alert system is very essential. Gas leakage leads to various accidents resulting in both material loss and human injuries. The risk of explosion, firing, suffocation are based on their physical properties such toxicity, flammability, etc. The number of deaths due to explosion of gases has been increasing in recent years.

Due to the explosion of gas, the number of deaths has been increased in recent years. To avoid this problem there is a need for a system to detect the leakage of gases. Gas leak detection is the process of identifying hazardous gas leaks by means of various sensors. The designs of Gas detection and alert system have been proposed in the literature. The coal miners rescue robot means this robot can be used in coal mines. Since, it is attached with different sensors which are used to monitor different conditions in coal mines before sending workers in coal mines first robot is send to monitor the atmosphere conditions in it and then they will allow them to send. Gas sensor used to detect dangerous gases in atmosphere like carbon monoxide, toxic gases etc evolved in coal mines. The sensed information can be sending to control room continuously through bluetooth wireless technology.


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INDUSTRIAL DEVICES CONTROL USING IoT

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ABSTRACT:

This project presents a design and prototype implementation of new industrial automation system that uses Bluetooth Technology as a network infrastructure connecting its parts. The proposed system is better from the scalability and flexibility point of view than the commercially available Industrial automation systems. In Industry we have different types of loads at different locations. We can control all loads at a same time from one place (control room) without connecting any physical wire between loads and control room, In this project we are using Bluetooth module, IOT, relay. In this project Bluetooth is being used by phone and the loads are operated with it. In this project we should not connect AC loads directly to microcontroller since AC may enter into controller due to this our controller may be destroyed. To avoid such type of drawback we need some drivers. In this project we are using relay as load controller (as a switch)..
Index Terms: Internet of Things (IoT), Arduino uno, ,arduino software,relays,HC-05 Bluetooth module.


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HAND GESTURE CONTROLLED ROBOT (WHEEL CHAIR)

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ABSTRACT:

The aim of this paper is to prepare a Hand Gesture Controlled Wheelchair for the physically disable people who face difficulty in moving from one place to another in day today life. These days joystick controlled wheel chair is available in the market whose cost is very high. We have prepared this Hand Gesture Controlled Wheelchair which is less compared to joystick controlled wheel chair. An accelerometer is used as a sensor which gives an analog signal on its movement in any of the 6 axis directions that is positive-x axis, negative-x axis, positive- Y axis, negative-Y axis, positive-Z axis, negative-Z axis. In this project we have considered X and Y axis for the direction. Further the input from sensor is given to encoder which sends the data to the transmitter, then the data is received at the receiver end and the sensor data is decoded and finally given to microcontroller. Based on data received the from accelerometer the microcontroller sends the signal accordingly to relays to move the wheelchair in forward, backward, left, right directions. The accelerometer used here is MEMS (micro-electromechanical system).



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INTELLIGENT SMART VEHICLE TRANSPORTATION

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ABSTRACT:

In road-transport terminology, a lane departure warning system is a mechanism designed to warn a driver when the vehicle begins to move out of its lane on freeways and arterial roads. These systems are designed to minimize accidents by addressing the main causes of collisions: driving error, distraction and drowsiness. In 2009 the National Highway Traffic Safety Administration (NHTSA) began studying whether to mandate lane departure warning systems and frontal collision warning systems on automobiles.

So the aim of this project is to combine the two features together in one intelligent vehicle in hope to design a safer means of transportation to save lives wasted on roads yearly especially with the increase of the number of cars introduced to the road each year. So the need of such security systems in today's intelligent cars is essential. The project consists of two main phases: First is to design and build a line tracking circuit that keeps the car moving over its given course and automatically corrects the car's course when it is accidentally deflected away from the track. This circuit is controlled by a microcontroller that gets the track's information by two infrared cells and one ultrasonic sensor mounted in front of the car, and also controls the motors of the car; in order to gain control to the car's speed. The circuit is built as a PCB (Printed circuit board) in order to ensure the circuit's reliability and make a suitable sized circuit, and also to make it possible to direct the infrared cell to face the track beneath the car. The second phase is to build a frontal obstacle avoilder circuit that automatically stops the car once an obstacle is detected among the car's path. Circuit is also built with a PCB technique in order to make it have a reasonable size to be able to mount it in front of the car, and also to ensure circuits reliability.

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BLUETOOTH CONTROLLED PICK AND PLACE ROBOT

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ABSTRACT:

In recent years the industry and daily routine works are found to be more attracted and implemented through automation via Robots. The pick and place robot is one of the technologies in manufacturing industries which is designed to perform pick and place operations. The system is so designed that it eliminates the human error and human intervention to get more precise work. There are many fields in which human intervention is difficult but the process under consideration has to be operated and controlled this leads to the area in which robots find their applications. Literature suggests that the pick and place robots are designed, implemented in various fields such as; in bottle filling industry, packing industry, used in surveillance to detect and destroy the bombs etc. The project deals with implementing an pick and place robot using Robo-Arduino for any pick and place functions. The pick and place robot so implemented is controlled using Bluetooth. The chassis is supported for the displacement of robotic arm by four Omni wheels. The robotic arm implemented has two degrees of freedom.


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ARDUINO BASED UNDERGROUND CABLE FAULT DETECTOR

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ABSTRACT:

The project uses the simple concept of OHMs law where a low DC voltage is applied at the feeder end through a series resistor. The current would vary depending upon the length of fault of the cable in case there is a short circuit of LL or 3L or LG etc. The series resistor voltage drop changes accordingly which is then fed to an ADC to develop precise digital data. The project is assembled with a set of resistors representing cable length in KMs and fault creation is made by a set of switches at every known KM to cross check the accuracy of the same. Underground cables are prone to a wide variety of faults due to underground conditions, wear and tear, rodents etc. Diagnosing fault source is difficult and entire cable should be taken out from the ground to check and fix faults. The project work is intended to detect the location of fault in underground cable lines from the base station in km using a Arduino nodemcu board. To locate a fault in the cable, the cable must be tested for faults. The project uses the classic concept of the Ohms law, when a low voltage at the end of the power supply device is applied across a series resistor the current varies depending on the location of the Fault the cable. In the case of a short circuit (grounded line), the voltage across the series resistors changes accordingly, then input to the ADC constructs the Arduino board to develop accurate digital data for the in kilometre.

The project is mounted with a resistance representing the length of the cable in KM and creating defects is executed by a set of switches in each known KM to check the accuracy of it. Failure occurs at a given distance.


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IMAGE-BASED PLANT DISEASE DETECTION: A COMPARISON OF DEEP LEARNING AND CLASSICAL MACHINE LEARNING ALGORITHMS

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Abstract

Rapid human population growth requires corresponding increase in food production. Easily spreadable diseases can have a strong negative impact on plant yields and even destroy whole crops. That is why early disease diagnosis and prevention are of very high importance. Traditional methods rely on lab analysis and human expertise which are usually expensive and unavailable in a large part of the undeveloped world. Since smart phones are becoming increasingly present even in the most rural areas, in recent years scientists have turned to automated image analysis as a way of identifying crop diseases. This paper presents the most recent results in this field, and a comparison of deep learning approach with the classical machine learning algorithms.

Keywords: *Diseases , Feature Extraction , Image color analysis , Image Segmentation , Monitoring , Classification Algorithms*


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CRYPTOCURRENCY PRICE ANALYSIS WITH ARTIFICIAL INTELLIGENCE

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Abstract

Crypto currency is playing an increasingly important role in reshaping the financial system due to its growing popular appeal and merchant acceptance. While many people are making investments in Crypto currency, the dynamical features, uncertainty, the predictability of Crypto currency are still mostly unknown, which dramatically risk the investments. It is a matter to try to understand the factors that influences the value formation. In this study, we use advanced artificial intelligence frameworks of fully connected Artificial Neural Network (ANN) and Long Short-Term Memory (LSTM) Recurrent Neural Network to analyze the price dynamics of Bit coin, Ethereum, and Ripple. We find that ANN tends to rely more on long-term history while LSTM tends to rely more on short-term dynamics, which indicates the efficiency of LSTM to utilize useful information hidden in historical memory is stronger than ANN. However, given enough historical information ANN can achieve a similar accuracy, compared with LSTM. This study provides a unique demonstration that Crypto currency market price is predictable. Regardless of how, the explanation of the predictability could vary depending on the nature of the involved machine-learning model.

Keywords: ANN, LSTM, Cryptocurrency price prediction, Neural network.


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SCALABLE ANALYTICS PLATFORM FOR MACHINE LEARNING IN SMART PRODUCTION SYSTEMS

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Abstract

Manufacturing industry is facing major challenges to meet customer requirements, which are constantly changing. Therefore, products have to be manufactured with efficient processes, minimal interruptions, and low resource consumptions. To achieve this goal, huge amounts of data generated by industrial equipment needs to be managed and analyzed by modern technologies. Since the big data era in manufacturing industry is still at an early stage, there is a need for a reference architecture that incorporates big data and machine learning technologies and aligns with the Industry 4.0 standards and requirements. In this paper, requirements for designing a scalable analytics platform for industrial data are derived from Industry 4.0 standards and literature. Based on these requirements, a reference big data architecture for industrial machine learning applications is proposed and compared to related works. Finally, the proposed architecture has been implemented in the Lab Big Data at the SmartFactoryOWL and its scalability and performance have been evaluated on parallel computation of an industrial PCA model. The results show that the proposed architecture is linearly scalable and adaptable to machine learning use cases and will help to improve the industrial automation processes in production systems


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LOCATION PREDICTION ON TWITTER USING MACHINE LEARNING TECHNIQUES

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ABSTRACT

Location prediction of users from online social media brings considerable research these days. Automatic recognition of location related with or referenced in records has been investigated for decades. As a standout amongst the online social network organization, Twitter has pulled in an extensive number of users who send a millions of tweets on regular schedule. Because of the worldwide inclusion of its users and continuous tweets, location prediction on Twitter has increased noteworthy consideration in these days. Tweets, the short and noisy and rich natured texts bring many challenges in research area for researchers. In proposed framework, a general picture of location prediction using tweets is studied. In particular, tweet location is predicted from tweet contents. By outlining tweet content and contexts, it is fundamentally featured that how the issues rely upon these text inputs. In this work, we predict the location of user from the tweet text exploiting machine learning techniques namely Naïve bayes, Support Vector Machine and Decision Tree.


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GENERATING CLOUD MONITORS FROM MODELS TO SECURE CLOUD

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Abstract

Authorization is an important security concern in cloud computing environments. It aims at regulating an access of the users to system resources. A large number of resources associated with REST APIs typical in cloud makes an implementation of security requirements challenging and error-prone. To alleviate this problem, in this paper we propose an implementation of security cloud monitor. We rely on model-driven approach to represent the functional and security requirements. Models are then used to generate cloud monitors. The cloud monitors contain contracts used to automatically verify the implementation. We use Django web framework to implement cloud monitor and OpenStack to validate our implementation. We present a cloud monitoring framework that supports a semi-automated approach to monitoring a private cloud implementation with respect to its conformance to the functional requirements and API access control policy. Our work uses UML (Unified Modeling Language) models with OCL (Object Constraint Language) to specify the behavioral interface with security constraints for the cloud implementation. The behavioral interface of the REST API provides information regarding the methods that can be invoked on it and pre- and post-conditions of the methods. In the current practice, the pre and post-conditions are usually given as the textual descriptions associated with the API methods. In our work, we rely on the Design by Contract (DBC) framework, which allows us to define security and functional requirements as verifiable contracts.


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A STUDY OF BLOCKCHAIN TECHNOLOGY IN FARMER'S PORTAL

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Abstract

Blockchain is a method in which a confirmation of a transaction is kept by means of a cryptocurrency. The record is maintained transversely, linking several computers in a peer to peer network. Contracts, transactions, and the records of them define the economic system of a country. They set boundaries and provide security to the assets. Considering the features of blockchain such as immutability and maintaining the footage of transaction details, this paper highlights the usage of blockchain technology with farmer's portal that keep the footage of selling and buying information of crops. The proposed solution uses the python as a programming language in integration with the blockchain system that will benefit the farmers or vendors and individuals by preserving the contract of trade. An interface for the farmers is designed using a python programming language in addition with blockchain technology, which is used to store the information related to seller, buyer, selling and buying an item and total value transacted.


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TEXT CLASSIFICATION ON TWITTER DATA

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Abstract

Sentiment analysis is a classification problem where the main focus is to predict the polarity of words and then classify them into positive or negative sentiment. Classifiers used are of mainly two types, namely lexicon-based and machine learning based. The former include SentiWordNet and Word Sense Disambiguation while the latter include Multinomial Naive Bayes(MNB), Logistic Regression(LR), Support Vector Machine(SVM) and RNN Classifier. In this paper, existing datasets have been used, the first one from "Sentiment140" from Stanford University, consisting of 1.6 million tweets and the other one originally came from "Crowdfower's Data for Everyone library", consisting of 13870 entries, and both datasets are already categorised as per the sentiments expressed in them. Textblob, Sentiwordnet, MNB, LR, SVM and RNN Classifier are applied on the above dataset and a comparison is drawn between the results obtained from above mentioned sentiment classifiers, classifying tweets according to the sentiment expressed in them, i.e. positive or negative. Also, along with the machine learning approaches, an ensemble form of MNB, LR and SVM has been performed on the datasets and compared with the above results. Further the above trained models can be used for sentiment prediction of a new data.


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CONTENT ANALYSIS OF MESSAGES IN SOCIAL NETWORKS, IDENTIFICATION OF SUICIDAL TYPES

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Abstract

This project describes content analysis of text to identify suicidal tendencies and types. It also describes how to make a sentence classifier that uses a neural network created using various libraries created for machine learning in the Python programming language. Attention is paid to the problem of teenage suicide and groups of death in social networks, the search for ways to stop the propaganda of suicide among minors. Analysis of existing information about so-called groups of death and its distribution on the Internet. Increasing number of social networking sites made people more engaged in their virtual life more than ever and at the same time amount data people put online is enormous and also heaven for researchers for conducting their researches. People tend to put their thoughts online to share with the whole world which also includes suicidal thoughts. Suicide is a social problem and is a major concern of recent times. In this research paper we mainly focused on Twitter which is one of the well-known networking sites. We adopted an approach of machine learning and neural network for this research.


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CONVERGING BLOCKCHAIN AND MACHINE LEARNING FOR HEALTHCARE

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Abstract

The power of machine learning in understanding the patterns in data, analyzing and making decisions, has shown its importance in various sectors. Machine Learning requires reasonable amount of data to make accurate decisions. Data sharing and reliability of data is very crucial in machine learning in order to improve its accuracy. The decentralized database in Block chain Technology emphasizes on data sharing. The consensus in Block chain technology makes sure that data is legitimate and secured. The convergence of these two technologies can give highly accurate results in terms of machine learning with the security and reliability of Block chain Technology. This paper gives an overview of how combining these two technologies can help in healthcare sectors.


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A CORONA RECOGNITION METHOD BASED ON VISIBLE LIGHT COLOR AND MACHINE LEARNING

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Abstract

Corona effect is the phenomenon of ionization of surrounding air around the conductor due to which luminous glow with hissing noise. If the voltage induces between the conductor is of alternating nature then the charging current flows between the conductors. And this charging conductor increases the voltage of the transmission line. The electric field intensity also increases because of the charging current. If the intensity of the electric field is less than 30kV, the current induces between the conductor is neglected. But if the voltage rise beyond the 30kv then the air between the conductors becomes charge and they start conducting. The sparking occurs between the conductors till the complete breakdown of the insulation properties of conductors takes place. Can we detect electric discharge states in gases based on the information on visual images? This article proposes a new kind of method where we build several detection models for different states of corona discharge by applying four kinds of machine learning algorithms to extract color, brightness, and shape information characteristics of visible images, taken by a digital camera. Every model is then tested on a new set of images to measure its performance. The four different machine learning algorithms are support vector machine (SVM), K-nearest neighbor regression (KNN), single layer perceptron (SLP), and decision tree (DT) algorithms. The prediction results show that the color features perform best among all three types of features and the KNN algorithm performs best among all four algorithms. This article also presents a discussion on how to choose the optimal detection areas of images for better detection performance. Our approach shows consistent results across different cameras and camera settings. The results demonstrate that even if only the visible light spectrum emitted from a plasma is captured, the color method can provide sufficient discharge information for economic and convenient use in discharge state detection because the species producing visible radiation are affected by radiation in all bands.

AN APPLICATION OF DEEP LEARNING ALGORITHM FOR AUTOMATIC DETECTION OF UNEXPECTED ACCIDENTS UNDER BAD CCTV MONITORING CONDITIONS IN TUNNELS

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Abstract

In this project, Object Detection and Tracking System (ODTS) in combination with a well-known deep learning network, Faster Regional Convolution Neural Network (Faster R-CNN), for Object Detection and Conventional Object Tracking algorithm will be introduced and applied for automatic detection and monitoring of unexpected events on CCTV in tunnels, which are likely to (1) Wrong-Way Driving (WWD), (2) Stop, (3) Person out of vehicle in tunnel (4) Fire. ODTS accepts a video frame in time as an input to obtain Bounding Box (BBox) results by Object Detection and compares the BBoxes of the current and previous video frames to assign a unique ID number to each moving and detected object. This system makes it possible to track a moving object in time, which is not usual to be achieved in conventional object detection frameworks. A deep learning model in ODTS was trained with a dataset of event images in tunnels to Average Precision (AP) values of 0.8479, 0.7161 and 0.9085 for target objects: Car, Person, and Fire, respectively. Then, based on trained deep learning model, the ODTS based Tunnel CCTV Accident Detection System was tested using four accident videos which including each accident. As a result, the system can detect all accidents within 10 seconds. The more important point is that the detection capacity of ODTS could be enhanced automatically without any changes in the program codes as the training dataset becomes rich.

Keywords: *Object Detection and Tracking System (ODTS), Faster Regional Convolution Neural Network (Faster R-CNN), Bounding Box (BBox)*


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LEVERAGING CNN AND TRANSFER LEARNING FOR VISION-BASED HUMAN ACTIVITY RECOGNITION

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Abstract

With the advent of the Internet of Things (IoT), there have been significant advancements in the area of human activity recognition (HAR) in recent years. HAR is applicable to wider application such as elderly care, anomalous behavior detection and surveillance system. Several machine learning algorithms have been employed to predict the activities performed by the human in an environment. However, traditional machine learning approaches have been outperformed by feature engineering methods which can select an optimal set of features. On the contrary, it is known that deep learning models such as Convolution Neural Networks (CNN) can extract features and reduce the computational cost automatically. In this paper, we use CNN model to predict human activities from Image Data set model. Specifically, we employ transfer learning to get deep image features and trained machine learning classifiers. Our experimental results showed the accuracy of 96.95% using VGG-16. Our experimental results also confirmed the high performance of VGG-16 as compared to rest of the applied CNN models.


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DATA ANALYSIS BY WEB SCRAPING USING PYTHON

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Abstract

The standard information investigations are built on the root and impact relationship, shaped as an example minuscule examination, subjective and quantitative examination, the rationality approach of creating extrapolation examination. The Web Scraper's conniving ethics and procedures are juxtaposed, it explains about the working of how the scraper is premeditated. The technique of it is allocated into three fragments: the web scraper draws the desired links from the web, and then the data is extracted to get the data from the source links and finally stowing that data into a csv file. The Python language is implemented for the carrying out. By doing so, linking all these with the moral knowledge of libraries and working know-how, we can have an adequate Scraper in our hand to produce the desired result. Due to an enormous community and library resources for Python and the exquisiteness of coding chic of python language, it is most appropriate one for Scraping desired data from the desired website.



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AN EXAMINATION SYSTEM AUTOMATION USING NATURAL LANGUAGE PROCESSING

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Abstract

This world has seen a lot many examination portals that are deployed over several servers which are used to conduct online examination for various purposes among which some may include conducting a test for entrance examinations, or Olympiads at national and international level and while some portals are designed to conduct a test for placement purposes. But what we have seen is that mostly all the portals are designed to conduct tests that contain multiple choice questions. Here our aim is not to work on the technology that already exists, rather some technology that is very rare. Here we talk of the descriptive online examination system. Multiple choice questions are easy to deal as they have a question, a few options and a field in the same question that stores the correct option in the database. While in the case of descriptive questions it is not so. It brings in or uses the concepts of Natural Language Processing or NLP to assign marks to answers. Answers are nothing but strings and the job of the model is to do some operations on the answer string such that it can assign the correct marks to answers written by the examinee. The data is basically collected from a descriptive online examination system. Further, it is analyzed and the designed model assigns accurate marks to the answers for the question. The back-end is written in Python where the web framework used is Django, the library used for Natural Language Processing includes NLTK and for database purpose, SQLite version 3 is used, while for the front-end HTML version-5, CSS version-3, Bootstrap and JavaScript is used.


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STUDY ON STABILIZATION OF SOIL USING WASTE FIBER MATERIALS


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Abstract

The soil bed should bear all the stresses transmitted by the structure. If the soil is weak and has not enough stability to resist heavy loading, the soil should be reinforced and stabilized. As the quality of the soil is increased, the ability of the soil to distribute the load over a greater area is generally increased. Soil stabilization refers to alteration of soil properties to improve the stability or bearing power of the soil by controlled compaction, proportioning or by adding admixtures. Soil stabilization can be done by different methods like mechanical, chemical stabilization or by using different types of admixtures. To investigate the use of waste fiber materials in geotechnical applications and to evaluate the effects of waste polypropylene fibers on shear strength of unsaturated soil by carrying out direct shear tests and unconfined compression tests on two different soil samples. The results obtained are compared for the two samples and interferences are drawn towards the usability and effectiveness of fiber reinforcement as a replacement for deep foundation or raft foundation, as a cost-effective approach.

Keywords: Soft soil, Stabilization, Waste Fiber, Methods of stabilization.


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SELF CURING CONCRETE

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Abstract

As water is becoming a scarce material day-by-day, there is an urgent need to do research work pertaining to saving of water in making concrete and in constructions. Curing of concrete is maintaining satisfactory moisture content in concrete during its early stages in order to develop the desired properties. However, good curing is not always practical in many cases. Curing of concrete plays a major role in developing the concrete microstructure and pore structure and hence improves its durability and performance. Keeping importance to this, an attempt has been made to develop self-curing concrete by using water soluble polyethylene glycol as self-curing agent and light weight aggregate as granite.

The aim of this investigation is to study the strength and durability properties of concrete using water-soluble Polyethylene Glycol as self-curing agent. The function of self-curing agent is to reduce the water evaporation from concrete, and hence they increase the water retention capacity of concrete compared to the conventionally cured concrete. The use of self-curing admixtures is very important from the point of view that saving of water is a necessity everyday (each one cubic meter of concrete requires 3 m³ of water in a construction, most of which is used for curing). In this study, compressive strength and split tensile strength of concrete containing self-curing agent is investigated and compared with those of conventionally cured concrete. It is found through this experimental study that concrete cast with Polyethylene Glycol as self-curing agent is stronger than that obtained by sprinkler curing as well as by immersion curing.

In the present study, the effect of admixture (PEG 400) on compressive strength, split tensile strength and modulus of rupture by varying the percentage of PEG by weight of cement from 0% to 2% were studied for M20. It was found that PEG 400 could help in self curing by giving strength on par with conventional curing. It was also found that 1% of PEG 400 by weight of cement was optimum for M20 grade concretes for achieving maximum strength without compromising workability.

Keywords: Light Weight Concrete, Light Weight Aggregates, Air Entraining Agent, Compressive Strength

COMPRESSIVESTRENGTHOFLIGHT WEIGHT CONCRETE


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Abstract

Light weight concrete (LWC) is the building material used in the construction of building using latest technology to reduce these If weight of the building. By reducing these If weight or dead load of the building or prismatic dimensions, it can minimize the destruction or casualties during the earth quake or any environmental impact. Light weight concrete can be produced using light weight aggregates (pumice stone) or volcanic stone or by using admixture aluminum powder as an air entraining agent to the normal mix concrete with or without coarse aggregate. This paper presents the light weight concrete of nominal mix of M25 grade using admixture aluminum powder mixed with various quantities and water cement ratio. After curing for 7, 14 and 28 days, the compressive strength developed in the concrete cubes and weights were quantities of aluminum added in percentage by observing, the light weight concrete using the nominal size of the aggregate still can be effectively used as they are lighter in weight.

Keywords: Light Weight Concrete, Light Weight Aggregates, Air Entraining Agent, Compressive Strength


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An Empirical Study on Bharat22 Exchange Traded Fund during Covid-19

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Abstract

Overall risk in a portfolio can be reduced through effective diversification. When fund allocation, is made across different asset classes and sectors, it brings down the impact of the market volatility. Investments with different funds will ensure that industry-specific and enterprise-specific risks are low. Diversification is essentially a strategy to disseminate investments across different asset classes. These asset classes can range from stocks and bonds to other investment categories like real estate, precious metals and crypto-currencies. One of the easiest ways for investors to diversify is by investing in a large number of companies through pooled investments like mutual funds and Exchange Traded Funds (ETFs). ETFs are a variant of mutual fund schemes, the units of which may be bought or sold on a stock exchange. ETFs spread investments across different assets. The diversification in Bharat22 ETF is across stock level and also across the sector level. Bharat22 ETF is an open-ended exchange traded fund investing in S&P BSE Bharat22 Index. The scheme invests in 22 companies including three private sector stocks and 19 public sector units (PSUs). Bharat22 scheme was launched by the Government to fulfill its disinvestment target in PSUs. Bharat22 ETF is a 100 percent equity fund and although diversified across sectors, the underlying commonality is that all are government owned institutions. The fund invests mostly in energy, financial and FMCG sectors. The stocks in its portfolio are mostly large cap. Bharat22 ETF offers investors an attractive long term investment opportunity. This study is an attempt to explore the performance of Bharat22 ETF in the recent years. It is an empirical study. Data sources are websites of National Stock Exchange of India, Association of Mutual Funds of India (AMFI) and other relevant published data. Various financial and statistical tools will be deployed. Based on data analysis and interpretation, conclusion will be drawn and accordingly findings and suggestions will be made.

Key Words: Risk, Return, ETFs

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A Study on Selection and Recruitment

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Abstract:

Better recruitment and selection strategies result in improved organizational outcomes. Recruitment is the process of searching for prospective employees and stimulating them to apply for jobs in the organization. Selection may be defined as the process by which the organization chooses from among the applicants, those people whom they feel would best meet the job requirement, considering current environmental condition. In today's Competitive business environment, organizations have to respond to the requirements of people. It is important for an organization to adopt well-structured recruitment policy, which can be implemented effectively to get the best results. This study focus on understanding recruitment and selection process and identify the area of problem and suggest way to improve the recruitment and selection process, Convenient sampling is used in this study. The sample size for the study is 100. The tools that are used in this study are Percentage analysis and Chi square test.


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A Study on factors Affecting the Foreign Exchange Rate

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Abstract

Foreign Exchange is a process or mechanism by which the currency of one country is converted into the currency of another currency and, thereby, involves the international transfer of money. Being one of the most important determinants of a country's relative economic health, aside from factors such as interest rates and inflation, foreign exchange rates are the most-watched, analyzed, and manipulated economic measures. Exchange rates are simply the value of one currency in comparison to another. But due to its volatile nature, it can be quite confusing to someone who transfers money overseas regularly. The 7 factors that influence the constantly changing exchange rates are 1) Interest and Inflation Rates 2) Current Account Deficits 3) Government Debt 4) Terms of Trade 5) Economic Performance 6) Recession 7) Speculation

Keywords: Foreign Exchange, inflation, Deficits, Recession, Speculation


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A Study of Customers' Awareness and Satisfaction with Gold Jewelry in Hyderabad

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Abstract

The jewellery business is one of India's most rapidly growing businesses. The study looked into the customer's level of preference for branded jewellery. The study aims to determine the customer's degree of preference for branded jewellery and customer satisfaction of gold jewellery in Hyderabad. The objectives of the study are to study the socio-economic profiles and their perception of gold jewellery, the reasons for buying jewellery, to examine the variation in brand awareness preference of gold jewellery among the respondents and to find out the satisfaction level before and after purchasing gold jewellery. The information is gathered from primary and secondary sources. A sample of 100 respondents is taken for the study by using the convenience sampling technique. The survey was conducted through Google Forms' online survey tools. The researcher was also used secondary data from journals, magazine, the internet, etc. The data analysis is done using percentage analysis, correlation, paired t test, chi-square test and Likert scale analysis. It may be deduced that there is no substantial relationship between respondents' educational qualifications and factors for selecting gold jewellery purchases, such as price, branded quality, various kinds/models, and timely settlements/delivery. Price, branded quality, multiple varieties/models, and timely settlements/delivery were the most important factors in deciding on a branded store.

Keywords: branded jewellery, investment, traditions, religious beliefs, price.


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Kondapur (V), Ghatkesar (M), Medchal (D)

Empirical Study on Non -Performing Assets of Indian Bank

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Abstract:

Non-performing Asset is an important parameter in the analysis of financial performance of a bank as it results in decreasing margin and higher provisioning requirements for doubtful debts. NPA is a virus affecting banking sector. It affects liquidity and profitability, in addition posing threat on quality of asset and survival of banks. The motive of present study is to assess the non performing assets of Indian bank and its impact on profitability & to see the relation between total advances, Net Profits, GROSS & NET NPA. The study uses the annual reports of Indian Bank for the period of six years from 2014- to 2021-. The data has been analyzed by using tables and coefficient of correlation the period of six years from 2014- to 2021-. The data has been analyzed by using tables and coefficient of correlation. The important point to be noted is that the decline of NPA is essential to improve profitability of banks. Advances provided by banks need to be done pre-sanctioning evaluation and post-disbursement control to constrain rising non-performing assets in the Indian Banking sector. When Indian bank Gross & NET NPA compared with total advances we get the result that there is mismanagement on the side of Indian. While analyzing the impact of NPA level on Indian bank we derived the conclusion there is mismanagement on the side of Indian. While analysing the impact of NPA level on Indian bank we derived the conclusion that there is a positive relation between Net Profits and NPA of Indian bank. It simply means that as profits increase NPA also increase. It is because of the mismanagement on the side of bank.

Keywords: Nonperforming assets, Gross nonperforming assets, net nonperforming assets, Profitability, Mismanagement.

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**PRACTICES AND PERFORMANCE OF GOODS AND SERVICE TAX IN INDIA-
STEPS TOWARDS REMOVAL OF THE CASCADING EFFECT**

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ABSTRACT

Goods and service tax is actually an indirect tax reform which ultimately aims to remove the taxation barriers between states. This helps create a unified market which is unprejudiced towards state boundaries and provides unrestricted access to the entire nation to buy, sell, import, and export within the country. India is a federal democracy and its constitution clearly divides authorities, responsibilities, and tax collection between the states and the central government. The adoption of the Goods and Services Tax is the next logical step towards extensive indirect tax reforms in India (GST). The transition from a complex multi-layered indirect taxation system to a unified indirect taxation system would be triggered by the new GST regime. The GST (Products and Services Tax) is a consumption-based tax applied on goods and services at the point of ultimate or real consumption. The transition from a complex multi-layered indirect taxation system to a unified indirect taxation system would be triggered by the new GST regime. This article discusses how the GST was implemented in India. It focuses on the impact and consequences of GST on various stakeholders, such as customers, businesses, and the government.

Keywords: Business, Customers, Goods and Services, Revenue, Taxation.


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PERFORMANCE EVALUATION OF A FAST DYNAMIC CONTROL SCHEME FOR CAPACITOR SUPPORTED INTERLINEDYNAMIC VOLTAGE RESTORER


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Abstract: The implementation of a fast dynamic control scheme for capacitor-supported interline dynamic voltage restorer (DVR) is presented in this paper. The power stage of the DVR consists of three inverters sharing the same dc link via a capacitor bank. Each inverter has an individual *inner* control loop for generating the gate signals for the switches. The inner loop is formed by a boundary controller with second-order switching surface, which can make the load voltage ideally revert to the steady state in two switching actions after supply voltage sags, and also gives output of low harmonic distortion.

The load-voltage phase reference is common to all three inner loops and is generated by an *outer* control loop for regulating the dc-link capacitor voltage. Such structure can make the unsagged phase(s) and the dc-link capacitor to restore the sagged phase(s). Based on the steady-state and small-signal characteristics of the control loops, a set of design procedures will be provided. A 1.5-kVA, 220-V, 50-Hz prototype has been built and tested. The dynamic behaviors of the prototype under different sagged and swelled conditions and depths will be investigated. The quality of the load voltage under unbalanced and distorted phase voltages, and nonlinear inductive loads will be studied.


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A MODIFIED HIGH STEP UP NON-ISOLATED DC-DC CONVERTER FOR HIGH POWER APPLICATIONS

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Abstract: This paper presents the conception of a family of dc-dc converters with wide conversion range (WCR) based on the multi-state switching cell (MSSC) for high-power, high-current applications. The resulting topologies allow achieving high-voltage step-up/step-down in a modular approach, as the WCR-MSSC cell is obtained by using isolated secondary windings coupled to the autotransformer of the MSSC with series-connected controlled rectifiers. Depending on the transformer turns ratio, it is possible to adjust the static gain and reduce the voltage stresses across the main switches, thus allowing the use of metal oxide semiconductor field effect transistors (MOSFETs) with low on-resistance $R_{DS(on)}$, as efficiency is improved as a consequence of minimized conduction losses. A dc-dc boost-type converter based on the four-state switching cell (4SSC) is also implemented, thoroughly analyzed, and evaluated experimentally to demonstrate the advantages associated to the proposed approach in the conception of novel dc-dc converter topologies for this purpose Index Terms dc-dc converters, multi-state switching cell, step-up dc-dc converters, wide conversion range


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A Photovoltaic (Pv) Array Based Off Board Electric Vehicle Battery Charger

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Abstract: The Due to increase in co2 emission from conventional fuel type vehicles the modern society is looking forward to use electrical vehicles as means of transportation. This leads to proposed to study Irrespective of solar irradiations, Charging of EV battery from the grid increases its load demand. Using the sepic converter bidirectional DC-DC converter, the proposed system is capable of charging the EV battery during both sunshine hours and non-sunshine hours. During peak sunshine hours, the backup battery gets charged along with the EV battery and during non-sunshine hours, the backup battery supports the charging of EV battery. The proposed charging system is simulated using Simulink in the MATLAB software


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Design And Implementation Of Multi-Level Single Phase Converter With Two Dc Links By Using MATLAB

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Abstract: The power electronics device which converts DC power to AC power at required output voltage and frequency level is known as inverter. The voltage source inverters produce an output voltage or a current with levels either 0 or +ve or -ve V dc. They are known as two-level inverters. Multilevel inverter is to synthesize a near sinusoidal voltage from several levels of dc voltages. Multilevel inverter has advantage like minimum harmonic distortion. Multi-level inverters are emerging as the new breed of power converter options for high power applications. They typically synthesize the stair -case voltage waveform (from several dc sources) which has reduced harmonic content. In this project work a Three-level single phase cascade H-Bridge inverter has been developed using MOSFETS. Gating signals for these MOSFETS have been generated by designing comparators. In order to maintain the different voltage levels at appropriate intervals, the conduction time intervals of MOSFETS have been maintained by controlling the pulse width of gating pulses (by varying the reference signals magnitude of the comparator). Simulation models (designed in SIMULINK) have been developed up to five levels and THD in all the cases have been identified.


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IMPLEMENTATION OF RENEWABLE ENERGY AND DIESEL GENERATOR BASED ELECTRIC VEHICLE CHARGING STATION

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Abstract: In this paper, uses the solar energy and diesel generator to charge the electric vehicles. In this, a solar PV (Photovoltaic) array, a battery energy storage (BES) and a diesel generator (DG) set based is utilized to provide incessant charging in the circuit detached by the output and DG set connected modes. The charging station is primarily designed to use the solar photovoltaic array and a BES to supply the load. In case of exhausted energy in battery and also unavailability of solar power, the charging station takes power from the Diesel generator set. The power from DG set is drawn in a manner that, it always operates at 80-85% loading to achieve maximum fuel efficiency under all loading conditions. The charging station regulates the generator voltage. It also ensures that the power drawn from the grid or the DG set is at unity power factor (UPF) even at nonlinear loading. The PCC (Point of Common Coupling) voltage is synchronized to the generator voltage to obtain the continuous charging. The charging station also performs the vehicle to grid active/reactive power transfer, vehicle to home and vehicle to vehicle power transfer for increasing the operational efficiency of the charging station.



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An Improved Solar Quality in A Solar PV Plant Integrated Utility Grid By Employing A Novel Adaptive Current Regulator


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Abstract: This paper deals with the design and simulation of solar water pumping system using ¼ watt single phase induction motor. The main scope is to provide an economic way of water pumping in sub-urban areas. The design and evaluation of an induction motor-driven water pumping system which is powered by solar panels is configured in this project. Simulation can be used to study the behavior of individual components of the system, study the interaction of various components, or fine-tune the set points of control device. The outputs of the simulation are available either in numeric or graphical form. The reason why an induction motor has been chosen is that these motors are cheaper and more robust than the more conventional DC motors. It is expected that, by using an induction motor, the system performance will improve significantly for the same investment. The efficiency of the AC drive for a 350 WP system was found to be 67%, which is similar to that of DC systems. The source of energy is from a photovoltaic (PV) module which is a current source.

The Modeling & Simulation of system has been carried out using MATLAB software. The practical implementation is also done.


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**A NEW STEP-UP SWITCHED -CAPACITOR VOLTAGE
BALANCING CONVERTER FOR NPC MULTI-LEVEL
INVERTER-BASED SOLAR PHOTO-VOLTAIC SYSTEM**

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Abstract: In this paper, a novel configuration of a three-level neutral point clamped (NPC) inverter that can integrate solar PV with battery storage in a grid-connected system is proposed. The strength of the proposed topology lies in a novel, extended unbalance three-level vector modulation technique that can generate the correct AC voltage under unbalanced DC voltage conditions. This paper presents the design philosophy of the proposed configuration and the theoretical framework of the proposed modulation technique. A new control algorithm for the proposed system is also presented in order to control the power delivery between the solar PV, battery, and grid, which simultaneously provides maximum power point tracking (MPPT) operation for the solar PV. The effectiveness of the proposed methodology is investigated by the simulation of several scenarios, including battery charging and discharging with different levels of solar irradiation.


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DESIGN OF MODIFIED T-TYPE MULTILEVEL INVERTER FOR ELECTRIC VEHICLE APPLICATION USING MATLAB SIMULINK

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Abstract: In this paper, introduces a new configuration of bi-directional multilevel converter in electric vehicle (EV) applications. It has multilevel converter with a direct current-link capacitor voltage balance feature. The multilevel converter operates in bi-directional manner, which is a fundamental requirement in EVs. Compared to the conventional configurations, the proposed one only implements two extra power switches and a capacitor to balance the voltage of the T-type MLI capacitor over a complete drive cycle. Therefore, no extra isolated sensor, control loops and/or special switching pattern are required. Moreover, the proposed configuration due to the high frequency cycle-by cycle voltage balance between and the bulky electrolytic capacitors used in T-type MLI are replaced with longer life more reliable film capacitors. This will result in a size and weight reduction of the converter by 20%. While the first stage is used to boost the PV array voltage and track the maximum solar power, the second stage inverts this DC power into high quality AC power. Typically, the first stage comprises a booster type DC-DC converter topology. Such two-stage configurations are time tested and work well. In this project, a new single stage, grid-connected inverter topology which can be made to operate and modeled using MATLAB simulink block set. The performance of the single-stage, grid-connected inverter and boost converter are to be analysed. In this work five level cascaded H-bridge inverter is to be developed using sinusoidal pulse width modulation technique and output voltage from an inverter can also be adjusted by exercising a control within the inverter itself. Open loop and closed loop performance are to be analysed in the system by using various loads.


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DESIGN AND COMPARATIVE ANALAYSIS OF DRILL BIT WITH DIVERSE MATEIRALS


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ABSTRACT:

Bit selection is considered to be an important task in drilling optimization process. To select a bit is considered as an important issue in drilling. In the present work we have considered a twist drill bit of HSS material as a model for getting the results compared to get more safe and efficient material from beta titanium alloy and alpha titanium alloy. Modelling of drill bit is done on SOLIDWORKS and the analysis is being performed on the ANSYS software. The geometrical shape and input process conditions are same for both materials. The titanium alloy which is widely used in the field of biomedical applications is being examined with the HSS which is mostly applicable in majority of the applications. According to the Analysis's results, it is observed that the beta titanium alloy is showing the maximum effective strain with minimum equivalent stress as compared with alpha titanium alloy.

Key Words: Drill bit, ANSYS SOFTWARE, SOLIDWORKS, beta and alpha titanium alloy.


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MANUFACTURING OF PIN-FIN HEAT EXCHANGER BY RAPID TOOLING AND PERFORMANCE TESTING AT DIFFERENT FLOW RATES

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Abstract:

Rapid Tooling (RT) describes a process that is the result of combining Rapid Prototyping techniques with conventional tooling practices to produce a mold quickly or parts of a functional model from CAD data in less time and lower cost relative to traditional machining methods. Rapid Tooling (RT) typically, either uses a Rapid Prototyping (RP) model as pattern or uses the Rapid Prototyping process directly fabricate a tool for a limited volume of prototypes. The pattern of pin-fin is formed layer by layer by using PLA in fused deposition modeling machine. A silicon rubber mould is prepared by using pattern. A mixture of Aluminum and polymer is added to the mould to produce pin-fin heat exchanger. The thermal performance of the manufactured pin-fin heat exchanger is tested on the test apparatus.


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DESIGN AND ANALYSIS OF SINGLE POINT CUTTING TOOL BY USING ANSYS

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ABSTRACT:

The cutting forces at single point cutting tool tip interface is determined, generated in high speed machining operations. An investigation of cutting forces acting on the tool is carried out by subjecting it to the maximum possible working stress during a cutting operation. It is also determined that change in cutting speed and depth of cut has the maximum effect on increasing cutting forces. By varying the material the effect of those on cutting forces are compared with the theoretical results and FEA results. In this report, an FEM simulation technique is utilized to investigate the physical cutting and deformation of tip of single point cutting tool under the influence of cutting forces.


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Structural and Thermal analysis of Steam Turbine in Ansys


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ABSTRACT

The rotor blade of the Steam turbine has been analysed for the static and thermal stresses resulting from the tangential, axial and centrifugal forces. The Steam forces namely tangential, axial was determined by constructing velocity triangles at the inlet and exit of rotor blades. The rotary-wing was then analysed for the temperature distribution. For obtaining temperature distribution, the convective heat transfer coefficients on the blade surface exposed to the Steam. A steam turbine is an important functional part of many applications. Reducing the stresses and increasing fatigue life is the major concern since they are in a high-temperature environment. Various techniques have been proposed for the increase of fatigue life and one such technique is to have axial holes along the blade span. A finite component analysis is used to research thermal and structural performance because of the loading condition, with material properties of structural steel. The finite element analysis of a gas turbine rotor blade is carried out using 20 nodes brick element. Static and thermal analysis is carried out. The temperature contains a vital impact on the general stresses within the rotary engine blades. Thus, blade with 2mm hole is better for suing because the stress obtained is less and the number of cycles increased when compared to blades with 2, 3and 4mm holes.


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TRANSIENT POWER DEVELOPMENT FROM EXHAUST GASES IN I.C ENGINES

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ABSTRACT:

The project aims at developing a system which is capable of generating energy from the air pressure that comes out of vehicles silencer pipe. The alternative forms of energy available today constitute a substantial range, and more forms are continually being discovered. This silencer based generation is a low cost system and lots of energy can be generated from the present day available vehicles with no additional damage to the nature. The project makes use of a fan blade setup. The air pressure from the silencer tube will rotate the fan blade setup which is connected to a dc generator. The energy obtained by this mechanism is stored into a battery. This stored energy is fed to an inverter, which is converted to ac supply. The generated ac supply is used for switching ac loads.


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DESIGN AND FABRICATION ON MULTI GRAINS COLLECTOR

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ABSTRACT:

In mills and agricultural fields grains are collected by means of number of labors and more time consumption. In order to limit the time and work wages a simple mechanical heaping machine is been constructed to handle with less labors. The main objective of this project is to heap the paddy in an effective manner with simple adjustments and less remuneration. In this machine the driving shaft of the wheel is welded with sprockets on either side of the shaft. Grain collecting machines it is operated fully in a mechanical means. In modern grain handling machines, the grains are collected by means of vacuum suction and it requires external power supply.


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GEARLESS TRANSMISSION USING ELBOW MECHANISM

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ABSTRACT:

This system demonstrates efficient gearless transmission of power at any required angle. This saves gear manufacturing time and costs along with teeth matching and gear placement issues. The elbow mechanism is an efficient design of gearless transmission technique and the kinematic system that allows for efficient power/motion transmission at any required angle. This mechanism allows for motion transmission from 90 degree to 180 degree angles between the driver and the driven shafts. We use mounts to mount a DC motor with shaft coupled to it. We then use six rods to link driver shaft with the driven shaft. We use accurate drilling with relatively spaced and diametered holes to attach the connection rods with precision. We then use mounts to hold the driven rod in precise position. Now the motor can be powered using 12V supply and can be used to drive the other shaft using elbow mechanism.


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RAMJET PROPULSION ENGINE MODIFICATION IN SUPERSONIC SELF AIR BREATHING TO SUBSONIC AIR SUPPLY

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ABSTRACT:

A ramjet, sometimes referred to as a flying stovepipe or an athodyd (aero thermodynamic duct), is a form of air breathing jet engine that uses the engine's forward motion to compress incoming air without an axial compressor or a centrifugal compressor. Because ramjets cannot produce thrust at zero airspeed, they cannot move an aircraft from a standstill. A ramjet-powered vehicle, therefore, requires an assisted take-off like a rocket assist to accelerate it to a speed where it begins to produce thrust. Ramjets work most efficiently at supersonic speeds around Mach 3 (2,300 mph; 3,700 km/h). This type of engine can operate up to speeds of Mach 6 (4,600 mph; 7,400 km/h). A ramjet is designed around its inlet. An object moving at high speed through air generates a high pressure region upstream. A ramjet uses this high pressure in front of the engine to force air through the tube, where it is heated by combusting some of it with fuel. It is then passed through a nozzle to accelerate it to supersonic speeds. This acceleration gives the ramjet forward thrust. Ramjet engine will not produce any thrust at zero speed air at inlet, by assembly of suction at inlet before diffuser can improve the working efficiency of ramjet missile. By this variation it can also be use in surface to air (STA) and surface to surface (STS) missiles.


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**EVALUATING THE MECHANICAL PROPERTIES OF COMPONENTS MANUFACTURED
BY FDM PROCESS AT VARIOUS PROCESS PARAMETERS**

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ABSTRACT:

Additive manufacturing can refer to variety of processes in which material is deposited, joined or solidified under computer controlled to create three - dimensional object with material being added together, typically layer by layer. FDM (fused deposition modelling) technology builds parts layer by layer by heating thermoplastic material to a semi liquid state and extruding it according to computer-controlled parts. The test samples are designed in CAD (computer aided designing) software with accurate dimensions. Tensile and compression test samples are manufactured in FDM machine by varying process parameters such as infill density and infill pattern. The test samples are tested for tensile strength as well as compression strength using the universal testing machine (UTM) and compression test machine. The theoretical values of test samples are calculated using standard values of the material. Finally, the experimental results are compared with that of the theoretical values.


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CROP CUTTER

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ABSTRACT:

Presently the agricultural industry has come up with a vast range of equipment for efficient farming. At the same time the main drawback is that it is not affordable by farmers with poor economic background. This machine can be used for cutting variety of crops and helps the small-scale farmers with the cost-effective technology. The newly designed crop cutting unit works without using any type of fuel or electrical energy and can be operated with mere muscle force. This equipment uses combined blades for efficient crop cutting. The present designed and fabricated crop cutter can be used to cut the straws of different food grain crops like Paddy, wheat and also grass. It is simple in construction and the working is easy. The crop cutter is actually an application of pure mechanical knowledge to improve the quality of work with minimum labour and time, scope of research in agricultural equipment still remains a fertile field for innovative ideas.

Keywords: Crop cutter, Manual method, combined blades


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AG ROBOT DESIGNED AS PLANT WATERING SYSTEM

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ABSTRACT:

In recent years, the development of autonomous vehicles in agriculture has experienced increased interest. This development has led many researchers to start developing more rational and adaptable vehicles. Now here is a module designed for watering the plants automatically by sensing the moisture content of the soil at the plant base. For bigger plants like coconut, mango, field etc, the total field need not be watered. Instead watering should be done where the particular plant is present. So our vehicle is equipped with water tank, which will identify where the plant is present, sense the soil moisture level (dry/wet) and water it automatically if the soil is found dry. Such types of agricultural robots that can take self- decisions are called as autonomous Ag robots. Here we present a proto-type model of such robot, which does the above- mentioned things without any manual help. The demo model is designed for three plants and the operation will be started by pressing the start button. Once the start key is pressed, the ag robot vehicle moves in the forward direction till the plant. The plant is sensed through the magnetic switch and the vehicle will be stopped at the plant. Then the copper electrodes are inserted at the plant base to sense the moisture content of the soil through rack and pinion mechanism by the vehicle. If the soil is found dry, pumping motor will be activated to water the plant and if the soil is wet, the electrodes are pulled up and moves to the next plant. Thus it checks all the plants, waters automatically if the soil is dry and comes back to the home position automatically after the task is completed.


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FABRICATION OF AGRICULTURAL SPRAYING MACHINE

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ABSTRACT:

Agricultural spraying is traditionally done by farmers who carry knapsack type sprayer because of its versatility, design, and cost. But it is time-consuming and requires human efforts causing problems like back pain. Hence, in order to overcome these problems, we have designed and developed a new agricultural sprayer which is more efficient than traditional sprayers and requires negligible human efforts. A multi-functional device will come in handy that can be used in different stages of farming as per farmer's requirements. This wheel operated pesticide spray equipment consumes less time and achieves uniform nozzle pressure. A crank mechanism with a piston pump that is driven by wheel is also used. The main aim of this project is to develop low cost mechanically operated sprayer pump. The equipment has been validated from the users and feedback has been taken and improvements have been done.

Keywords: pesticides tank, tyre, chain and sprocket, body frame, nozzle.


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