ISBN: 978-81-938236-8-2

Proceedings of:

14th WORLD CONFERENCE ON APPLIED SCIENCE, ENGINEERING AND TECHNOLOGY

WCASET

21st - 22nd November 2018,

Kuala Lumpur, Malaysia

Organized by:

Institute For Engineering Research and Publication (IFERP)

14th World Conference on Applied Science, Engineering and Technology

(WCASET – 18)

Kuala Lumpur, Malaysia

21st - 22nd November 18

Institute For Engineering Research and Publication

www.iferp.in

Publisher: IFERP Explore

This edition can be exported from India only by publisher

IFERP-Explore

Editorial:

We cordially invite you to attend the ***14th World Conference on Applied Science, Engineering and Technology (WCASET - 18)*** which will be held at ***Holiday Inn Express Kuala Lumpur City Centre, Kuala Lumpur, Malaysia*** on ***November 21st-22nd, 2018***. The main objective of ***14th WCASET - 18*** is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in relevant fields of Science, Engineering and Technology. This conference will provide opportunities for the delegates to exchange new ideas and experience face to face, to establish business or research relationship and to find global partners for future collaboration.

These proceedings collect the up-to-date, comprehensive and worldwide state-of-art knowledge on cutting edge development of academia as well as industries. All accepted papers were subjected to strict peer-reviewing by a panel of expert referees. The papers have been selected for these proceedings because of their quality and the relevance to the conference. We hope these proceedings will not only provide the readers a broad overview of the latest research results but also will provide the readers a valuable summary and reference in these fields.

The conference is supported by many universities, research institutes and colleges. Many professors played an important role in the successful holding of the conference, so we would like to take this opportunity to express our sincere gratitude and highest respects to them. They have worked very hard in reviewing papers and making valuable suggestions for the authors to improve their work. We also would like to express our gratitude to the external reviewers, for providing extra help in the review process, and to the authors for contributing their research result to the conference.

Since September 2018, the Organizing Committees have received more than 182 manuscript papers, and the papers cover all the aspects in Applied Science, Engineering and Technology. Finally, after review, about 75 papers were included to the proceedings of ***14th WCASET - 18***.

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of ***14th WCASET- 18***. We would like to thank the keynote and individual speakers and all participating authors for their hard work and time. We also sincerely appreciate the work by the technical program committee and all reviewers, whose contributions made this conference possible. We would like to extend our thanks to all the referees for their constructive comments on all papers; especially, we would like to thank to organizing committee for their hard work.

Editor-In-Chief
Dr. S. A. Khan
Professor
Department of Mechanical Engineering
International Islamic University Malaysia
Kuala Lumpur, Malaysia

Acknowledgement

Institute For Engineering Research and Publication (IFERP) is hosting the ***14th World Conference on Applied Science, Engineering and Technology*** this year in the month of November. The main objective of 14th WCASET-18 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points, and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader.

I express my hearty gratitude to all my Colleagues, staffs, Professors, reviewers and members of organizing committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to travel such a long distance to attain this conference.

Er. R. B. Satpathy
Director
Institute for Engineering Research and Publication (IFERP)

14th World Conference on Applied Science, Engineering and Technology (WCASET–18)

Keynote Speaker

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It is my pleasure that WCASET will be organized from Nov. 21-22, 2018 in Kuala Lumpur, Malaysia, The conference really covers important disciplines of Science & Engineering. I hope participants will enjoy deliberation during the conference and the recommendation will benefit the society for betterment of life.

I wish great success of the conference.

VK Katiyar

(V. K. Katiyar)

Dr. Marmelo V. Abante
Dean, Information Technology, World Citi Colleges, Philippines

MESSEGE:

I am extremely happy that the **Institute for Engineering Research and Publication (IFERP)** is organizing the **"14th World Conference on Applied Sciences, Engineering and Technology (WCASET-18) ".** The conference is providing a broad scope for all the researchers involving all the disciplines to promote interdisciplinary research. This Conference will provide a wonderful forum to refresh the knowledge base, exchange thoughts and explore the advanced research ideas. This occasion provides an opportunity for all the researchers, academicians & students to interact with renowned invited speakers in updating their knowledge in all spectrums. I thank all contributors who enriched the proceedings and congratulate the entire team for conducting such a wonderful event.

Dr. Marmelo V. Abante

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14th WCASET-18

14th World Conference on Applied Science, Engineering and Technology

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ABSTRACTS

Organized by

Institute For Engineering Research and Publication (IFERP)

Health assessment of an EHV Earthing System

Anwesh Kumar Maddikunta, JEF Techno Solutions Pvt.Ltd Bangalore India

Abstract:--

Earthing is the important criteria in an EHV substation for the timely operation of the protective devices and to limit the safe parameters like safe touch and step potentials. The earthing is done at the time of construction of substation with input parameters of soil resistivity, fault current of the design. In course of time the system fault level increases and the extension of bays may happen and still the earth grid will remain the same only with an addition of extra grid for the bay. Audit of all the equipment will be done time to time in order to ensure the proper and timely operation of the devices but for audit of earthing system, only earth grid/pit resistance will be measured to check whether they are in limits. However, by having low grid resistance will not be considered as safe and the earthing system needs to checked for the integrity of risers connecting the equipment to grid, ground grid integrity from corner to corner and the safe touch & step potentials. The aim of this paper is how to verify the earthing system of a live EHV substation for the integrity along with the safe parameters and validating with software modelling without actual shutting down of substation for the testing.

Keywords:--

Soil resistivity, Riser, Riser integrity, grid integrity, Touch potential, step potential, CDEGS software, off grid frequency current injection kit, tuned volt meter.

Integration of Learning Management System (LMS) In Facilitating Class in Understanding Culture Society and Politics (UCSP) Subject To Technical Vocational Livelihood Senior High School (TVL-SHS) Students

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Abstract:--

The research aimed to know the effect of integration of Learning Management System (LMS) in facilitating class in Understanding Culture, Society and Politics (UCSP) subject to Technical Vocational Livelihood (TVL) senior high school (SHS) students in Magdalena Integrated National High School (MINHS). A quantitative, descriptive and pre- experimental approach was used in the study and measures the pre-test-post-test using the exam scores of the students. The first quarter examination, class do not have access to LMS while the second quarter examination, there is integration LMS in facilitating the class. Quipper School was considered as LMS in doing the study. The three created online class for each class in Quipper School was used by the students to explore learning modules and assignments align to the curriculum of UCSP subject. Total population of the students was considered. The statistical reports generated by Quipper School were considered as data for analysis. Interviews and direct observation of the subject teacher was also given importance for additional information of the study. The results shows that all students were able to access LMS to explore the features designed for students to support their learning experiences align to the required curriculum of the subject. The issues with internet connectivity, limited computer availability and distance of classroom to computer laboratory contributed to the length of access of the students to LMS. The topics completed and topic mastered from the statistics provided by LMS were recorded and used for analysis. The results shows that the completion and mastery of the topics results of the students were both directly proportional based on the gathered data. The computed mean value of 8.03 or 11.48% topics completed were recorded based on the modules posted online while a computed mean value of 9.47 or 13.53% topics mastered by the students based on the assignments given in the LMS. It was found out that there is an increase rate of 6.38% improvement to exam score of the students after the integration of Learning Management Systems to the students. It is recommended to integrate LMS in facilitating classes of UCSP and to other subject. Suggestions for integration of LMS in facilitating classes were given.

Keywords:--

Learning Management Systems, Understanding Culture Society and Politics, Quipper School, Technical Vocation Livelihood, Senior High School

Multi-Platform Decision Support System for High Value Crops Using a Posteriori Algorithm

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Abstract:--

The province of Isabela is one the Philippines major food producing areas. It accounts for significant portions of the country's vital staple crops: rice and corn. Isabela is also noted for its production of high value crops (HVC) such as tobacco, bananas, mangoes, coffee and mung beans. The province's agricultural output supplies the needs of many areas of the country and is considered to be a bulwark against scarcity. In addition, commercial food animal production and is also an important and fast growing industry. Information systems, particularly of decision support systems are becoming increasingly important in the agriculture sector. Access to vital, timely information can help stakeholders involved in agriculture and agribusiness such as farmers, traders, government personnel make better decisions about crop production and trade.

This study aimed to develop a web-based integrated information system within a mobile application on digital marketing as an enabler to enhance better access of information for buyers and farmers. It specifically it aimed to identify the challenges encountered by agency participants within the existing system with regard to accessing relevant information on HVCs, to identify the system to be developed to address the identified challenges, to determine the extent of compliance of the developed system with the ISO 25010:2011 Software Quality Assurance Standard, and to determine whether or not there is a significant difference between the assessment of the users and IT experts with regard to compliance with the aforementioned ISO standard.

The Research and Development (R&D) and the V-Model methodologies were selected by this researcher as study and software development methodologies respectively. The study was conducted during the school year 2017-2018 in Isabela Province, involving a total of 85 participants. These participants were chosen on the basis of their involvement in the growing and marketing of high value crops in the province. Questionnaires were the main instrument for gathering data from the participants. Standard statistical methods such as frequency counts and percentage, weighted mean, hypothesis means, and analysis of variance were used as tools in analyzing and interpreting the data gathered. Level of significance was set at .05.

For data visualization and knowledge extraction, the educational edition of the RapidMiner application was utilized to summarize the knowledge generated by the system that can be used to support decision-making. The results show that the developed system conformed with industry-compliant software quality standards and thus satisfactorily met all of the requirements of its users. It was concluded that the developed system is a suitable replacement for the existing system and its deployment recommended.

Keywords:--

Multi-platform, decisions-support system, high value crops, a posteriori algorithm, digital marketing, agri-knowledge.

Estimation the SCS-CN Initial Abstraction at Upper Ciliwung Watershed

Henny Sudjatmikoh, Water Resources Engineering Department, Faculty of Engineering, University of Brawijaya, Indonesia
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Ussy Andawayanti, Water Resources Engineering Department, Faculty of Engineering, University of Brawijaya, Indonesia

Abstract:--

Soil Conservation Service-Curve Number (SCS-CN) is one of method that can estimate the runoff prediction. This method can represent the watershed characteristic by several approach such as soil type, land cover and soil moisture. Initial abstraction is a crucial part on prediction of the runoff depth, peak flow and runoff distribution time. Upper Ciliwung Watershed has been chosen to be a case study since this watershed play an important role in flood management at Jakarta. The objective of this study is to estimate the value of initial abstraction at Upper Ciliwung Watershed based on the spatial distribution of land cover, soil type and 5 days antecedent rainfall condition at its watershed. The averaged value of initial abstraction is around 0.4 – 1.2 mm. The difference value of initial abstraction was attributed to the spatial distribution of watershed characteristic and rainfall over the catchment.

Jakarta Groundwater Modelling for Steady State Condition Using MODFLOW

Iwan Nursyirwan, Water Resources Engineering Department, Faculty of Engineering, University of Brawijaya, Indonesia
Muhammad Bisri, Water Resources Engineering Department, Faculty of Engineering, University of Brawijaya, Indonesia
Lily Montarcih, Water Resources Engineering Department, Faculty of Engineering, University of Brawijaya, Indonesia
Ery Suhartanto, Water Resources Engineering Department, Faculty of Engineering, University of Brawijaya, Indonesia

Abstract:--

Special Capital Region of Jakarta (DKI Jakarta), the capital city of the Republic of Indonesia, is located in north part of Java Island. With a total population of 10.187.595 (2011) and area of 661,2 square kilometres, Jakarta become the world's second and Southeast Asia's largest metropolitan area. Because of the large population, the demand for water in Jakarta is increasing and cannot be fulfilled by surface water. This condition caused the ground water exploitation became uncontrollable and sustainability of the ground water disturbed. This research was used MODFLOW in the GMS (Groundwater Modelling System) to simulate the ground water flow in Jakarta. The simulation is conducted on steady flow condition and using data from observation wells at some locations which considered represent the condition of ground water in Jakarta. The simulation shows the low hydraulic head at some area in Jakarta that represent the lack of ground water potential.

Total Ammonia Nitrogen (TAN) Removal Efficiency in Recirculating Aquaculture Systems by Using Sponge-bed Trickling Filter

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Setyo Sarwanto Moersidik, Environmental Engineering, Civil Engineering Department, Universitas Indonesia, Indonesia

Abstract:--

Sponge-bed Trickling Filter is a recirculating aquaculture systems technology that capable in managing Total Ammonia Nitrogen (TAN) in water until it reaches its safe threshold for fish. The study was conducted on a laboratory scale using a 13 × 13 × 28 cm3 sponge media trickling filter. The trickling filter height and flowrate were 40 cm and 3L/min, respectively. The influent used was synthetic wastewater with water quality similar to Osphronemus goramy Lac. aquaculture with an average weight of 0.013 g derived from the addition of ammonia solution with load variations of 0.4, 0.6, and 0.8 mg TAN/L. During seven repetitions of observations at each load, the results showed that the loading of 0.8 mg TAN/L resulted in a relatively high removal efficiency and a stable Volumetric TAN Removal (VTR) of 96.41 ± 0.880% and 0.0157 ± 0.00105 g/m3-day. The nitrification reaction took place on first order kinetics with the highest rate of removal occurring at 0.8 mg TAN/L load of 0.67 g/m2-day. First-order kinetics is not an optimum condition for sponge-bed trickling filter operations but the 0.8 mg TAN/L load selection minimizes the impact of first-order kinetics as it results in relatively stable percentages and VTRs.

Keywords: --

Sponge-bed Trickling Filter; Total Ammonia Nitrogen (TAN); First order kinetics; Recirculating Aquaculture Systems (RAS); Volumetric TAN Removal (VTR)

Increased Removal Efficiency of Lead (Pb) in Used Lubricating Oil with Acid Activated Clay

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Setyo Sarwanto Moersidik, Environmental Engineering, Civil Engineering Department, Universitas Indonesia, Indonesia

Abstract:--

Used lubricating oil is one of waste categorized as hazardous and toxic waste. It contains heavy metal, and one of them is lead. The existence of lead is due to when the engine is working so that the engine is wearing and lead metal is released to the lubricant. Removing lead from used lubricating oil can be done by using natural clay (bleaching earth) as adsorbent. In this study, the clay was activated by using sulfuric acid (H2SO4) with 1 M, 1.5 M and 2 M concentration variation. By using sulfuric acid, the percentage of montmorillonite mineral increased up to 68% and the surface area expanded up to 62,9 m2/g. Activation is also seen to increase the adsorption power and shorten the contact time. From the experimental results, it is found that optimum adsorption conditions occured at activation with concentration of 1.5 M and with 30 minutes adsorption time. Under these conditions, concentration variation of adsorbent with concentration of 20 g / L, 40 g / L, 60 g / L, 80 g / L and 100 g / L were observed. With this variation, the result shows optimum concentration of 20 g/ L.

Dynamics System Modelling of Sustainable Water Resources Management Due to the Regional Spatial (Case Study on Batam Island of Riau Islands, Indonesia)

Agus Rudyanto, Ministry of Public Works and the Housing Republic of Indonesia, Brawijaya University
Suhardjono, Ministry of Public Works and the Housing Republic of Indonesia, Brawijaya University

Abstract:--

Dynamics system approach is as a paradigma and a tool for helping towards thinking systematically. However, the system is using the graphycally diagram software of cause-reason loop to describe a system. Design of reservoir operation has a depended characteristic of one to another. There is non linier feedback and delay effect as the spesific problem of dynamics system. This research intends to give the overall illustration that has transparant characteristic, flexible, and to be developed easily; to be able to show the counter intuitive due to the behaviour through the analysis of model structure; to show the trade-off compromi and leaverage point. Design of reservoir operation can be seen as a process of policy analysis and the steps of analysis by using system approcah is as follow: structure development, selection of policy variable, selection of policy evaluation indicator, and simulation of dynamics system. Case study is on Batam Island. Result shows that approached method of dynamics system can be applied for simulating some scenarios of water allocation policy on sustainable water resources management such as by giving proportional water due to the water volume in resrevoir. This model can also analyze the effect of reservoir sedimentation on supply performance of fresh water demand.

Keyword:--

water resources management, dynamics system, water allocation design

Evolution of a Defect in 2D WET Foam

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E.A. Dawi, Ajman University, Department of Mathematics and Science, University Street, P.O. Box 346, Ajman, UAE.

Abstract:--

We experimentally investigate the long-time effect evolution of a single topological defect in two-dimensional wet foam. The single defect is inserted in a hexagonal lattice. As the time passes, the disorder initially grows due to the coarsens of the foam of the defect. This long time scale behavior is in a good agreement with the recent simulations. Unlike the results of our previous work, a peak was observed in the disorder cluster. The latter gives qualitative support to simulations of alike conditions in 2D froth.

Keywords ::--

Disorder, Foam, Froth, Growth, Second moment

Road and Traffic Violation Data Analytics Using Random Forest

Aurora Cindy Agno-Balabat, Liceo de Cagayan University
Maria Visitacion Gumabay, St. Paul University Philippines

Abstract:--

This paper presents an in-depth analysis of road and traffic violations pattern using Data Analytics methods, aimed at improving road and traffic management, government planning and decision making. The study identified the road and traffic current management practice as basis of the design development and implementation of the road and traffic management system. The application managed all the road and traffic violation that will produce recorded set for analysis, which carried out from over of five years. Through data cleansing a total of twenty thousand six hundred forty record set was derived. It is important to find use of this record set, build analysis models, and use interactive tools to produce predictive data, understand the relevance, trends, and driving behaviors from the road and traffic violations data in terms of the following predictors: gender of the violator, vehicle owner address, location of violation, month and time the violation was committed and traffic enforcer who issued the citation. The study was able to established a data analysis model by using a powerful classification and regression tool - random forest which was executed using an open source application named Orange. Finally, the developed application was evaluated by system users and IT experts using the ISO 25010 criteria.

Mathematical Approach to Study of Mechanical Characrerization of Tumor Cells-A Reference to Cancer Cells Using Strain Energy Function

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V.K.Katiyar, IIT Roorkee ,India

Abstract:--

Mathematical approach is studied on the mechanical behavior of cancer cells for quantifying the viscoelastic parameters of normal cells and diseased cells. The stiffness and bending moment as physiological parameters are numerically computed to investigate the proliferation of malignant cells. The analysis is aimed at proliferation rate which decides the increased velocity of malignant cells than the normal cells in the blood shear environment. Piola – Kirchoff stress tensor is employed for the quantitative estimation of malignant cells. The mechanical behavior of diseased cell shows larger deformation and lower rate against the proliferation range. The effector and complexes for carcinoma and sarcoma malignant tumors consisting the cancer cells explore the details of time average factor for the growth of metastasis. The study shows the increase of velocity by 0.055mm/sec malignant cells than normal cells for rate of malignancy. The numerical range and the chemical composition play a major role in the viscoelastic properties. It is noted that during the process, the red blood cells loose an amount of iron proportional to the concentration to the hametocrit. This results in the reduction of hametocrit 87.5 (42/48*100)% on the normal range. There appears the reduction in RBC cells leads to anemia in the particular case. The major roles of the perturbation of chemical components show the effect for easily growing of metastasis. This leads to the early growth of tissues (cells) which can further form multiplication of cells in the abnormal form not limited to the incidence of damaging memory glands. The concept of abnormal growth is still unclear as documented in our literature. There appears an indicated evidence for stimulation for carcinoma cells growth when the growth is depending on the growth of carcinoma. Gompertz growth - law is established to analyse the growth of malignancy. Strain energy function is reestablished using Gompertz growth - law equation.

Index Terms:--

Blood, malignant cell, proliferation.

Kinetics Modeling of Waste Plastic Mixture Pyrolysis for Liquid Fuel Production

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Abstract:--

Plastic waste is very difficult to decompose completely since the process requires a long degradation time. One of the thermal treatment methods that can be used to reduce the amount of plastic waste in a relatively short of time is pyrolysis producing mostly liquid that can be used for fuels. Pyrolysis is a process of thermal degradation of polymeric materials such as plastics and organic materials such as biomass by heating without involving any oxygen molecules. The reaction mechanism that occurs in the pyrolysis process has not been observed properly. Most of the previous polypropylene pyrolysis research simplifies the reaction mechanism in which plastic decompose directly into three kinds of products causing some inaccuracy. This study aims to further investigated the reaction kinetics that occur in the polypropylene pyrolysis process. The pyrolysis process of polypropylene has been carried out with temperature variations of 350, 400, 450, 500 and 550 oC. The experimental data were fitted into the model equations and numerically adjusted to get the value of reaction rate constants. The calculation data is validated using the coefficient of determination to predict the right reaction mechanism. The results showed that by using the Kaufopanos reaction mechanism approach was well fitted with experimental data. The activation energy obtained using the model II mechanism is 201.51 kJ/mol.

Keywords:--

Pyrolysis, Polypropylene, kinetic, liquid fuel

Optimization of Optimal Water Price for Supporting Operation and Maintenance of Jatigede Dam

Harya Muldianto, Ministry of Public Works and the Housing Republic of Indonesia, Head Bureau of Operation and Maintenance on Cimanuk Cisanggarung Water Resources Authority Management,

Abstract:--

This Paper proposed method which allow flexible operation of the multiple parallel which is connected to the wind generation which neglecting the required voltage and frequency synchronization. In this paper we are implementing the design of a dc grid which is depend upon the wind power generation system in the poultry farm. Therefore the control scheme which is utilized for separate controller for the inverter when the grid is connected and the islanded operation have been proposed. A model predictive control algorithm which is used for the better transient performance with respect to the change in the operation condition which is proposed for the inverter operation. Fuzzy controller is denoted as human decision making mechanism which provided the operation for the electronic system with the expert decision. Fuzzy logic controller is introduced for the fluctuations of the micro grid which are controlled with the constant regulation of power. And a separate controller have been developed for the wind turbine which is used for maintain the power to mitigate the variation error. Therefore we are comparing the controller with the fuzzy controller. Therefore to determine the capability of the proposed micro grid which is connected and islanded from the distributed grid which is obtained by discussed.

Index Terms: –

Wind power generation, Fuzzy controller, dc grid, energy management, model predictive control.

Influence of steel fibers on flexural behavior of rubberized hybrid reinforced concrete beam in layered

Hasan Alasmari, School of Civil Engineering Universiti Sains Malaysia
Badorul Hisham Abu Bakar, School of Civil Engineering Universiti Sains Malaysia
Hazizan Md. Akil, School of Civil Engineering Universiti Sains Malaysia

Abstract:--

This study investigates the effect of crumb rubber aggregates with and without steel fibers on flexural behavior of reinforcement concrete beam in layered. Eighteen rubberized reinforced concrete beams were prepared in this experimental works with ratio of aggregate replacement of 10%, 12.5%, and 15% by volume of sand. Two types of steel fibers were used, namely, micro copper coated steel and hooked-end fibers with an aspect ratio of 60 and 80, respectively. The amount of selected fibers in the rubberized concrete is 0.5% by volume. The performance of rubberized hybrid reinforced concrete beams were observed and measured based on the failure patterns, total energy (toughness), and stiffness, and ultimate deflection, modulus of rupture, strain capacity and ductility index. As a result, the rubberized hybrid reinforced concrete beams incorporating copper steel fiber and crumb rubber has shown a promising performance in the majority of characteristics such as stiffness, ultimate deflection, ductility index, the failure patterns, and critical strain while, the rest characteristics (e.g. ultimate load ,toughness and modulus of rupture and width of cracking) observed on hybrid beams contains crumb rubber and hooked-end fiber. The hybrid rubberized concrete beam without steel fiber show less performance in their characteristics than the others which indicated that combination with other materials is necessary to promote further enhancement.

Keywords:--

Rubberized concrete, hybrid, steel fibre, layered beam

Rate of Index Degradation Performance for Drainage Infrastructure

Hendra Ahyadi, Directorate General of Water Resources, Ministry of Public Works and Housing

Abstract:--

Well-managed and maximum irrigation needs to be done to maintain the sustainability of the irrigation system, so that food security which becomes national priority can be realized. PUPR Ministerial Regulation No. 12, 2015 which is a substitute for Ministerial Regulation No. 32, 2007 concerning the exploitation and maintenance of irrigation networks regulates the performance evaluation of irrigation system which consists of 6 (six) parameters in which the most dominant parameter is physical infrastructure. The index data of irrigation physical infrastructure performance obtained based on the time function can be made as a benchmark for which in time can be linked to the estimation of irrigation network O&P funding (AKNOP) which is later called as the degradation rate of irrigation system physical infrastructure performance. The degradation rate formulation of irrigation physical infrastructure function is also closely related to maintenance and rehabilitation plans. The method used to analyze the degradation rate of the irrigation system physical infrastructure is statistical modeling by calculating the relations of the time variable needed for each degradation process.

Keywords:

Physical Infrastructure, Degradation Rate, AKNOP

High Performance Quasi -Z- source Resonant Converter with Hybrid Energy Resources for Rural Electrification

John De Britto C, Assistant Professor, Jeppiaar Engineering College, Chennai
Dr.S.Nagarajan, Professor and Head, Department of EEE, Jerusalem College of Engineering, Chennai

Abstract:--

This paper focuses on quasi Z-source converters which give a wide input voltage and load regulation supports to multi-mode operation. It can perform buck and boost operations with an efficient range of output voltage and here we are using zeta converter for both buck boost operations. It offers a fuzzy logic based voltage controller for hybrid energy sources by z-source converters. Among renewable energy sources the wind and PV energy are being commonly used for their sustainability to generate electricity, here too both solar and wind are used to produce renewable energy.The maximum power point tracking(MPPT) is achieved and analysed by controlling the duty cycle of the converter. The fuzzy logic control based MPPT is introduced in this work to track the maximum power point of the PV array.
The Principle of proposed resonant converter is described with Photovoltaic and wind module. These two output levels are combined to give the renewable energy output. 500V dc output is developed from the solar PV module. And with the wind turbine also we can generate of 500V dc output. The proposed model can also produce
free output from the source. Zeta converter which is in Quasi Z source converter, enables primary side of the converter to provide both buck operation when the duty cycle is less than 0.5. and boost operations which can be obtained when the duty cycle is more than 0.5.It is an advantage that output peak to peak ripple current values can be reduced. Losses can also be reduced and the system increases efficiency. Voltage gain of the systems can be greatly improved and harmonics also greatly reduced. The inverter is used to deliver DC to 230V AC output for rural electrification. The proposed converter is also coupled with hybrid energy resources to supply power for 10hours and is capable of ensuring ripple-free output voltage with the variation of input voltage. The overall operation of the proposed converter has been effectively verified by MATLAB simulation software..

Keywords:--

DC-DC converter, solar module, wind module, DC battery, Resonant converter, fuzzy logic, MPPT.

Hydraulic Performance of Inclined Pile Breakwater Model under Irregular Wave Condition

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Abstract:--

The usage of breakwater as coastal protection structure in Indonesia becomes popular nowadays, however the coverage area using this hard structure is also limited because of the financial aspect. Inclined pile breakwater study is developed to provide alternative instead of using massive structure. The role of this structure is also the same, where the wave energy reduces by the existing of the structure and hence the coastal area behind the structure becomes protected. However, the inclined breakwater need to be optimized at the certain angle. Therefore, the objective of this study is to investigate the optimum inclined breakwater interact with the wave impact. In addition, the modification of material will be tested as well and we expect the cost for construction can be decreased significantly. The expectation of this study results is that we can propose the optimum design of inclined breakwater to counteract the wave impact and the effectiveness of bamboo material performance as alternative material of conventional breakwater.

Keyword:--

Coastal protection, inclined pile Breakwater, wave impact

A review of application Building Information Modeling (BIM) for construction activities.

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Abstract:--

The BIM (Building Information Modelling) includes design and construction information. It is not only visual presentation, but also state construction simulation. The main application of BIM is to provide 3D animation, environmental analysis, green energy analysis, crash detection analysis, quantity & cost analysis, operation and maintenance information. The BIM model provides platform for information integration. It is helpful for design evaluation and assist designer to verify drawing correctness and consistency. All kinds of information can improve project management level. By analyzing relevant information of the construction process, the BIM model can provide a better way to the building operation management also. Therefore, many enterprises are starting to adopt BIM tool, but some of them do not know the the BIM series function clearly, because there is no more specific reference to use. This article resource is according to literature review from different references, such as conference and journal articles. This article is to analyze BIM application in practices and compare & summarize relevant research results. The results display various influence through adoption of BIM, such as 3D/4D/5D/6D functions. Finally, the article objective is to promote the whole BIM functions could be applied completely in the construction activities.

Mango Variety Recognizer Using Image Processing and Artificial Neural Network

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Abstract:--

Mango (Mangifera indica L.) is the third most important fruit crop of the Philippines based on export volume and value next to banana and pineapple (1). Variety recognition is considered an indispensable tool for ensuring quality product. Recognition can be done by human experts but with their absence, technology cannot be put into good use. This paper developed a multilayer perception artificial neural network (ANN) application that can identify a mango variety from a leaf image of any of the four predominant mango varieties of the Philippines: Carabao, Pico, Pahutan and Katchamita. Nine color features, seven Hu moments morphological features and nine textural features were extracted from each leaf image samples using different image processing techniques such as the automatic thresholding method of segmentation, median filter, dilation and erosion. The ANN has 25, 50, and 4 neurons in the input, hidden and output layers respectively. The recognizer was tested with 40 leaf images (10 samples for each variety) from the samples used in the training and 40 leaf images that were not used in the training. The test obtained an accuracy of 96%.

Model Evaluation of Dam Performance Based on Social Economical and Cultural Approach

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Abstract:--

Indonesia has big potential in agriculture field and hence water supply are needed it in sufficient amount. One of critical infrastructure is that dam performance. Dam construction phase will be optimized by considering technical and non-technical aspects. As we know that the dam can not be performed well if we neglect non-technical aspect. The objective of this study is to evaluate dam performance based on non-technical aspects by developing model evaluation. Non-technical aspects which will be evaluated are social, economical, and cultural aspects. Some research questions reveal in this study; (1) What would be the impact of dam construction in non-technical consideration? (2) what would be the effect of non-technical aspect in the post-dam construction? (3) what will be the model evaluation by emerging technical and non-technical aspect? (4) what will be the implementation strategy to optimize the non-technical aspects consideration? The research questions mentioned below are very critical to be answered. Therefore, this study is needed to explore in detail

Keywords :—

Dam performance, non-technical consideration, model evaluation

Development of Hybrid System for Robotic Navigation

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Abstract:--

This paper presents a development of hardware and software of a hybrid system for autonomous robot navigation. The system let the robot to navigate through a given field and throw objects to a certain targets and certain zones. This work utilised hybrid systems by using encoder, digital fiber sensor and fiber optic sensor. The system involved the mechanical parts and programming parts for robot navigations. Smooth navigation were achieved when rotary encoder embedded on the robot for tail, left and right side of the robot, enable the robot to move in correct position. Furthermore digital fiber sensor is used for color detection as each color gives difference response, and fiber optic sensor for detection of hindrance. The hybrid system is observed to be competent for the robot to navigate autonomously and effectively in unknown environments. It has been shown that in this work the motion of the robot can be operated as target conditions and shows that color and hindrance play an important role for navigation system.

Review on Factors Influencing Labour Productivity in Construction Project

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Abstract:--

Productivity in a construction project closely related to the labour. Productivity of construction industry has a significant impact on the cost and profitability. A variety of previous studies on the identification of the factors that affect construction labour productivity (CLP) has been carried out by researchers in many countries. This study aims to critically examine the factors that influence labour productivity and classify these factors into groups of factors based on previous studies. Drewin's Open Conversion System is a theoretical framework used to classify those factors in this study. Based on this theory, there are three key factors, namely input, internal environment and exogeneous. The input category consists of labour, finance, material, and equipment. Design, health and works safety, supervision, organization, scheduling, project, leadership and coordination, management, motivation, technology, socio-psychology, communication are the internal environment category. The exogenous category includes weather, government regulations, site conditions, economic conditions, public. In this critical review, 175 factors have been identified affecting the productivity of construction labour which are classified in the framework of the Drewin theory.

Index Terms:--

Construction, labour, productivity, CLP, review.

Review on the Unethical Conducts and Practices among Professionals in the Construction Industry

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Noraini Hamzah, Department of Civil & Structural Engineering
Muhamad Azry Khoiry, Department of Civil & Structural Engineering

Abstract:--

Construction industry involved with large number of stakeholders. This industry has a complex contractual structure besides facing with several of psychological human behavior that exposed to the unethical conducts and practices. Professional ethics has been discussed warmly today within the construction industry. Ethics has been identified as a major catalyst for the construction industry to attain status to a successful industry in the worldwide. As a result the aims to be a developed country can be achieved with cooperation from every structural in the construction community. However, without any changes on the unethical conducts and practices among professional in the construction industry can make it all this becomes useless. Thus, the solid understandings and changes need to be executed and strengthened to ensure that the problems in the professional ethics can be resolved. This paper discusses and reviews on the unethical conducts and practices among professionals in the different countries such as Malaysia, Pakistan, Australia, Kenya, United Kingdom and India whereby the different behavior will be visible. The most common highlighted for the unethical conducts and practices among professionals in the construction industry were the unfair conduct, negligence, conflict of interest, collusive tendering, fraud and bribery. In the previous studies, there were mechanism suggested whereby they are divided into short, medium and long term solutions based on the project time frame, cost and quality. The mechanism suggested can be catalyst in achieving and enhancing ethical conducts and practices among the professional in the construction industry. This review will provide useful information to every stakeholder in confronting with the unethical conducts and practices among professional in the construction industry involved.

Keywords:--

Construction industry, ethics, ethical issues, professional ethics

Mobile-based Power Board and Dimmer Light Using Raspberry Pi with Power Monitoring

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Abstract:--

The project is an enhancement from a previous iteration that uses a web application to control the power board. The project composes of a mobile application to control the power board, along with a web application to manage its users, sensors to measure the power consumed, raspberry pi to act as its server, and machine learning to recommend the device identified. The proponents decided to use a hybrid prototype and agile methodology to allow them to deliver early mock-ups, evaluate outcome, and continuously improving through its evaluation. The following were the tests that we conducted: functionality for its user usability; reliability for its hardware; and accuracy for its device identification. Both functional and reliability were successful within acceptable range, meanwhile, the accuracy tests for the device identification couldn't reach the expected outcome and was off with a range of 22% from the calculated evaluation. Nonetheless, the project is fully functional and the possible lacking for the device identification were recommended for its next iteration.

Romblon Islands into a Smart Tourism Destination through Point Of Interest Recommender, Augmented Reality and Near Field Communication: A Proposal

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Abstract:--

The Philippine tourism industry is expected to grow with more tourists visiting and through the discovery, development and improvement of tourist attractions. Through partnerships with the local government and media developer groups, there have been implementations of e-Tourism in the country. Though e-Tourism is an effective way of tourism promotion, smart tourism offers a more innovative way such that it enhances the tourist experience through anticipation of their needs through smart recommendations of points of interests, attractions and services while sharing their experiences to aid other tourists' decision making on which places to visit. Smart tourism is a fundamental need for such cities or municipalities which have historical value and tourist attractions. Due to this, the study aims at creating a smart tourism destination framework that would be applicable for the current information and communications infrastructure of Romblon Islands. A smart tourism mobile application will be developed that would feature a Point of Interest Recommender based on user's location, check-in ratings and social network ratings. Augmented reality and near field communication will be used to bridge the physical and digital world. The application's acceptance will be investigated using the Unified Theory of Acceptance and Use of Technology.

Application of Monte-Carlo-Based Algorithm in an Interactive Image Wall Display Using Kinect Motion Sensor and Instagram

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Anna Liza A. Ramos, St. Michael's college of laguna-binan, laguna.
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Abstract:--

Interactive Image Wall Display is very appropriate to events such as such as exhibits, conventions, party, etc., that will provide an eye-catching display that will attract people. It also serves as a medium that instead of having the usual photo booth that most people or group of people wait so they can get a picture of themselves and later will be shared on social media, they will just use the Instagram application on supported devices to take the picture themselves and later will be shared not just on social media under the Instagram, but also will be displayed on the wall with the help of the program. The program could also be used as another medium on exhibits or any photo displaying activity. This makes any art, especially photography having an increasing appreciation due to its internet-based system where having a million of users. The system will be using Kinect Motion Sensor as the hardware for capturing sensory inputs from user to comply with the word 'interactive'. The system will also be using Instagram together with the help of the Instasharp Library that contains Instagram's Application Program Interface to be able to fetch images that are uploaded by the users. Instagram is an online mobile photo-sharing, video-sharing and social networking service that enables its users to take pictures and videos, and share them on a variety of social networking platforms, such as Facebook, Twitter, Tumblr and Flickr .The algorithm that will be used is the Monte Carlo methods (or Monte Carlo experiments) which in turns, are a broad class of computational algorithms that rely on repeated random sampling to obtain numerical results; typically one runs simulations many times over in order to obtain the distribution of an unknown probabilistic entity. Rapid Prototyping is the paradigm that will be used in the proposed system. It is characterized by the use of very high-level languages, which probably will not be used in the final software implementation but which allow rapid development, and the development of a system with less functionality with respect to quality attributes such as robustness, speed, etc. [1]

Index Terms

Interactive Image Wall Display, Kinect, Instagram, Monte Carlo Method, Joint Application Development

Comparing Time Series Analysis Methods and Predicting a Dengue Case in Selangor

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Sal Syahira Binti Shahrim, Universiti Teknologi Mara, Malaysia
Nor Izzati Binti Zakki, Universiti Teknologi Mara, Malaysia
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Abstract:--

Dengue fever has been a worst phenomenon since the past few years in Malaysia. As globally known, dengue is one of the epidemic disease that will contribute to death. By using the data of the number of dengue cases obtained in Selangor from 2010 until 2014, a time series analysis methods and compared them in order to predict the future trend of dengue cases in Selangor. Selangor has been selected as the location of interest since Selangor has the highest number of occurrence in Malaysia's history. This study will consider three time series methods which are ARIMA, Double Exponential Smoothing technique and Holt's Winter. The best method will be selected to represent the dengue data trend in Selangor by referring to the lowest values of MSE, RMSE and MAPE of each method. From the evaluation process, Holt's Winter has the lowest values of error measures when compared to the other models. Holt's Winter most suitable model to represent and to predict the future trend of our dengue cases data in Selangor.

Attendance Monitoring System for Selected Schools in the Philippines with an Inclusion of Optimization Query Algorithm

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Neil P. Balba, Lyceum of the Philippines-Laguna
Corazon B. Rebong, Colegio de San Juan de Letran-Calamba

Abstract:--

In this paper, the researchers provides a solution to easily check the attendance of the students using an automated seat plans with pictures and basic information of the students. It's a fact that students who attend school regularly learn more and are more successful in school than students who do not. Parents who make regular school attendance a priority also are helping their children learn to accept responsibility, and that's an important lesson for a successful life. [1] Attendance patterns are formed early in life. Children who develop good attendance habits in the early grades will be more likely to continue them throughout their school career, as well as into their chosen career. Regular attendance is critically important, because students who miss school miss out on carefully planned sequences of instruction. They miss out on active learning experiences and class participation. They miss out on the opportunity to ask questions. As a result, they are more likely to fall behind, and they are more likely to drop out.

Index Terms:

Drag, Drop, Re-Arrange, Seat Plan, Images, Reports, Log In, Log Out, Print, Automated / Automation, Grid, Section, Schedule, Load, Computer-Based Systems, Monotonous, Tedious

Developing of Predictive Decision Support System for Nursing Licensure Examination Results using Decision Tree Growing Methods

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John Paul P. Miranda, Don Honorio Ventura Technological State University

Abstract:--

Decision tree learning is one of the most significant classifying techniques in data mining and has been applied in many areas including mining academic data. One main topic under educational data mining is to monitor student academic performance, especially if a given course has a licensure examination. In the Philippines, licensure examination is one serious aspect in the field of education. However, still very few researches have been carried out concerning predictions of licensure examination performance. Most researches focus on academic retentions and developing dropout models. With this, the study is aimed to extract predictive model using Decision Tree Algorithm. The study aims to compare the performance of the decision tree growing methods in predicting student licensure examination using Confusion Matrix Test. These methods consist of Chi-squared Automatic Interaction Detection (CHAID), Classification and Regression Trees (CRT) and Quick and Unbiased Efficient Statistical Tree (QUEST). The extracted rule sets from the algorithm will be embedded in a decision support system that could early predict and identify who will fail in the nursing licensure examination so proper academic support programs can be formulated.

A Multi-Layer Perceptron Model in Analyzing Parametric Classification of Students' Assessment Results In K12

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Rhommel S. Avinante, CAVITE STATE UNIVERSITY-INDANG CAMUPS
Mari-Pearl M. Valdez, VIRGEN MILAGROSA UNIVERSITY FOUNDATION-PANGASIAN
Myen Dc. Dela Cruz, VIRGEN MILAGROSA UNIVERSITY FOUNDATION-PANGASIAN.
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Abstract:--

This paper focused on analyzing parametric classification of students' assessment results using a multi-layer perceptron (MLP) model. There are wide varieties of tools available but MLP model is the most appropriate tool to analyze students' assessment results in terms of scores attained in each specific category. Categories being described here are the domains needed to understand the career path that a student has to be taken in the future while they were currently completing their curriculum under the K12 educational approach. Career assessment are categorized are as follows: arts and design, business, information and communication technology, criminal justice and law, culinary arts, education, engineering and architecture, health care, liberal arts, math and science, and vocational respectively. MLP model will be implemented as to generate the comparative results of what specific categories are much close to students' career in college. Multi-Layer Perceptron (MLP), a computational model encompass the three parts namely the input layer, hidden layer, and the output layer. This algorithm along with its three main parts can learn from a given datasets and can make predictions based on the data points given. MLP are usually employed in supervised learning problems which means that the training set of input-output pairs and the network, must learn to model the dependency between them.

Irrigated Rice Yield projeCtion E-application (iRYCE)

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Jesus B. Pizarro, Saint Paul University Philippines

Abstract:--

Using the descriptive and developmental design, the study developed and evaluated an Irrigated Rice Yield projeCtion E-application (iRYCE) to predict rice yield of irrigated farms in Bayombong, Solano, Bagabag and Quezon, Nueva Vizcaya. A total of twenty (20) farmer participants with irrigated rice fields adjacent to each other were the respondents from the four municipalities. While forty (40) system evaluators and end users from the academe, ICT developer and agriculturist evaluated the proposed iRYCE application. A questionnaire, interviews and observations were conducted. The researcher used frequency count and percentage distribution, mean, chi-square, pearson r and linear regression analysis to predict and determine the extent of relationship of projected rice yield with the result of soil analysis, average yield of the participants per annum, rice variety, fertilizer application, number of days of rice seedling before transplanting and harvesting. Dynamic System Development Method Framework (Voigt, B., 2018) was utilized in the development of the iRYCE application. As a result, Nitrogen nutrient of the soil samples from the four municipalities had a low qualitative description. Phosphorous nutrient test had a qualitative description distributed from low to high and Potassium had a high qualitative description. The municipality of Solano had an average description rating in terms of average yield per annum while the three other municipalities had a descriptive rating of low. The overall rice varieties that were utilized by the farmer participants were RC 222 (45%), RC 226 (25%), RC 216 (12.5%), RC 152 (10%), RC 440 (5%) and RC138 (2.5%). Majority of the farmer participants followed fifteen days (15) after transplanting in their fertilizer application of side dress. While the days before harvesting practice of the farmer participants had a range from 108 to 115 days. Findings showed that the extent of software compliance was accepted unconditionally based on ISO 25010 criteria.

Key Words: -

Developed system, Soil analysis, Dynamic System Development Method Framework

Navigation System for Blind - Third Eye

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Abstract:--

Many people suffer from serious visual impairments preventing them from travelling independently. In this fast moving world, these people are generally left underprivileged. Few methods have been used to help them and provide them with some level of mobility comfort. Conventional methods such as trained dogs or the cane are not enough reliable in providing sufficient information of possible hindrances. Moreover, training and managing dogs is challenging. There are some guidance systems which use RFID technology. However, this technology cannot be used in an outdoor open area. In this paper, an AI based system titled "Navigation System for Blind - Third Eye" is proposed. This work offers a simple, efficient, configurable electronic guidance system for the blind and visually impaired persons to help them in their mobility regardless of where they are; outdoor or indoor. The originality of the proposed system is that it utilizes an embedded vision system of simple IR sensors, sonar sensors and camera. The system brings together all reflective signals in order to codify an obstacle through processing the reflective signal by a microcontroller. This system can be fasten to a hat or to a hand mini stick (size of a pen). The system provides an affordable and a reliable solution and also helps the impaired people to become more independent.

Experimental Investigation on Banana Fibre Reinforced Concrete with Conventional Concrete

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Abstract:--

Banana fibre reinforced concrete is high performance fibre reinforced concrete with significant behavior under tension. In this paper, examines the strength behavior of concrete reinforced with banana fibres. Banana plant (Scientific name: Musa acuminate) not only produces the delicious fruit but it also provides the textile fibre. This paper mainly focuses the banana fibre based composites which have wide applications in construction. These banana fibres have good physical and mechanical properties and can be employed more productively. Banana fibres are economical, ecological and perishable. Emphasis is placed on the influence of fibre content on the key micromechanics properties relevant to composite ductility. In this investigation, six different percentages of banana fibres 1%, 2%, 3%, 4%, 5% and 6%) having 40mm length was used. Ordinary Portland cement of grade 53 and M30 grade concrete were used. At various periodical ages, the banana fibre reinforced concrete is tested for compressive strength and split tensile strength.

Key words:--

Banana fibre, Compressive strength, Concrete, Ordinary Portland cement, Split tensile strength.

Learning Traffic and Road Rules Implemented on Role Playing Game with Time and Distance Approximation

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Matthew P. Habana, San Pedro College of Business Administration-San Pedro, Laguna

Abstract:--

This research discusses about how every people improve and learn towards road safety and traffic rules while utilizing an educational game. Nowadays, road accidents are becoming more serious and needs to be resolved. Common reasons from this accident are lack of knowledge about road rules, drunk driving and disrespect of safety. Learning a better way of the rules prior to traffic safety, the researchers will create and develop an educational game that will give the user an intensive learning with regards to the traffic rules, attitude towards driver to driver and driver to pedestrian. Playing an educational game teaches individual the essential ideas needed to avoid certain accidents in order to become safe and minimize certain hazard risks.

Augmenting Literature and Comprehension of Senior High School Students in English Language Using an Educational Role Playing Game

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Abstract:--

As Filipinos, speaking and understanding English has become a huge part of our daily lives, it helps us communicate and gather information about several topics to our interests. However, many students fail to comprehend the English language because most of our country's educational institutions lack the strategies to make learning English enticing and easier to understand. With this problem at hand, students tend to lose interest and opt into cheating in their English classes. But as the years pass by, technology has changed the way we communicate and study. Thus, as computer science professionals we aim to make learning English an enjoyable and compelling task to complete by incorporating English learning in an educational game that explores different parts of English.

Index Terms

Role Playing Game, Module, Educational Game, English Grammar and Composition

Students Perspectives on the Integration of Online Collaboration Tools For Learning

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Abstract:--

This study was conducted to determine the students' perspectives on the integration of Online Collaborative Tool in Learning. Specifically, it aimed to determine the online tools used by the students in learning within or outside the classroom; identify the problems or challenges encountered by the students in using online tools; assess the perception on the benefits of using online collaborative tools in learning; determine the needs of the students when using an online collaborative tool in learning; and find out the difference on the perceptions of the ICT students and non-ICT students. The study made use of descriptive method of research. Student's perceptions toward the use of online tools for learning were determined through a survey questionnaire. Weighted mean, percentage, ranking and z-test were used in order to analyze the data gathered from 302 respondents (50 ICT and 252 non-ICT students) from the different colleges in the Isabela State University Cabagan, Campus which was drawn through stratified random sampling. Results showed that students generally agreed that online collaborative tools are beneficial when used in learning. The perception of Non-ICT and ICT students on the use of online collaborative tools for learning revealed significantly difference. However, the students primary problems encountered were the unavailability of internet connection, unavailability of computer to be used and lack of financial resources. Whereas, to maximize the benefits of the use of online collaborative tools for students learning, the following should be considered: free internet connectivity in the classroom, available computers, viewing of class standing, announcement notification, and viewing of announcements.

Index Terms:--

Integration, learning collaboration, online collaboration tools, perspectives

Modeling and Design of Two Links Robotic Manipulator for Grading and Sorting of Rotationally Symmetric Products

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Abstract:--

This paper present a design and modeling for a two link robotic manipulator for grading and sorting system. The mechanical design calculation of the robotic manipulator is accomplished firstly to estimate the torques and positions of manipulator that are required to move a certain payloads from one to another position, which is resulted by choosing of the right electrical motors. The mechanical design drawings for this manipulator system are fully done using Autodesk Inventor Software which concerns the real joint of the robotic manipulator. The dynamic equation of the robotic manipulator system is derived using the Lagrange equation which is then represented in the state space method to make simple for utilization in Simulation and real-time systems.

Index Terms:--

Robotic manipulator, two link manipulator, design and modeling

A Supplementary Learning Management for Elementary Pupils in the Philippines with an Implementation of Predictive Search Algorithm

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Rejan L. Tadeo, Lyceum of the Philippines University – Intramuros, Manila
Pastor R. Arguelles JR, University of Perpetual Help System-Molino
Neil P. Balba, Lyceum of the Philippines University-Laguna

Abstract:--

In the primordial times books are used and recommended for gathering information and education in and outside the school. This approach helps the students and the teachers in retrieving exact information intended for each specific subject. Most teachers rely on books as their references which include but not limited to textual and graphical information. On the other hand, the traditional classroom portrays the passive way of teaching the students inside the classroom. There were a lot of students who were considered to be slow and fast learners. Most of the time, teachers find difficulty in handling their students specifically in terms of broad acquisition of knowledge. Fast learners tend to learn a lot from the given lesson or topic while the slow learners consume more time to memorize or even learns the said topic. The researchers will develop a mobile application which aims to provide an answer to this problem. The researchers had chosen this project believing that it will be great help for the teachers, students, and the administration as well. Through the use of the said supplementary mobile learning tool, the users or students can go back to their previous topic and will proceed to the next topic if in case passing post assessment. With the help of the proposed system, parents and teachers both hand in hand in delivering good quality education to the students.

Index Terms

Mobile Learning, Predictive Search Algorithms, Supplementary Learning Management

Normative Improved Artificial Fish Swarm Algorithm (NIAFSA) For Global Optimization

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Abstract:--

Optimization is an important field of research. Various optimization algorithms have been developed to solve optimization problems. Nevertheless, many have not succeeded to achieve the real global optima. Hence, a research on designing and developing a global search and optimization algorithm is presented in this paper. The aim is to enhance the performance of global and local searching strategy in term of best optimal solution. The fish swarm algorithm with the particle swarm optimization with extended memory (PSOEM-FSA) is hybridized with the normative knowledge to become a normative improved fish swarm algorithm (NIAFSA). The feature of global crossover breeding is installed into the proposed algorithm to achieve relatively consistent results. A random initialization of initial population is introduced to spread out the candidates of artificial fishes (AFs) over the solution space. In addition, parameters such as visual and step are made adaptive along the iteration process to balance the contradiction between global and local search ability. The collected results are analyzed and compared with few existing fish swarm variant algorithms to verify the performance of the proposed algorithm.

Experimental Investigation on Special Concrete Using Steel Nail

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Abstract:--

Steel nail plays a major role in day-to-day life of human and used to join wooden materials, brush and building structures. This paper examines the prospective directions of using steel nail in concrete composites for structures. The specimens are cast to evaluate the compressive strength and flexural strength by adding steel nail into the concrete matrix. In this investigation, five different proportions of steel nails in varying percentage of 3%, 6%, 9%, 12% and 15% was used. The outcomes showed the effect of steel nail on concrete has a significant amount of increase in compressive and flexural strength. To optimize the use of steel nail in concrete.

Key words:--

Steel nail, Compressive strength, Flexural strength.

Philmap: A Role Playing Game of the Different Tourist Spot Destinations in the Philippines with the Use of Decision Tree Algorithm

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Abstract:--

The researchers found out that not all Filipinos have the knowledge regarding the Philippine's Tourist Spot Destination, with those findings; the researchers highly recommends creating a role playing game which studies different tourist spot in the Philippines. Technology is very useful and reliable to humankind. It simply does because it makes things easier. This research focused mainly on A Role Playing Game of the Different Tourist Spot Destinations in the Philippines with the use of Decision Tree Algorithm which shows how even a role playing game can integrate many types of learning. This study involves the captivating regions of the Philippines, how a game can be used in unfolding the interest of Filipino about the subject matter and how it will expand their knowledge. The researchers were tended to develop a computer game application which can be play using computer. It is explicitly designed with educational purpose and focuses on how to promote and accentuate the Philippines' tourist spot destinations. It displays the beautiful landmarks in the Philippines. The concept and the rules of the game are evenly discussed furthermore in the next succeeding chapters. The computer game application will be develop based on RPG Maker VX Ace, with the help of Sprite Creator and Adobe Photoshop.

Index Terms

Role Playing Game, Tourist Spot Destinations, Decision Tree Algorithm

A Web-based Multilingual Language Translation

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Abstract:--

This study was conducted to develop a web-based multilingual language translation which focused on two main points: the development of web-based multilingual translation system for Ibanag, Tagalog and English and the evaluation of system. Specifically, to determine and gather Ibanag words based on the available printed materials and informants, design and develop a website that will translate the words or phrases in Ibanag to Tagalog and English with the related words, an auditory modality and pictures and determine the extent of performance of the developed system. A Greinbach Normal Form (GNF) rule extraction algorithm was utilized to translate the given words and phrase in Ibanag, Tagalog and English with auditory modality and image, while Inference Engine was the method used to execute the source language text / word and analyses the processes based on the rules. Rapid Word Collection (RWC) and Dictionary Development Process (DDP) were the approaches and processes utilized in gathering of Ibanag words. The words gathered were submitted to the language experts for validation where Ethnographic translation was utilized in translating the language.

The system was developed using the Agile Web development process model. To assess the performance of the system, a survey questionnaire was conducted based on the ISO 25010:2011 standard. As assessed by the participants and IT experts, the study revealed that all the prescribed system category (e.g functionality, usability and reliability) had been complied to a "highly acceptable".

Keywords:—

Auditory modality, ethnographic, inference engine, multilingual, translation

Performance of Moving Bed Biofilm Reactor for Ammonia Nitrogen Removal from Surface Water as Pre-Treatment Process

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Abstract:--

High concentration of NH3-N on surface water could cause problems in drinking water treatment. The raw water in this condition usually polluted by NH3-N and organic matter. In order to remove those pollutant a pre-treatment process is needed. This treatment generally uses chemical and physical processes, such as chlorination and activated carbon that produce harmful byproducts. Moving Bed Biofilm Reactor (MBBR) is one of the solutions developed to reduce the nutrient and organic levels in raw water. The research was conducted using a bench-scale reactor with 6 L capacity operated with Kaldness K1 as the medium and oxygen supply of 7 L/min. Reactor performance is assessed based on parameter removal efficiency with variations of Hydraulic Loading Rate (HRT) which were 1, 1.5 and 2 hours. After operated for 48 days, the result showed that the optimum residence time is 1.5 hours with the ability to remove Chemical Oxygen Demand (COD) and NH3-N 51.8% ± 0.2 and 54.3% ± 0.28 respectively. Batch experiment were performed to study nitrification kinetics. It showed that the kinetics of the ammonia removal rate in MBBR takes place at zero order, with a rate constant removal of 0.0056 g/m2.day. The results showed that by providing contaminants with high concentrations, the reactor could achieve higher removal efficiency.

Index Terms:--

Moving Bed Biofilm Reactor, Pre-Treatment, Raw water, COD, Ammonia, Hydraulic Retention Time

A Review on Control of Robotic Manipulator for Performing Grading and Sorting of Rotational Symmetric Products

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Abstract:--

This paper presents a literature review on the common control systems that have been used for robotic manipulators with a very higher concern on PID and active force control (AFC).The control of manipulator is divided into two main systems, namely are linear and non-linear control systems. A nonlinear system is used to overcome un-modeled dynamics, variable payload, fiction and disturbance torque, variation, and noise. PID controller has enhanced the performance of the manipulator in certain cases such as reducing system vibration and maintaining the tracking errors of the manipulator. On the other hand, AFC is a robust and much viable controller in comparison with others ordinary strategies in controlling dynamical systems such as robotic manipulator.

Key-words:--

Robotic Manipulator, Active Force Control, Robotic Gripper, Sorting and Grading

Design, Fabrication and Modelling of Four-Wheeled Mobile Robot Platform with Two Differential and Two Caster Wheels

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Abstract:--

This paper presents a design and modeling of wheeled mobile robot (MWR) when navigating autonomously in environment such as road and factory. It needs a good and robust design and control for wheeled mobile robot to move from one to another points with smooth moving and small tracking errors. This paper is focused on mechanical design and modeling of wheeled mobile robot. Autodesk inventor software is used to draw the design of the WMR because this software is simple to make any design and a wheeled mobile robot structure is designed with a center of gravity to be located below the axle wheels level. The wheeled mobile robot is driven using two differential drive and two castor wheels to balance robot while it is moving in the environment. Two kinds of coordinate systems are used to describe the movement of the robot in the environment; namely are Local and global coordinate system; where local is related to the heading angle and the deferential wheel shaft, however the global describes the motion in x, y and z directions. The kinematic model is derived for the four wheeled mobile robot using angular velocities equations for the left and right wheels with estimation the heading angle of the robot.

Keywords:--

Four-wheeled mobile robot, autonomous navigation, design and modeling WMR.

The Unified Field 4-Dimensional Relativistic Dirac Equation

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Abstract:--

Albert Einstein, Lorentz and Minkowski together published in 1905 the Theory of Special Relativity and Einstein published in 1915 his Unified Field Theory of General Relativity based on a curved 4-dimensional Space-Time Continuum to integrate the gravitational field and the electromagnetic field in one Unified Field Theory. Since then the method of Einstein's Unifying Field Theory has been developed by many others in more than 4 dimensions resulting finally in the well-known 10-dimensional and 11-dimensional "string theory". The original Kaluza-Klein theory was one of the first attempts to create a unified field theory. After many years of research, the 11-dimensional Super String Theory did not lead to the fundamental answers on the fundamental questions in Physics. Why do elementary particles have the exact numbers for mass, charge and spin. To find answers a new path in Physics has been chosen. A path that has been based on a fundamental property in our universe. The fundamental property of Equilibrium. The whole Universe is in a perfect Equilibrium. This fundamental property of Equilibrium has been extended to a 4-dimensional Hyperspace Continuum in which a perfect equilibrium persists in any of the 4 coordinate directions. The requirement of a 4-dimensional Equilibrium results in the outcome that the Dirac Equation is only one equation in a set of 4 equations. And that the Dirac Equation originates from an electromagnetic equation in the time-energy domain. This new 4-Dimensional Hyperspace Equilibrium Theory opens a new door to an unexplored field of mathematical and physical challenges. This theory is a new approach in physics based on a 4-Dimensional Hyperspace Equilibrium resulting in the 4-dimensional Dirac Equation. Solving these 4 simultaneous equations requires an immense computer performance and offers the possibilities to find the answers to the fundamental questions in physics within a quantum mechanical 4-Dimensional Frame-Work.

Framework for Stress Level Assessment using Biological Sensors

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Abstract:--

Stress has become the new epidemic of the 21st century. While avoiding stress entirely is not possible because of modern-day life, strategies to cope with stress have been substantially investigated. However, fewer studies have used modern technological means to assess stress levels and concomitantly develop integrated ways to manage stress.

The aim of this study is to develop an Arduino-based framework for assessing and regulating human stress response.This study seeks to build on previous literature attesting to the efficiency of Photoplethysmograph (PPG) and Galvanic Skin Response (GSR) to detect stress in humans. The scope of this study will thus be to construct a framework for stress level assessment in students and introduce a stress management component represented by achosen music by the participant.

The study will use an experimental design in which an Arduino UNO R3 board will be used to develop a stress monitoring and stress management device. The device will use PPG and GSR and an auxiliary audio output module aimed at decreasing stress levels in the sample. A convenience sample of 50 participants will be used to test the efficiency of PPG and GSR as stress monitoring measurements and the effectiveness of music in reducing stress. Data recorded will be analysed via processing.

Designing and Developing of Gamified Learning Activity

Tristan Jay P. Calaguas, AMA Computer University
Dr. Menchita F. Dumlao, AMA Computer University

Abstract:--
This modern day, information technology is revealing its benefit in private and public sectors as well as to individual. Majority of these technologies were using in information processing of humans' brain and business record processing activities and making it more efficient and effectively. When it comes to these information technologies, computer game is one of the instance, which drives human brain and thus creates human expression.

This developmental research only discussed how the learning activities integrated into a computer game. GDevelop game engine was used for prototyping, Action game type was applied in two-dimensional graphics, and in terms of course assessment. Dialogue based was used to deliver the instructional system and assessment question to the player. In terms of game assets creation modular design was used. As the result, the learning activity of first part of General Physics where the game is applied is created and became functional.

The Effect of Business Process on Accounting Information Quality through Accounting Information System Quality

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Abstract:--

Business process quality is one of famous and complex concepts. Bad quality of this process will make the application of accounting information system failed and quality of accounting information go down. Hence, the purpose of this research is to test and analyze the impact of business process quality on accounting information system quality and the impact of accounting information system quality on accounting information quality. The population used is from 114 commercial banks listed on website of Financial Services Authority of Indonesia. By using simple random sampling, banks as samples are taken from population. According to calculation of Slovin formula, there are 53 banks as the number of samples. Unfortunately, only 14 bank that can be sample because 61 respondents related to these banks participate to fulfill questionnaire in this survey. Moreover, collected data are analyzed by utilizing variance-based structural equation model. The result of this research shows two things. Firstly, business process has a significant positive effect on accounting information system quality. Secondly, accounting information system quality has a significant positive effect on quality of accounting information.

Key Words:--

Business process quality, quality of accounting information system, quality of accounting information

SMEs Acceptance of Information Systems Using the Unified Theory of Acceptance and Use of Technology (UTAUT)

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Kenisah. M.L, Maranatha Christian University

Abstract:--

Changes in the business situation from conventional business to digital, forcing business owners - no exception SMEs as a driver of the national economy - to use the development of information technology. The data showed that the online platform only used by 8% of SME in Indonesia. The purpose of this research is to analyze The Unified Theory of Acceptance and Use of Technology (UTAUT) as a model to investigate SMEs perception of IS acceptance and use. UTAUT proved to be widely adopted by researchers in conducting user acceptance research on information technology. Based on the research model, the questionnaire was developed based on previous research in the areas of UTAUT. The research model was tested using SEM-PLS. The data was collected from various spectrums of SME in Indonesia. 216 completed questionnaires were tested in this study. The results showed that the behavioral intention of IS usage by the Indonesian SMEs are influenced by performance expectancy and social influence. Age as a moderating variable, moderate the relationship between it. Meanwhile, effort expectancy has not influenced behavioral intention. User behavior is influenced by facilitating condition and behavioral intention.

Keywords:--

UTAUT, Information Systems, SME

Application of Recurrent Neural Network and Principal Component Analysis to Olympics Results

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Corazon Rebong, College of Engineering, San Juan De Letran- Calamba, Laguna, Philippines

Abstract:--

This paper presents an application of Recurrent Neural Network and an application of Principal Component Analysis to 120 years of Olympics records composed of more than 271, 000 data. The researchers explored the correlation of Height, Weight and Age into winning an Olympic Medal from Bronze to Gold. Having the correlation, after the prediction of Countries that would win a medal it was proven that due to historical record and the application of Recurrent Neural Network it shows that in selecting player, it is highly recommended to select players according to the most correlated values of the parameters mentioned above.

Keywords:--

Data Mining, Recurrent Neural Network, Principal Component Analysis. Sports Prediction.

RFID Based Students' Attendance System

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Abstract:--

RFID is a technology that automates identification and collection of data., which ensures more accurate and timely data entry. Many sectors such as military, sports, airlines, etc. have utilized the benefits of the RFID innovation. Applications such as tracking, automated inventory management, animal monitoring, etc. are the industry specific applications. This project focuses on the use of RFID technology in the students' attendance system in an educational institution. The current attendance systems, which is pen & paper based or the one which incorporates manual entry in the online software or portal, is prone to human errors and is time consuming. In order to increase the reliability and security over the traditional attendance marking system, this system has been proposed. The system consists of the RFID tags given to the students, which consists of their name and id, RFID reader circuit. An ATMEGA 328 microcontroller is the heart of the reader circuit. The data is read from the card, processed and transferred wirelessly to the pc via reader circuit A GUI is developed in Visual Basics to provide interface between human and system and a database is developed in Microsoft Access to store the information of the tags read by the reader. Also, the data can be retrieved from the database. This system reduces the errors and the time taken in attendance marking, which are visible in the traditional systems. Also, the stored data can be exported to an excel sheet for further processes.

Modeling and Simulation of Embedded Microheater in Cmos-Mems Resonator for Gas Sensing Applications

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G Witjaksono., Universiti Teknologi PETRONAS
A.Y. Ahmed., Universiti Teknologi PETRONAS

Abstract:--

In this paper, we present the modeling and simulation of an embedded microheater for gas sensing applications using CoventorWare. The microheater is designed to achieve sufficient temperature uniformity to actuate the resonator. The resonator consists of a 400 × 400 μm2 plate with four beams of length 400 μm fixed at the ends. Modelling and simulation of the resonator are performed by varying the input voltage of the microheater as well as the width of the supporting beams of the resonator. Variations of dc voltage ranges from 0.5 V to 2.0 V, while the beams' width is varied from 10 μm to 30 μm. As expected, the operating temperatures at all voltages are higher as the beams' width decreases. The theoretical operating temperature of the resonator was found to increase from 325.48 to 769.06 K at different voltage depending on the width variation. On the other hand, simulation results were found to increase from 327.74 to 735.06 K. The theoretical values correspond very well to the simulation values with insignificant average differences per width variation ranging from 0.06% to 6.39%.

Reclaimed Water Initiatives at Tnb's Gas-Fired Power Stations in Peninsular Malaysia: Issues and Challenges

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Abstract:--

In 2017, the total installed generation capacity of TNB's gas-fired power stations in Peninsular Malaysia was at 3805 MW. It has been estimated that the total amount of treated fresh water used by TNB's gas-fired power stations for the 2017 calendar year was at 1,232,404.80 m^3 or approximately 296.96 m^3 per MW of installed generation capacity [TNBR report, 2014]. This translates to about 20.16% of the total amount of treated fresh water produced in Peninsular Malaysia during the corresponding period (estimated at 6,112,494 m^3) [ASM, 2015]. Treated town water, once used, will be channelled to the station's Industrial Waste Water Treatment Plant (IWWTP) for treatment to meet the Standard B water quality requirement under the Department of Environment (DoE) before it can be released to the surrounding environment. Recycling (reclaiming) used water is therefore important in order to increase the amount of water available for other uses, to sustain the ecosystems and reduce the surrounding water stress.The aim of this paper is to discuss the various issues and challenges on the water reclaimed initiatives currently being undertaken for TNB's gas-fired power stations in Peninsular Malaysia. This will include the economic feasibility of implementing the reclaimed water initiatives based on the various state driven water tariff structures, the suitability of various water treatment technologies that are available as well as the integration of water treatment system based on the used water from various sources (and water qualities) throughout the station.

Index Terms:--

Reclaimed Water, Gas-fired Power Station

Technical and Vocational Education and Training (TVET) for Value Re-orientation and Nation Building

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Abstract:--

The study assesses the opinions of youth on the perception of Technical and Vocational Education and Training (TVET) in Kano State. The study employed survey design in a population of 50 educators drawn from four randomly selected Tertiary Institutions in Kano State. Questionnaire Instrument named "Value Re - orientation Strategy in Technical and Vocational Education and Training" (VRSTVET), was used in data collection procedures having been subjected to validity and reliability processes. Data was analysed using descriptive statistics, mean and standard deviation and the results revealed that TVET educators are well informed about the importance of TVET to national development. It is concluded that TVET is fundamental pre-requisite for national development. However, it is recommended that TVET should be given adequate attention and funding in order to realize the national objectives.

Keywords:

Value, Value Education, re-orientation, TVET, national development.

Developing Physics Learning Kits Based on Local Wisdom (Angklung) Assisted by Android to Enhance Creative Thinking Ability and Verbal Representation Students

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Mundilarto Mundilarto., Postgraduate Programme of Yogyakarta State University
Jumadi Jumadi., Postgraduate Programme of Yogyakarta State University

Abstract:--

This study aims to: (1) produce physics learning kits based on local wisdom (angklung) assisted by android was suitable to enhance creative thinking ability and verbal representation students; and (2) describe the effectiveness of physics learning kits based on local wisdom (angklung) assisted by android in enhancing the ability of creative thinking and verbal representation students. This research method was based on 4-D model, that was Define, Design, Develop, and Disseminate. The research design is one group pretest-posttest design. The subjects of this study were 30 students of class XI IPA 6 SMA Negeri 6 Yogyakarta Year 2017/2018 for limited field testing, and 68 students of class XI IPA SMA Negeri 1 Banjar Year 2017/2018 for operational field testing. The research instrument consisted of test and non-test instruments. Non-test instruments included product and material ratings. Test instruments included pretest and posttest. Technic analysis of data was descriptive statistics, N-Gain analysis, multivariate statistical test Hotelling's Trace and effect size analysis. The results of this research show that: (1) physics learning kits based on local wisdom (angklung) assisted by android was suitable to be used in high school physics learning with very good category based on expert judgments, and teachers; and (2) the use of Physics Learning Kits Based on Local Wisdom (Angklung) Assisted by Android can enhance creative thinking and verbal representation based on effect size analysis with f values of 0.272 and 0.280 respectively by interpretation of large effect size.

Key words:-

Learning Kits, Local Wisdom (Angklung), Android, Creative Thinking Ability, Verbal Representation Ability.

Surfacewater and groundwater resource assessment, monitoring and management using remote sensing Big Data – Case studies from India.

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Abstract:--

Formulation of water management and performance indices (e.g. drought index, flood index, unmet demand index) requires good observation data. Holistic management of water resources requires seamless access to observation data linked with the data on water supply, demand, storage and extraction. In developing and under-developed countries, such as India, holistic approaches are limited due to low quantity/quality observation data and lack of cooperation between surfacewater and groundwater management agencies (including trans-boundary, inter-government and intra-government agencies). In such scenarios, big-data from remote sensing platforms (e.g. Gravity Recovery and Climate Experiment–GRACE) can be used to understand the state of water use. In this presentation, large scale results from using GRACE data in various study regions of India, including states of Gujarat, Tamil Nadu, Madhya Pradesh, West Bengal, Bihar and Uttar Pradesh will be discussed. Study results that have successfully identified reasons for large scale groundwater depletion, underground storage for floods, impact of water distribution systems, impact of crop-diversification and on-going climate and human induced stresses will be discussed. These studies also discuss and recommend a framework for upscaling the use of remote sensing data along with observation data, to formulate management plans. These include, developing conceptual and hydrological models for which the base data is a combination of observation and remote sensing data, establishing new indices and developing management scenarios. In addition, the discussion will include analysing the technical challenges of using remote sensing data, ways to rectify them and methods to augment the potential of using remote sensing data.

Image Segmentation - Based Classification Using Fundus Image to Early Diagnosis of Diabetic Retinopathy

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D. Sarwinda., Universitas Indonesia

Abstract:--

Diabetic Retinopathy is one of disease caused by Diabetic complications, where it can cause blindness. One of approach to detect Diabetic Retinopathy is the lesion characteristics on retina. This paper investigate image segmentation method for detection of lesion characteristics. We proposed Watershed and Efficient Graph-Based as image segmentation method. We used fundus image from DIARETDB0 database. In this study, K-Nearest Neighbor (KNN) and Support Vector Machine (SVM) are used as classifier to evaluate our proposed method. The experimental result from two kind of testing data proportion (i.e 20% and 30%) show that the Watershed segmentation method obtained the highest accuracy score, precision score, and recall score about 84.62%, 72%, and 85% perspectively from 20% data testing. While, the efficient Graph-Based segmentation method obtained the highest accuracy score, precision score, and recall score about 76.92%, 59%, and 77% perspectively from 20% data testing with KNN and SVM classifier. These results suggest that our proposed method in this paper can be useful in a diagnosis aid system for Diabetic Retinopathy.

Application development with Internet of Things and Cloud computing

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Abstract:--

Cloud computing involves the concepts of delivering data, applications, multimedia and more over the Internet to data centers. The Internet of Things (IoT) refers us to the physical devices that are connected to the Internet, gathering together and sharing data. The combination of IoT and Cloud computing create a new model for development of distributed systems with the large scale storage space, large volume of data and complex computing through communication protocols. These systems contain a set of smart IoT devices which are connected with each other and controlled through software services of cloud infrastructure. Nowadays, the cloud services around the world also provides many kind of platform for intelligent IoT services. This paper proposes a case study for application development with Internet of things and Cloud computing. This case study will help software engineering student to learn and develop a kind of application with IoT devices such as Raspberry Pi and Arduino.

Application of homotopy perturbation method for numeric–analytic solution of system of hyperchaotic ODEs

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Abstract:--

In this study, a numeric hybrid technique combined with homotopy-perturbation method (HPM) is introduced to simulate a class of four dimensional hyperchaotic nonlinear initial value problems (IVPs). To check the stability and efficiency of the method, first we solve the selected problem by the fourth-order Runge-Kutta method (RK4) and then by both standard and hybrid homotopy-perturbation method. Finally, we compare the obtained results by the three methods. Based on the cases selected and investigated, the hybrid HPM is reliable and efficient than the standard HPM for bigger time step. The studies done by this works suggest that the hybrid HPM is a powerful alternative approach for solving nonlinear hyperchaotic IVPs.

Index Terms:--

Standard Homotopy Perturbation Method, Multistage Homotopy Perturbation Method, Fourth-order Runge-Kutta, Hyperchaotic Lorenz system.

A Preliminary Study on the Production of an Organic Herbal Ointment and its Potential Effectiveness in Relieving Muscle and Joint Pain

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Abstract:--

Several studies were focused on individual properties of chili peppers, turmeric, cinnamon, ginger and lavender as food additives, flavor enhancers, home remedies, and alternative medicine. While recent studies have shown their anti-inflammatory and analgesic properties, there is a limited study which shows the combination of these active ingredients on the production of an organic herbal ointment. This preliminary study focuses on utilizing these active ingredients to alleviate muscle and joint pain potentially. Results showed that positive effects are evident in eliminating inflammation, reducing stress and relieving muscle and joint pain in terms of physical appearance, texture, aroma, and cooling effect given off by the organic herbal ointment upon application to the affected area.

The Development of Autoplay 7.0 for the Electronic Skills of Bontopannu Youth Groups in Kabupaten Pangkep

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Abstract:--

This research is a development research (R & D) aimed at developing a conceptual model, physical models of electronic skills teaching materials and the effectiveness of teaching materials using the program Autoplay 7.0 . The method in this study is adaptation of the ADDIE model. The results showed that learning using media Autoplay 7.0 on the techniques of maintenance and repair of telecommunications equipment was declared valid, practical and effective use of instructional media in Bontopannu Village, Pangkep Regency. Validation of material experts with a total average score of 3.5 is in the valid category and from the validation of media experts with a total average score of 3.23 is in the valid category. Based on the results of the analysis of the response of trainers and trainees in the category very well, it is stated to be practical and effective for use in learning.

Key words:--

Media, Autoplay 7.0. Development

Home Controller System Powered by ARDUINO and ANDROID

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Abstract:--

The modern technology has enabled us to make our life easier with the development of many high-tech devices. The most common are the ones which we use at home. Example, television, aircondition, and lights are commonly used by everyone. Home Appliances Controller is an embedded system that can be easily setup in your home so you can take control of your appliances. Home controller or Home Automation nearly referred to "The Internet of Things" (IoTs) which all has allocated IP address, can be accessible and monitored. Devices are connected to each other with new way of communication between things themselves, between the people, things where the smart phones, internet, and television are can be defined as Internet of Things. While the smart phones are increasing changing the conditions in environment using smart phones, appliances are automatically can be controlled easily through device. The system can be run by using the Arduino Uno and Ethernet Shield.

The main objective is to develop a system that will used a controller to switch on or off the appliances which are the television, lights, electric fan and aircondition by using smart phone and a Wi- Fi at home and with voice recognition. The researchers also aim to develop a user friendly android application and the system developed using the Waterfall method as a System Development Life Cycle Model (SDLC). The acceptability of the system was conduct through a system evaluation. The IT Experts and End Users evaluated the system as Highly Acceptable in terms of functionality, reliability, usability, efficiency, maintability and portability.

Design, Analysis and Comparison of Suitable Converters for Wind Energy Systems

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Abstract:--

This paper deals with the design, analysis and comparison of power electronic converter that suits the best for PMSG based wind system. Renewable energy has become the center of rising interest now-a-days. They are the sustainable energy sources that come from the natural environment. It is a clean alternative to fossil fuels. Therefore, power electronics application to field such as photovoltaic generation, wind power generation etc. has become vital. Converters and inverters are used so that the generation using these renewable resources is carried out easily and efficiently. This project deals with the comparison of design, modeling, simulation and implementation of DC to DC converters used for wind system. The performance of the wind system in terms of Total harmonic distortions and efficiency of the output produced by the converter are compared by using various converter topologies namely, buck-boost converter, Cuk converter and Sepic converter. By choosing the best efficient and ripple-free converter, the need of filter circuits can be reduced or eliminated significantly. Based on the total harmonic distortion and efficiency, the best suitable converter for the wind system is concluded. The PMSG generated wind system drives a load of 300W, 24V.

Index Terms:--

Power electronic converters, PMSG, Wind system, Total harmonic distortion, efficiency.

iFOCUS – a skills and development games for ADHD children

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Abstract:--

Nowadays the modern technology has its big influence in our daily life. This changes concern whether it has a good or bad influence in our society.

iFOCUS –a skills and development game for ADHD children aims to develop a game that will benefit children with Attention Deficit Hyperactivity Disorder(ADHD) to have more attention span and iFOCUS. By the use of the game children will not even realize that it can strengthen their concentration skills. According to psychologist colorful images, moving objects, educational video and attractive game background music can help to be iFOCUS and concentrated, it can be helpful to stimulate their sense. The android game can be fast paced games, have movements and games that are not violent are the most suitable for children with ADHD. iFOCUS –a skills and development game provides children with ADHD to enhance their skill to be more IFOCUS and concentrated. IFOCUS also has different games to play with and different educational videos to watch. The size of IFOCUS Game application is 391mb and it can be played without internet connection.

The game covers are to stimulate attention and iFOCUS by playing game frequently. In the first game "Sky drones" the player should iFOCUS in dodging the falling object and remember to get the power source. This game helps to increase user iFOCUS and attention. Second Game "Jungle Monkey" the player should IFOCUS in lifting to the leaf, get bananas and life source. This game helps to increase user iFOCUS and patience. The last game is called "Math Quiz" the player can choose in the category that contains addition, subtraction, multiplication, division and mix of all operations it contains mathematical question and choices of answers. This game helps to increase user iFOCUS, learning and how to solve problems.

Interference Suppression in the Wireless Communication Systems Using Adaptive Algorithms

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Abstract:--

In many applications, the statistical characteristics of the desired and interfering signals are usually unknown. To cope with this situation and effectively suppress the interfering signals, adaptive arrays are proved to be one of the best solutions. However, the fully adaptive arrays in which all the elements are controllable are undesirable in practice due to low convergence speed and high complexity in the feeding network. In this paper, the performance evaluation of the adaptive arrays under various optimization algorithms is investigated first. Then, an efficient and faster adaptive method based on the smaller number of the controllable elements is presented. Simulation results show its effectiveness in suppressing the interfering signals as long as the number of the interfering signals is less than or equal to the number of the selected controllable elements. Moreover, the performance of the proposed array, in terms of obtaining lower mean squares error (MSE) and faster convergence speed, is shown to be better than the other popular adaptive arrays.

Keywords:--

Adaptive Arrays, Minimization Algorithms, Interference Suppression.

Experimental Investigation on Compression Ignition Engine Runs on Different Blends of Rice Bran

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Abstract:--

While finding alternative solution of fossil fuels, research in the area of renewable sources like edible and non edible vegetable oil, waste cooking oil takes a charge. In this study rice bran Oil & kerosene mixture will be used as fuel in 10 H.P. Diesel Engine to examine the performance and feasibility without changing any design. To make rice bran oil more volatile kerosene is mixed and makes the mixture easy to burn. Experiment was conducted with three different proportions of B20, B40 & B60 of rice bran oil to kerosene. During the trail run it was clearly seen of decreasing in mechanical efficiency with increased load for the entire trail runs. B20 found most promising blends among all other blends and having better performance than others.

In-Silico Characterization of Oxidoreductase from Anoxybacillus sp. SK3-4 using Computational Methods

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Abstract:--

Determining the structure and function of a novel protein is a cornerstone of many aspects of modern biology. For this study, the structure of unique protein isolated from Anoxybacillus sp. SK3-4 was predicted and identified based on its primary sequence analysis in which various tools in Bioinformatics were used. The structure of the novel protein was predicted to be identified as Oxidoreductase which belongs to alcohol dehydrogenase (ADH) family by analyzing its primary sequence using Uniprot databases in which a maximum identity similarity of 100% was obtained with organism Anoxybacillus sp. SK3-4. Characteristic features of the protein were predicted by ProtParam software in Expasy. Secondary structure, 3D-model, active/ binding-sites, conserved regions or domains and transmembrane of the novel protein were all predicted using different software programs. Cn3D and Jalview software were used to visualize the nature of the aligned sequences and 3D-model. Therefore, in modern science and biotechnology, structure and functions of many proteins can be predicted by analyzing their primary sequences using various tools in bioinformatics.

Keywords:--

Anoxybacillus sp. SK3-4; Bioinformatics tools; Primary sequence; Oxidoreductase.

Body Motion Control via Brain Signals Response

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Abstract:--

Brain Computer Interface (BCI) can be used for many purposes in many areas, especially in the field of robotic and rehabilitation. But nowadays only single BCI applications have been applied and this has given a lot of limitations to this technology. So one of the step to optimize the BCI's capabilities, it should be used together with other up-to-date technologies. One of the most widely used and update technologies in the rehabilitation and robotic is the functional electrical stimulation (FES). This combination of BCI and FES can provide many benefits such as in rehabilitation applied in stroke rehabilitation and mental depression treatment while for robotic will give benefit in robot control. This study present a simulation and control technique for body motion via this combination. This combination will bring better handling in control some devices. Emotive insight will be used as a brainwave data capture. The eye blinking activity of the subject was detected using the Emotiv device and then be translated to control the device in simulation environment. The system reliably enabled subjects to control the body motion through their brain.

Pressure Vessel Design simulation: Implementation of Multi-Swarm Particle Swarm Optimization

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Abstract:--

The new era knowledge of optimization algorithm is massively boosted recently. Among several optimization models, multi-swarm approach has been proposed most recently for balancing the exploration and exploitation capability through the Particle Swarm Optimization (PSO) algorithm. The proposed multi-swarm model which is called Meeting Room Approach (MRA), is tested and evaluated based on solving normal and large-scale problems. In the current research, the feasibility of the proposed Multi-Swarm Particle Swarm Optimization (MPSO) is adopted to simulate mechanical engineering problem namely pressure vessel design (PVD). The results indicated the potential of the proposed MPSO model on simulating the PVD problem with optimum solution over the standalone PSO. Further, the current study results authenticated against other famous meta-heuristics. Overall, MPSO reported an excellent optimization solution with fast convergence learning process.

A Conceptual Framework to predict the Academic Performance of Students using Classification Algorithm

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Abstract:--

Technological advancements has improved customer service and enhanced the customer satisfaction to a large extent in Industry and Service sectors. Education institutions across globe are leveraging on the technology to produce high quality graduates and improve the customer satisfaction level. Several researchers are striving hard to improvise the system through their innovative solutions. Education Data Mining (EDM) which is an emerging discipline in the field of Data mining is becoming increasingly popular due to its capability of extracting new insights from large repositories of data generated from learning activities. Analyzing the students learning behavior and predicting their progression at the early stage helps the higher education institutions not only to produce quality graduates but also to curb the student attrition. This paper proposes a conceptual framework for predicting the academic performance of students at the early stage by using classification algorithms. Various factors like Socioeconomic, Psychological, Cognitive, and Lifestyle are considered in analyzing the performance of students and predictions are made based on their Semester GPA. Classification algorithms like Naïve Bayes, Decision Tree and Ensemble learning are used in finding the better prediction model.

Index Terms:--

Education Data Mining, Ensemble learning, Prediction framework, Boosting

Multicriterial Approach for Criteria Ranking of Sustainable Façade Condition Assessment of the Old Shop House Buildings

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Abstract:--

Facades are the most important part of an early shop house as they can considerably affects the physical appearance and condition of the buildings. Mainly, the façade elements of the shop house consist of cornice, upper level and lower level. Each element define unique architectural aesthetics of the building. To ensure the lifespan of the facade is always in good condition, timely performance assessment should be carry out. Therefore, this study aims to evaluate the performance assessment criteria of façade elements in order to develop a systematic tools for classify the façade condition. By using structured expert judgment and Analytical Hierarchy Process (AHP), weightage of each element has been determined and established.

Index Terms:--

Analytical Hierarchy Process (AHP), Shop house, Façade Condition Assessment, Sustainable

The use of remote sensing and GIS in the study of the topography of Lake Sawa

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Abstract:--

During the previous periods, the water bodies and the topography of the surrounding lands were studied through the use of manual ground survey techniques which require high effort and cost in addition to the long time for the purpose of completion . Following the development of the science of remote sensing and GIS techniques and their use in the field of hydrological studies, work has begun on the use of computer technologies to conduct these studies with high accuracy. With DEM techniques, which are used to study topography of the earth, to identify stereoscopic digital models and to analyze morphometric characteristics easily, quickly and at low cost. It was found that the land around Lake Sawa is a crumbling undulating ground with gypsum rocks ranging from 14 meters to 26 meters, a natural lake where no water dams can be built.

The Role of Educational Technology through Communication Theory and Information in the Development of Digital Era Learning

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Abstract:--

Information and Communication Technology is a videoconference, which uses information technology to connect between clients with internet facilities, messages conveyed by both parties are accepted, processed, analyzed and transmitted, by information technology so as to reach each party through internet with satellite or cable networks. The role of communication technology is to regulate the communication mechanism between the two parties by means of appropriate communication design, clear visualization, text messaging, voice, video fulfilling communication standards, setting the feed back so that communication takes place in two directions. Berlo's communication theory is a new approach because it is not linear and its implications in educational technology that causes the inclusion of people and materials as a source that is an integral part of educational technology, and the content of the message along with its structure and cultivation and the form of messages are part of the overall communication process so that this model is also paving the way for various kinds of research related to elements and mutual relationships (Miarso, 2007: 115).

Index Terms:--

Communication Theory, Educational Technology

Etymology of Six Sigma Process

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Abstract:--

Six Sigma is an industry-accepted and proven methodology. This methodology helps an organization achieve a superior performance and improved profitability, and is very effective for service-based businesses as well as those that are product-related. The Six Sigma program applies several specialized skill sets to streamline operations including process analysis, statistical measurement, and group facilitation. The structure of Six Sigma is based on a handful of key principles. A focus on metrics, also known as measurements, is one of those key principles. Executives and business leaders have come to love the results produced by Six Sigma because this approach also enables them to make decisions that are fact-based and data-driven. Six Sigma helps an organization achieve superior results by removing the inconsistency in any process, and it ensures that the work being done meets requirements that are "critical to quality." The discipline of Six Sigma enables management and the workforce to determine performance and quality standards in advance and then empowers people to achieve them. The only role that information technology plays in the Six Sigma approach is as an enabler to better business performance, which ensures that all IT investment is done wisely. Therefore money will be spent on automation only if it results in business process improvement that is measurable.

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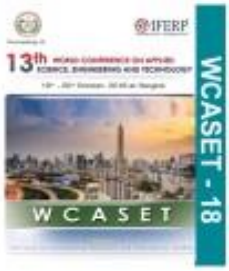

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978-81-938236-8-2