

18th World Conference on Applied Science, Engineering and Technology

**18th WCASET
2019**



Manila, Philippines 

25th - 26th April, 2019 

Organized by
Institute For Engineering Research
and Publication (IFERP)



18th World Conference on Applied Science, Engineering
and Technology
(WCASET – 19)



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Preface

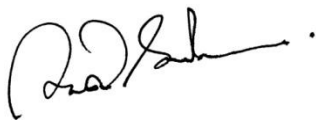
We cordially invite you to attend the **18th World Conference on Applied Science, Engineering and Technology (18th WCASET-19)** which will be held at **St Giles Makati-St Giles Classic Hotel, Manila, Philippines** on **April 25th-26th, 2019**. The main objective of **WCASET** is to provide a platform 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 Management, Education 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 February 2019, the Organizing Committees have received more than 112 manuscript papers, and the papers cover all the aspects in Electronics, Computer Science, Information Technology, Science Engineering, Management, Education and Technology. Finally, after review, about 42 papers were included to the proceedings of **18th WCASET - 2019**.

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of **18th WCASET-19**. 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.



Rudra Bhanu Satpathy
CEO
Institute for Engineering Research and Publication (IFERP)

Acknowledgement

IFERP is hosting the **18th World Conference on Applied Science, Engineering and Technology** this year in month of April. The main objective of 18th WCASET 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.



A. Siddh Kumar Chhajjer
Director
Institute for Engineering Research and Publication (IFERP)

**18th World Conference on Applied Science,
Engineering and Technology
(WCASET-19)**

Keynote Speaker



Dr. Neil P. Balba

International Consultant

Professor and Chair of Computer Engineering Department

Lyceum of the Philippines University-Laguna, Philippines

Dear Colleagues,

It is my honor and privilege to be part of the 18th World Conference on Applied Science, Engineering and Technology! I am so glad that this organization that convenes the people who add to the body of knowledge had given me the opportunity to welcome you to this momentous event.

We know that technology changes every day. A lot of changes will be coming over due to the advancement of technology. Industries are continually improving in their adaptation of cloud technology, virtualization, big data management, Internet of Things (IoT), Robotics, business intelligence and other advancement that influenced industrial performance and efficiency. Improvement will never end since all of you experts are continuously finding and formulating new knowledge that will boundlessly enhance the way we work, think and live.

This research conference contributes a lot in grouping together as one the people from different countries; to work for one goal which is producing quality researches that will change the world to achieve improvement and success. These new development outcomes of your researches could change the life of people and level-up the growth of industries all over the world.

With this, I would like to congratulate the organizer of this event for the great contributions and accomplishment in producing quality outcomes through researches and also, congratulations to all participants who will never stop to produce researches that will positively transform the world and the life of the future generations.

Thank you very much.

A handwritten signature in black ink, appearing to be 'Neil P. Balba', written in a cursive style.

Dr. Neil P. Balba

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Deputy Dean, Undergraduate Student Affairs, Faculty of Computer and Information Technology, Al-Madinah International University, Malaysia

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WCASET - 19

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ABSTRACTS

18th WCASET - 19

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Numerical Analysis of the Influence of Vertical Fin Addition to the Performance of Modified Bach type Vertical Axis Wind Turbine

Dominicus Danardono Dwi Prija Tjahjana, Universitas Sebelas Maret

Satrio Tri Jayanto, Universitas Sebelas Maret

Sukmaji Indro Cahyono, Universitas Sebelas Maret

Bambang Pramujati, Institut Teknologi Sepuluh Nopember

Abstract:--

The Savonius wind turbine is a vertical axis wind turbine that works well in low wind speed. Unfortunately, the Savonius wind turbine has relatively low coefficient of power (C_p). Modified designs have been done and studied to increase the performance of the turbine. The purpose of this research is to study the influence of vertical fins addition to performance of the modified Bach type wind turbine. The research was done by 2 dimensional of computational fluid dynamics (CFD) modeling and Ansys Fluent commercial software was used to solve model. Original modified Bach type wind turbine was compared to the modified ones with the addition of one and two fins. The models were simulated on various tip speed ratio, to find out the C_p profile of the wind turbine. The result shows that the best C_p was obtained by adding a single fin to the turbine and compared to the original turbine it increases by 8.81%.

Keywords:--

Wind turbine, vertical axis, CFD, vertical fin.

The Effect of Blade Thickness and Number of Blade to Crossflow Wind Turbine Performance Using 2D CFD Simulation

Fauzi Wikantyoso, Universitas Sebelas Maret

Dini Oktavitasari, Universitas Sebelas Maret

Dominicus Danardono Dwi Prija Tjahjana, Universitas Sebelas Maret

Syamsul Hadi, Universitas Sebelas Maret

Bambang Pramujati, Institut Teknologi Sepuluh Nopember

Abstract:--

Crossflow wind turbine is vertical axis wind turbine that has high coefficient of power (C_p). The simulation aimed to understand the effect of blade thickness and blade number of vertical axis wind turbine with cross flow runner to enhance the performance of wind turbine. The turbine had 2.6 mm; 10 mm; 15 mm; and 20 mm blade thickness, and 18, 20, and 22 blades number. Simulation was done in two-dimensional analysis using ANSYS-Fluent. Tip speed ratio was varied in the range of 0.1 to 0.5 with constant inlet velocity of 2 m/s. The effect of blade thickness and blade numbers to torque and coefficient of power were analyzed and compared. It has been found that the highest coefficient of power was 0.5 at tip-speed ratio of 0.2, blade maximum thickness of 20 mm and blade number of 22.

Keywords:--

Wind energy, VAWT, crossflow wind turbine, blade thickness, number of blades, CFD simulation

Evaluation of Pore Structure of Concrete Using Different Methods: A Review

Yogitha.B, Vignan's University

Dr.M.G.Muni Reddy, Andhra University

Dr. N. Ruben, Vignan's University

Abstract:--

Micro analysis of cement is to be studied as it affects the strength and durability of macro structure in long run. Due to physio chemical reactions of cement and aggregates in a mortar paste there arises pores or voids which becomes a structural problem in long run. Aeration and Hydration plays a key role in altering the performance of concrete as aeration leads to entrained and entrapped voids, hydration leads to C-S-H structure which forms gel pores and capillary pores. Though concrete is good in compression, as it is brittle, internal properties have to be checked and new techniques or admixtures are to be developed. This paper discusses Mercury Intrusion Porosity, Gas adsorption method, and backscattered electron microscopy technique to evaluate pore structure of cement in concrete. The performance of test depends on inter crystalline structure, permeability, void diameter, smoothness of surface and measures taken while preparing the specimen. It is just an attempt to derive the porosity of concrete by making few assumptions.

Keywords:--

Porosity, voids, mercury intrusion method, Back scattered electroscop, gas adsorption method

Feasibility Study on Replicating Nature's Design to Enhance Structural Performance in Civil Engineering Structures

Yap Kian Lim, student, University of Nottingham Malaysia Campus.

Abstract:--

This paper intends to breach the gap between nature and engineering structures by replicating nature's design in structural systems subject to lateral loading. This study first explores how trees adapt to adverse environment by enhancing their physical and mechanical properties. From mechanical component to large-scale analysis (e.g. improving bracing systems in a steel multi storey structures), this paper demonstrates the similarity in the study of load path or force flow in between mechanical components and civil engineering structures that breaches the transitional gap between micro and macro structures. In light to this review study, it suggests an alternative path to enhancing structural performance through the introduction of a better beam to column notch design inspired by nature. Preliminary studies on replicating nature's design in trusses indicates promising outcome that may provide better stability under lateral loading as it exhibits higher flexibility that plausibly leads to a greater energy dissipation. Hence, it is inevitable that the application of biomimicry in civil engineering may be a better solution in enhancing structural performance or to create a more efficient structure. Further in-depth study is required to fully understand the benefits of these geometries in structures.

Keywords:--

Earned Duration Management, Earned Schedule, Earned Value Management, Project Monitoring and Controlling Methods, Schedule Performance.

DengueSS: Dengue Surveillance and Survivability using Descriptive Analytics and Data Mining

Rosalinda B. Guiyab, St. Paul University Philippines, Tuguegarao City Cagayan

Abstract:--

Dengue is a viral disease that has been feared by people globally. Because of its rapid prevalence and increasing threat, exploring the use of data mining techniques together with decision support system to develop prediction models of dengue survivability integrated into a decision support system is the main purpose of this study. This study is focused on three important points: development of a rule-based and decision tree models for dengue survivability prediction, classification of patient according to their health risk, and development of a dengue surveillance and survivability platform using descriptive analytics and data mining. The developed rule-based and decision tree models are compared according to accuracy and undergone the 10-fold cross validation procedure and integrated in the DengueSS system to provide a platform to predict the survivability of a patient given the input medical data. It also includes a data warehouse for dengue surveillance to monitor dengue cases with real time update of data with graphs, figures, and tables using a client-server configuration via the Internet. The result of the prediction for the dengue survivability can be used as an intervention by medical practitioners and dengue surveillance for real time update of dengue cases.

Design and Development of Fissure Detection and Imaging Techniques for Brown Rice Kernels to Improve Quality of Rice Miller

P. V. Gharat, Research Scholar Department of Production Engineering, Veermata Jijabai Technological Institute, Mumbai, India.

D. K. Shinde, Faculty Department of Production Engineering, Veermata Jijabai Technological Institute, Mumbai, India.

D. N. Raut, Faculty Department of Production Engineering, Veermata Jijabai Technological Institute, Mumbai, India.

Abstract:--

One of the major problem faced by the rice millers and farmers is breakage of rice during milling processes like whitening, polishing etc. For reducing the breakage of different rice varieties while milling processes, it is important to know the initial quality of rice grains. Rice quality is in terms of internal fissures present in rice kernels. In this study, an innovative technique is found out for detection and imaging of fissures present in brown rice kernel with the use of digital single lens reflex DSLR camera. The DSLR Nikon D5200 camera with secondary close-up numex close-up lenses was used for capturing images of fissures of rice kernels. The captured images were edited in open source image processing application Lightroom CC application for better clarity of fissure. Four different arrangements were used for detection and capturing of fissures, out of which two arrangements were giving best results. With the help of those two arrangements model of fissure detection box is developed. The fissure detection box was designed in a such a way that it can be easily used by millers for detection of fissures in brown rice after de-husking which can help to adjust milling pressure so that optimum milling with a reduction in breakage of rice can be possible.

Keywords:

Kernels, Milling, Fissures detection, Image Processing, Fissures detection box.

Geographic Information System (GIS)-Based Mapping and Prediction of Nematopalaemon Tenuipes (Aramang) Fisheries

Billy S. Javier, Associate Professor, College of Information and Computing Sciences, Cagayan State University, Aparri, Philippines

Abstract:--

Endemic in Aparri, Cagayan Philippines, Nematopalaemon Tenuipes, locally known as Aramang is an export commodity and basic source of household income to fishers family in the locality. Fishers and locals' knowledge along abundance and catch areas is very limited hence affecting production and economic stability in the area. This study focused on mapping of catch areas thru GIS, and mining and prediction of aramang production data. Descriptive-developmental following the SCRUM methodology has been implemented. The assessment of the extent of compliance to ISO 25010:2011 software quality characteristics was obtained thru a validated 5-point Likert survey questionnaire among 10 IT experts, 20 Fisheries and Marine Sciences Teachers and municipal agriculture office staff, and 10 members of the Aparri Aramang Fishers' Association. Findings showed an overwhelming extent of compliance of the web-based system to specified software quality criteria. Catch maps obtained from GIS-based results will be beneficial to providing meaningful information to fishers and gatherers saving their fuel resources, time, and cost of Aramang fishing. Utilization by the municipal agriculture office will serve as decision-support tool for reconsidering the open and closed season of aramang catch and possible conservation and management of Aramang resource in the Aparri, Cagayan Philippines towards sustainability.

Geographic Information System (GIS) – Based Mapping using Decision Tree for the Sustainability of Fresh Water Clam (Cabibi)

Estela L. Dirain, Student - Doctor in Information Technology (DIT) at St. Paul University Philippines, Faculty, College of Information and Computing Sciences, Cagayan State University, Aparri, Cagayan, Philippines

Abstract:--

Fresh water clam (*Batissa Violacea*) locally known as cabibi is an endemic bivalve commodity in Cagayan River and population have declined due to harvesting. Cabibi is one of the One–Town–One-Product of the municipality of Lal-lo and celebrates Cabibi Festival every month of August. Low production of said resource has been an issue associated to unregulated catch, non-identification abundance site, and lack of science-based along clam. The study aimed to map the catch points considering the habitat and abundance of fresh water clam thru GIS. Descriptive – developmental deploying RAD model has been implemented. A validated 5 – point Likert survey-questionnaire was utilized to assess the extent of compliance to ISO 25010:2011 software quality among experts in IT, Fisheries and Marine Sciences. Findings revealed a very high extent of compliance to specified software quality criteria of the web-based system. GIS-based maps generated will be useful in monitoring the abundance and providing meaningful information for actions to control overharvesting of the commodity. Results of the study would be of great help to the Municipal Agricultural Office in decision making and formulation of policy for the conservation and management towards sustainability of clam resources and having a continuous source of livelihood for fishers.

Dynamic threshold selection through noise variance for spectrum sensing

A. Sai Suneel, Research Scholar, Department of Electronics and Communication Engineering, School of Electrical and Communication, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Avadi, Chennai, India

Dr. S. Shiyamala, Associate Professor, Department of Electronics and Communication Engineering, School of Electrical and Communication, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Avadi, Chennai, India.

Abstract:--

Technology is increasing day by day and the number of users utilizing the spectrum also increases. But the licensed spectrum is limited and used by licensed users only. Hence, there is need to provide the spectrum for all the other unlicensed users in the licensed spectrum without causing interference with the primary users. Here there is a way to provide the above requirements using the new application i.e. cognitive radio. This device senses the spectrum using different techniques. To overcome the disadvantages of the previous techniques, the paper the spectrum sensing is accomplished by using the dynamic assortment of threshold base on the noise level current in the signal and also base on the energy recognition of the signal. The simulation results prove that this process provides better results when compared to state of art methods

Key Words:--

Auto Correlation; Cognitive radio; Energy detection; Spectrum sensing; sensing threshold; dynamic selection

Computational Investigation on Design of Scramjet Combustor – A Review

Kumari Ambe Verma, Research Scholar, Department of Mechanical Engineering, National Institute of Technology, Silchar, Assam, India

K. M. Pandey, Professor, Department of Mechanical Engineering, National Institute of Technology, Silchar, Assam, India

K. K. Sharma, Associate Professor, Department of Mechanical Engineering, National Institute of Technology, Silchar, Assam, India

Abstract:--

Supersonic combustion is carried out primarily in air breathing engines. Atmospheric air is used as an oxidizer and fuel are commonly stored within the system. No moving parts are available in the scramjet engine, which gives higher thrust to weight ratio compared with any other propulsion engines. Different techniques and approaches are used for getting better results in the form of improved mixing, momentum, drag etc. The problems present in the combustor can easily be identified with the help of boundary layer parameters. Small improvement can lead to better performance. One of the technique is by using vortex generator. It creates vortices in the lateral plane. Turbulence can also be generated with the help of wedges, ramp, pylon etc., inside the combustion chamber. So the review article is focused entirely on the effects of boundary layer performance parameters due to implementation of vortex generator in the supersonic combustion ramjet engine (scramjet) at different locations with variable sizes. Basic principle behind use of vortex generator is the vortex formation in the downstream to overcome separation and drag. Geometrical shape is a major concern on vortices formation, so different kind of geometrical shapes have been taken for study such as standard micro ramp, dissymmetric micro ramp, slotted micro ramp, cantilevered micro ramp, swept micro ramp, unswept micro ramp, micro vanes, pylon and ramped vane type of vortex generators. To summarize the entire literature review. It is seen from the literature review that standard micro ramp can help in improving momentum deficits and drag however slotted micro ramp can improve mixing performance. Ramped vane vortex generator gives overall performance of boundary layer in supersonic flow field.

Keywords:--

Scramjet combustor design, Vortex generators, Micro-ramp, Flow separation, Drag.

Effects of Welding Parameters on Thermal Residual Stresses in Laser Welding of SS 316

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Dr. Chinmay Desai, Professor, Mechanical and Automobile Department, CGPIT, UTU, Bardoli

Abstract:--

In this research paper an attempt has been made to investigate the effects of laser beam welding parameters on thermal residual stresses. Study of literature indicates that most of the research work carried out for the measurement of thermal residual stresses generation by the laser welding is still a field of research. Thermal residual stresses are a locked stress which generate due to the heating & cooling cycle of welding. Nowadays laser welding is latest process, which gives the lower distortion, thermal residual stresses, plastic strain & thermal residual strain. Thermal residual stresses decrease the effectiveness of weld joint so it's important to understand the effects of it on weld joint. Double pass pulse laser welding has been used for butt weld joint of 4 mm thickness SS316 plate at variable welding parameters. The welding parameters like power, spot diameter and welding speed (velocity) have been considered in present study. The XRD (X-ray diffraction) method was adopted to measure the residual stresses. It was observed that the effect of spot diameter on the residual stress is higher compare to the welding power. Along with that a validated 2D SysWeld FE model is used to predict the thermal residual stress in the welding specimens, which shows the good conformity between experimental and simulation results.

Main Crops and Goat Production Decision Support System Using Climatic Parameter Predictors

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Dr. Maria Visitacion Gumabay, Saint Paul University Philippines, Philippines

Dr. Jesus Pizarro, Saint Paul University Philippines, Philippines

Abstract:--

This study aims to develop a decision support system to predict the production of rice, corn, and goat of CARAGA region. Multiple linear regression analysis was used in deriving models that were used to calculate the predicted production. The derived models were used in the system development. Interviews and observations were conducted to the rice, corn and goat farmer participants to determine their best practices in rice, corn and goat production. Interviews were also conducted to the Department of Agriculture technical staff to determine their issues and problems encountered in using the existing system. The responses of the participants are presented thematically. Using a survey evaluation questionnaire, IT professionals evaluated the developed system to determine the extent of compliance based on ISO 25010 software quality assurance standards. Agile methodology particularly SCRUM method was employed in managing the task during system development. The results on the evaluation of the system developed on its extent of compliance based on ISO 25010 software quality assurance standards revealed that IT professionals accepted it unconditionally. IT professionals enumerated suggestions to further enhance the features and performance of the system. Among the suggestions were remarks on output, label of buttons, error message and acronym of the system.

Modelling the Interplay of Technostress and Workplace Human Risk Factor in Business Process Outsourcing Industries

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Abstract:--

The advancement of information and communication technology brings an innovative way of doing business and due to the rapid introduction of technology in the workplace may cause the organization to suffer technology stress. The associated problems with optimum human-computer interaction resulting in human risk factor and significant effect of technostress in the workplace are turning into an issue. This study aimed to develop a model that interplay the technostress and workplace human risk factors in business process outsourcing industries. To achieve the objective of this study, a sample was conducted to 572 call center agents. After the data filtering process which involves the amputation of insincere responses, 383 research participants from different business process outsourcing industries in CALABARZON area became the final sample. This study employed a quantitative descriptive survey method. The questionnaire underwent factor loading and reliability analysis. Structural equation modeling technique was used to test the relationship and predictive capabilities of the variables. Findings revealed that ICT users experienced technostress due to information overload and technological advancement in the workplace. Moreover, the effect of technostress in workplace manifest in the emotional and physical aspect of the user. This study found out a significant predictor of technostress in work body posture and workplace design. Overall, the findings provide some insights for the managers of business process outsourcing industries on technostress and workplace human risk factors in ensuring a healthy work environment through ergonomics intervention strategies.

“PHistorical Quest VR” A Virtual Reality Game for Pre-Historical places in the Philippines

Edgardo Cruz, University of Makati

Elizalde Duran, University of Makati

Erwin Guerra, University of Makati

Rhonnell Paculanan, University of Makati

Joshua Raphael Ordonez, University of Makati

Abstract:--

This project is conducted in order to help and promote the different location in Luzon Philippines thru VR Application that uses Rubik’s Cube algorithm called “ PHistorical Quest VR”. The Project Scope are (1) to provide a virtual reality game where player enters the pre-historical places in the Philippines and find the hidden objects inside certain places. It has 5 level of difficulties with sound included using one single player (2) the game has voice tour guide features supports using Tagalog or English language and lastly (3) the game controls is via Bluetooth controller. The Scrum Agile methodology is a method that combines all the works of a team either this is a documents or programs to meet the quality of the software or application. This type of methodology uses several different measures that include interviews, observations and research along with facts or statistics. It defines a flexible, holistic software development strategy where a development team works as a unit to reach a common goal; challenges assumptions of the traditional, sequential approach, and enables teams to self-organize by encouraging physical co-location or close online collaboration of all team members, as well as daily face-to-face communication among all team members and disciplines involved. A prototype is a rudimentary working model of a product or information system, usually built for demonstration purposes or as part of the development process. The prototype was evaluated by seventy – five (75) respondents. And as the result of overall mean 4.72 gives the general interpretation that the study is accepted. This is the result of the mean scores respondents from different criteria such as Efficiency, Reliability, Usability, Functionality and Accuracy. The average mean ratings of possible users both for experts and non-experts in motorcycle are from the range 4.63 to 4.84 that means excellent. As a Conclusion, the findings of the project were a successful simulated, as well as practical implemented based on the indicators. As a Recommendation of the evaluators give based on the analysis of the project are: to upload this in the play store to promote the country and to improve VR game application for future used.

Statistical Study of Product Obsolescence Detection Techniques

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Shubhangi Neware, Shri Ramdeobaba College of Engineering and Management, Nagpur

Abstract:--

Obsolescence indicates the lifespan for which a product under study will be viable to sustain a particular market condition. This viability depends on the product features, the timing of product launch, the cost of the product and other secondary parameters. Researchers from various fields have proposed algorithms and techniques which utilize the product's parameters in order to predict and justify the product's obsolescence in the given market conditions. This study is based on statistically evaluating the product obsolescence detection methods and concluding as to which methods can be used for a particular application. This study also suggests some future research work which can be done on these algorithms in order to enhance the quality of obsolescence detection.

Keywords:

Obsolescence, Lifespan, Market, Product, Application

Performance of the frontline employees Of the sucs in region II

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Abstract:--

Performance of the frontline service employees' perceptions of their own abilities and actions to resolve a service failure to the satisfaction of the customer. Hence, it is the focus of this study to determine the level of performance of the frontline services in terms of their individual performance commitment rating; and clients' satisfaction of the frontline employee of the SUCs in Region II. Mean and standard deviation was used in determining the significant difference between the individual performance commitment rating; and clients' satisfaction with a total of 120 personnel and 1, 512 students respondents were assessed on their performance. Furthermore, since the results of the ANOVA proved that there are significant differences in the perceived clients' satisfaction (for both personnel & services) when respondents are grouped according to SUCs and type of client; hence, the hypotheses of the study are confirmed.

Keywords:--

Perception, clients' satisfaction, frontline services, and individual performance.

Phase changing materials in thermal energy storage systems: A Review

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Abstract:--

With increasing demand for energy, it has now become necessary to explore non-conventional techniques as the conventional technique has become limited. This diminished conventional energy source will impact on the environment. Therefore, intellectual management of energy resources and supporting the development of new technologies has become necessary to replace the conventional energy resources. It has been observed in various cases that using Phase Changing Material (PCM) can be a sensible solution. This paper intends to study the use of PCM in prevailing conventional and non-conventional techniques. This paper also tries to study the possibilities of PCM with these techniques to identify a solution for meliorating the efficiency of the prevailing system. It was concluded that PCM integrated with building materials, air conditioner, solar Photovoltaic (PV) Panels, Ground source heat pumps for space heating and cooling etc. PCM on integrating with conventional and non-conventional techniques results in enhancing the efficiency and reducing the electricity tariff. Thus, these hybrid systems can be a perfect alternative for the conventional systems.

Keyword:--

Ground Source Heat Pump, Phase Change Materials, Thermal Energy Storage.

Dyeing Fabrics Using Indigenous Materials

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Abstract:--

This Study attempted to test the appropriate fabric using indigenous materials. This study focused on dyeing fabrics using indigenous materials like acacia, mongo, mahogany, star apple and paper tree. This study tested the level of acceptability of color and odor of different barks in dyeing fabrics like cotton, silk and wool using indigenous materials such as paper tree, star apple, acacia, mango and mahogany. The evaluators of this study were the selected students from Bachelor of Technical Teacher Education major in Garments Fashion and Design at Isabela State University San Mateo Campus, San Mateo, Isabela. The result of the study revealed the level of acceptability in terms of color and odor. The color of the barks of mahogany was rated “very attractive” and “odorless” by the evaluators. Meanwhile, as to the effectiveness, there is no significant difference in the level of effectiveness of dyeing agent in terms of color and odor, in terms of acceptability, there is no significant difference in the level of acceptability of dyeing agent in terms of color and odor. The BTTE major in Garments Fashion and Design students and Faculty are encouraged to conduct and develop future researches related to this study for its further improvement.

A Study on Impact and Acceptance of Implementation of Digital India App based Payments Schemes

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Abstract:--

India is one of the growing economies which has a potential to out-develop other countries. The adoption of digital schemes in banking services will reduce the overall efforts thus, reducing the amount of time for making banking and financial transactions, exponentially. To tap into this potential, Digital India is a major step towards achieving this goal. The effective implementation and creating awareness is the key and basic requirement for the success of the digital India initiative. The project focuses on the perception of the residents of Udupi District, Karnataka, India towards the usage of Digital Payment Apps/Methods. The district being known for the intellectual population of the Karnataka State. The opinions a sample group was collected to determine the enablers and barriers of using Digital Payment Apps. India is a vast country with 68% of its population living the rural regions the implementation of reforms take considerable time and efforts to have a reasonable impact. As the rural population being more conservative it becomes a challenge for the implementation rate. The study involves identification and evaluation of the crucial factors which affected usage. These factors, ranging from gender to age to employment status, etc. were then used as a basis for formulating a set of questions and the responses obtained of the subjects were recorded and analyses for further insight on the impact of these apps or methods on the day-to-day life of a resident of Udupi, Karnataka, India. A trend can be observed in the increase in usage of digital payment apps in India and after demonetization.

Keywords:--

Digital India, cashless, security, technology, transactions, payments

Interactive Learning System in Mathematics for Day Care Centers

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Abstract:--

This study aimed to investigate the challenges met by the respondents in monitoring students' performance in Mathematics to develop an interactive learning system. The study used the Descriptive Research Method. Respondents were pooled from the day care centers based on their proximity and availability. Sample population reached twenty-five (25) parents and eighteen (18) teachers. The Child Development Centers are all government facilitated schools. These day care centers are located in Marikina City. The selected parents are those who have computers and internet at home. The survey questionnaire was used as the main data gathering. The result of the study showed that the experienced monitoring challenges of the parents were lack of materials, such as reviewers, lessons and learning tools were not provided to them, while the experienced monitoring challenges of the teachers were lack of updates about the learner's assessment and numerical evaluation. Respondents agreed that they 'highly accept' the system; therefore, using the interactive learning system in monitoring students' performance became easier for both of them as well as boosted the students' interest in learning Mathematics because of visual presentation and animation. The researcher concluded that in terms of monitoring students' performance, the use of materials such as reviewers, lessons, learning tools is significant to parents and it was suggested that the display of grades and teacher's remarks should be improved. The researcher is highly recommending considering the integration and utilization of information communication technology and multimedia to the early childhood care, education and curriculum to the day care centers. Teachers and parents should be trained about the use of the system and be oriented on the importance of technology to enhance monitoring and teaching.

Keywords:—

interactive, animation, mathematics, computer-aided tool, collaboration

Open Battle between Open Source boards

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Abstract:--

In today's era of open source platforms, Arduino is a one of the most promising and easy to learn hardware prototyping platform out there. There is range of Arduino boards available as per the embedded application requirement. Arduino board designs use a variety of microprocessors and microcontrollers operating at different voltages and speeds with different sets of IO pins and on chip peripherals. A detailed comparative study of popular Arduino boards is presented in this paper. Experiments have been carried out to validate the performance and power consumption.

Keywords:--

Open source, Arduino, Hardware, Prototyping, Embedded, Microcontroller, Microprocessor.

Exploratory Factor-Item Analytic Approach for Construction Project Cost Overrun using Oblique Promax Rotation for Predictors Determination

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Dante L. Silva, Mathematics Department, Mapua University

Abstract:--

Adapting innovations in construction project management can proliferate the production of high-quality projects which are known as vital contributors to the socio-economic development of a country. This study was conducted to provide a new approach to cost estimation that would help prevent cost overrun problem during project implementation. Preliminary data collection through literature review and interview led to the determination of qualitative information pertaining to the most frequently encountered cost-influencing conditions and issues, which were adopted to develop the Cost-influencing Factor Assessment Questionnaire, following an Exploratory Factor Analysis through Principal Axis Factoring Method and Oblique Promax Rotation Method to uncover the latent underlying cost-influencing factors for building projects. The survey data were validated through the Kaiser-Meyer-Olkin measure of sampling adequacy ($KMO > 0.5$) and the Bartlett test of sphericity ($p < 0.05$), which indicate the suitability of the data for Factor Analysis. Scree Plot Analysis and Parallel Analysis suggested that 9 factors should be extracted, which were then named according to the shared concepts of the items clustered under each factor. After extensive data screening and analysis, the validity and reliability requirements for scale construction were met, and a new set of items categorized into 9 cost-influencing factors were obtained, establishing the Project Cost Assessment Instrument. A mathematical model was developed through multiple linear regression analysis which showed that 4 out of 9 factors were significant predictors for residential project cost, and these were Project Scale, Equipment Management, Site Condition, and Client Collaboration. The validity of the model was ascertained by means of graphical and mathematical validation, proving the mathematical model's good prediction accuracy.

Keywords:--

Construction Project Management, Factor Analysis, Mathematical Model, Project Cost

Non-destructive Technologies Used for Mango Quality Assessment

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Abstract:--

Mango is an important agricultural product exported worldwide. Mango fruit quality assessment, since time immemorial, is done manually which makes it time-consuming and labor intensive and people that inspect the quality needed to be expert in the field. Manual assessment of mangoes needed the sample fruit to be destroyed thereby reducing the produce. Non-destructive methods have been developed to solve these problems including the internal assessment of the fruit. This paper presents the non-destructive techniques used in inspecting the fruit quality from its physical structure, internal composition, mechanical damage, diseases and defects and insect infestation. It aims to update of the latest technologies utilized for the mango fruit grading before it is sent out to the market and what can still be explored in this field of post-harvest handling of the said fruit.

Keywords:--

Discrete event simulation, productivity, utilization, optimization

Multi-Platform E-Locator for Disaster Risk Reduction and Management System for the Vulnerable Population of Biliran Province

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Abstract:--

The primary goal of this study is to develop and evaluate a multi-platform e-locator for disaster risk reduction and management system for the vulnerable population of Biliran province which served as reference among Barangay Disaster Risk Reduction and Management Committee (BDRRMC) in the prioritization of preemptive and forced evacuation. This study was participated by 15 members of BDRRMC and evaluated by 10 IT Experts. Findings revealed that the overall extent of compliance of the developed system on multi-platform e-locator for disaster risk reduction management system for the vulnerable population of Biliran Province in terms of: functional sustainability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability is very high. The developed system is very responsive and useful to the needs of the BDRRMC during preemptive and forced evacuation, compliant to ISO 25010 standards for software quality, ready for deployment to its intended user, and recommended for replication to other municipalities in the Province of Biliran.

Keywords:--

Preemptive evacuation, vulnerable groups, DRRM application

Analysis of Various Time Series Change Detection Techniques: An Empirical Review

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Abstract:--

Time series change detection techniques have various uses, ranging from data classification, prediction, clustering and application based inference. These data mining techniques on time series change detection are usually application specific but the concepts are equally applicable to any other application area of research. In this paper, we have performed an empirical analysis of some standard algorithms on time series analysis, and evaluated their performance. This analysis has enabled us to identify some algorithmic traits which are specific to a given area of research, and thus would help researchers in selecting base algorithms for their own research purposes. Although, the techniques reviewed in this paper are targeted towards forest cover datasets, but are applicable to any other dataset as per application requirements.

Keywords:--

Time series, mining, classification, clustering, prediction, forest cover change

Wave transmission of tandem breakwater with various angles of wave attack

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Abstract:--

This paper explains the study of wave transmission of a tandem breakwater physically modeled with various angles of wave attack. Tandem breakwater is a combination of a submerged rubble mound breakwater set up at some distance in front of a conventional non-overtopping rubble mound breakwater. The experimental works were carried out in a wave basin having dimensions of 25 m length, 18 m width and 1.2 m height. Setting still water depth of 0.45 m, 0.50 m and 0.60 m, waves with $T=2.05$ sec, 2.20 sec and 2.50 sec were generated from a piston type multi element wave maker. Multi directional waves were generated with angle of wave attack of 0, 15, 30 and 60 degree. Wave gauge was located at eight different positions to record water level and by using the measured data, the wave transmission, K_t was calculated. Besides the effect of various angle of wave attack, the effects of relative distance between submerged and rubble mound breakwater towards wave transmission was investigated. Tests are carried out for different spacing between two rubble mound structures ($X/d = 8.33-15.56$) and for different relative heights ($h/d = 0.42-0.56$). The results show that for angle of wave attack of 0 degree, the wave height attenuation (WHA = $1 - K_t$) achieved are 24.5% (0.45m), 20.7% (0.50m) and 10.4% (0.60 m), respectively. WHA are increasing along with the increasing of angle of wave attack but it is declining with increasing of water depth. The highest WHA is for the depth of 0.45m and at the angle of 60°, which is 55.02%. The values of K_t for $X/d = 10.0-13.33(6\text{ m})$ are more approaching to 0 compare to $X/d = 6.67-8.89(4\text{ m})$. K_t decreases with an increase in H/gT^2 and increase in relative depth, d/gT^2 as submerged breakwater is efficient in breaking the steeper waves.

Keywords:--

Tandem breakwater, Wave attack, Wave height attenuation, Wave transmission

MAFAC-Multiple Alignment File Compression using Arithmetic Encoding

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Abstract:--

Due to advancement in sequencing the cost of genomic sequencing has been decreasing so much that researchers all around the globe had gathered huge volumes of data for present and future use. Over the last few years a principally huge dataset in molecular genomics, recognized as whole genome alignments, has gained substantial position. There is great urgency to store these genomic data efficiently, because storage cost is not declining as fast as the cost of sequencing. Usually, all-purpose compressor tool-gzip is used to overcome this problem. However, these tools were not explicitly designed to compress this type of data, and hence are not that efficient. There are various compression algorithms present that deal with genomic data but only a handful of them handles whole genome alignment. In this paper, we propose a lossless compression method, explicitly intended to compress MAF (Multiple Alignment Format) files. Our proposed method uses finite context modelling and arithmetic encoding to achieve better compression. Result shows that it works better than the present well known tools for MAF files compression.

Keywords:--

Arithmetic coding, compression, Finite-context model, Multiple Alignment Format, Whole genomic alignment

Disaster Risk Mapping Decision Support System

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Abstract:--

The Philippines is one of the most vulnerable countries in the world to disaster and climate change. The Philippines Government, NGOs and local NGOs are all making attempts to address climate change and disasters at various levels. Thus, a Disaster Risk Mapping Decision Support System was conceptualized to reduce the response time during disaster and calamities. This study aimed to model the response on incidents and to offer model-derived strategies for improve rescuing situation in times of attack of disasters and calamities. This study is an added literature to the development and validation of the disaster risk app as a rescuing and mapping tool. The R&D methodology which included the assessment of the extent of compliance to ISO 25010 using disaster risk app was used. Descriptive statistics was employed particularly mean and standard deviation in order to analyze the data with regards to validity of the DRMDSS and the assessment of IT Experts and Users. The t-test for correlated samples was also utilized to determine the significant difference between the IT Experts and Users assessments. It was found out that the disaster risk app iscompliant to ISO 25010 in terms of Functional Sustainability, Performance Efficiency, Compatibility, Usability, Reliability, Security, Maintainability and Portability. Moreover, a positive feedback towards DRMDSS was also drawn from the respondents.

Keywords:--

Decision Support, Disaster Risk, Information System, Mapping Tool, Risk Application

E-Assessment Application Using a Decision-Tree in Predicting Teachers' ICT Competency Level

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Dr. Maria Visitacion Nepomuceno Gumabay, DIT, Program Coordinator, Information Technology, St. Paul University Philippines

Jesus Bartolome Pizarro, DPA, Associate Dean, St. Paul University Philippines

Abstract:--

The study focused on the development of the application on predicting ICT Competency of teachers based from the model created from the different decision tree algorithms. The proponent decided to create a model and develop a system on predicting ICT competency using a decision tree to assess the level of ICT knowledge and by using the standardized questionnaires. This innovation can lead to a newer paradigm using artificial intelligence. Through developing such innovation, the teachers can easily identify the level of ICT knowledge using the framework from National ICT Competency Standards (NICS) by assessing the developed applications. The algorithm used on the prediction of Teachers ICT Competency are J48 and Best First Decision Tree (BFTree) with the highest accuracy value after being test using cross-validation and classification in Weka. The summary of the evaluation showed that the e-Assessment Application got an overall average weighted mean of 4.63, which described as a very high extent. Based on the response of the respondents, the strongest point of the system was its portability and performance efficiency, which earned the highest average mean among other major categories in the system evaluation. The e-Assessment Application in Predicting Teachers' ICT Competency Level is very useful in terms of predicting the ICT knowledge and skills through the self-evaluation of teachers. The result of the self-assessment and validation of the School Head or Department Head is a big help on identifying different intervention to improve the ICT skills of the teachers used in the teaching instruction and apply the trends in Information Technology.

Keywords:--

Machine-learning, Algorithm, Prediction, Weka, Data Mining, Decision tree, ICT Competency, e-Assessment.

Robot for Writing Alphabets: A Review from Literature

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Norshita Mat Nayan, National University of Malaysia

Riza Sulaiman, CAVITE STATE UNIVERSITY-INDANG CAMUPS

Abstract:--

Today's era, large-scale and large-scale industries face common constraints such as lack of time and workers leading to inefficient manufacturing. Appropriate results for the above problems can be achieved using robotics. Furthermore, for meticulous results, image processing methods can be useful. This paper will review the literature on robots that can write characters from various sources and methods. Predict in the future robot who can write this character is very necessary in support of daily activities. Because people no longer have time to do writing work. With this robot all files, images, sounds sent through the media can be written by robots for information that is required. Write pictures of letters coming from the camera. The camera will provide input then the data will be processed using OCR (Optical Character Recognition) technology. The results of the character image processing will be in the process of using OCR technology will be a picture that can be recognized by the received controller system will be processed using a robot arm with results that are identical to the input image of the letters received. Different algorithms build a microcontroller, allowing the robot arm to write letters that come from the camera.

Keywords:--

Writing, image, character, Optical Character Recognition (OCR)

eHealth Application for Women Using Decision Tree-Based Classifiers

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JESUS BARTOLOME PIZARRO, DPA, Associate Dean, St. Paul University Philippines

Abstract:--

Information and communications technology (ICT) has revolutionized healthcare in developing countries by efficiently disseminating public health information and assisting consultation on health issues. It brings convenience and cost savings for patients no longer take time and classy trips just for consultation, diagnosis and possible treatment. This study is anchored to the joint baseline review of World Health Organization (WHO) and International Telecommunication Union (ITU), that is the vital role that ICT and particularly eHealth are playing in helping achieve health goals for girls and women. It focuses on the development of an eHealth application system using open-access datasets from UCI Machine Learning Repository. This attempts to predict the onset of diabetes and chronic kidney diseases grounding from the generated predictive models. These decision models are created using C4.5, ID3 and CART algorithms. RapidMiner data science platform was being utilized. Performance metrics were deployed such as accuracy, recall, precision and error rates to compare the reliability of each model. Models incurred the highest assessment are the bases of the developed system following Agile Software Development Life Cycle Model. In this study, easy access to healthcare workers through teleconsultation; diabetes and chronic kidney disease (CKD) online diagnosis; and maternal care videos are possible. The summary of the evaluation showed that the eHealth Application got an overall average weighted mean of 3.98, which is described as high extent. Based on the respondents' response, the strongest point of the system was its portability, which earned the highest average mean among categories of system evaluation. Thus, the system addresses the shortcomings of healthcare in terms of distance and timeliness of treatment fostering an equal access to healthcare.

Keywords:--

Machine-learning, Algorithm, Prediction, RapidMiner, Classifier, Telehealth

Decision Support Infographics System for Disaster Risk Reduction and Management

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Jesus B. Pizarro, Associate Dean, St. Paul University Philippines

Abstract:--

The objective of the study is to develop a decision support infographics system for DRRM in Biliran province. It sought to answer significant issues as to challenges encountered by the participants regarding the DRRM, application that can be developed to address the identified disaster risk and reduction management, extent of compliance of the develop application to ISO Standard. The participants of the study include two groups of individuals. Participants in the focus group discussion were the ten DRRM officer from the different municipality of the Province of Biliran. The second group were the ten (10) ICT experts who participated in the technical evaluation of the developed system. The study adopted two types of research instruments, which includes questionnaires for the FGD, and the evaluation tool based on the ISO 25010. Interestingly, result implies that the area which needs appropriate action based on the FGD conducted was the absence of computerized system for DRRM. There is really a need to come up with a system that is capable of addressing issues on DRRM and is anchored on the agenda of the PDRRMO. Moreover, areas evaluated based on ISO standard were met by the developed application and can be used as a tool for disaster planning and mitigation measures.

Keyword:--

Disaster risk, Mitigation, Disaster risk reduction management, Decision support system, infographics

Green Catalysis: Syntheses and anti-cancer evaluation of some new 2-heterostyrylbenzimidazoles using triacetylborate-glycerol.

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Abstract:--

A series of new 2-heterostyrylbenzimidazoles 3 (a-x) were synthesized as potential antibacterial and anticancer agents. Compounds were synthesized by the newly developed methodology applying green catalysis using triacetylborate (10 mol%) and glycerol. All the newly synthesized compounds were characterized by IR, Mass and NMR spectral analyses. All synthesized compounds were screened for their anticancer activities screened against HeLa (human cervix cell lines), A549 (Human lung carcinoma cell lines), DU145 (human prostate cancer cell lines) and MCF7 (breast cancer cell lines). The results revealed that compounds (3b, 3g, 3h, 3j, 3k, 3n, 3o & 3t) exhibited significant antibacterial activity and compounds (3d, 3g, 3j, 3n, 3q, 3t, 3v & 3w) exhibited significant anti proliferative activity.

Key words:--

2-Heterostyrylbenzimidazoles, Glycerol, Green Catalysis, Anticancer Activity.

Gender –responsive Coconut Dehusking Machine: Utility Model

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Abstract:--

This paper aims to develop a Gender-responsive Coconut Dehusking Machine (GRCDM). Developmental research is employed which involves designing, fabricating, and evaluating the output performance of the machine. A total of thirty (30) respondents operationally test the machine and evaluated its ergonomics, functionality, adaptability, cost-effectiveness, and level of acceptability. The GRCDM is driven by a gasoline motor engine which drives the dehusking mechanism. It applies a speed reduction principle through the use of a belt and chain-sprocket assembly that links directly to the dehusking unit composed of two cylindrical rollers. The interaction of the rollers with its plurality of spikes and corrugated round bars served as a penetrating means which resulted in the tearing effect of the husk leaving the nut undamaged. The machine meets 95- 100 % of the physical ergonomics requirements, 90-94% functional, 90-94% adaptable, 90-94 % cost effective and 95-100% acceptable with a drawback on the cost of the fabrication. The dehusking machine sets at a moderate speed of 21.40 rpm has a dehusking capacity of 559 nuts per hour and efficiency of 97.04% respectively. The energy requirements in terms of power and torque are 0.3165 kW and torque of 0.1332 kN-m. Dehusking capacity relative to the standard fuel consumption of the machine is 310 nuts/ li. Using the developed gender-responsive coconut dehusking machine, it can help novice farmers particularly women to be involved in the dehusking process to make work easier and safe.

Prediction of Suitable K-12 Strand for High School Completers via Classification Model

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Jennalyn G. Nicolas, Technological Institute of the Philippines-Manila

Abstract:--

Succeeding in scholastic lives, one large important concern is to assign students to the proper study track when they have completed junior high school of the K-12 curriculum. The education system in the Philippines is from elementary with kinder 'til grade six to secondary education with four years junior high school, where after completion of the 10th grade the students are promoted to senior high and enrolled into different academic tracks or fields of their interests such as GAS, STEM, HUMMS, TVL and ABM. These tracks serve as prerequisites in their admission to tertiary education. In order to be successful in academic life the student must choose the proper study track. Majority of them fail to choose the appropriate track for them. The main crisis in the choice of an academic track in Philippine schools is not having useful skills for students as scaffolds in their planning. This paper will utilize data mining techniques to give a classification approach to guide students in choosing the proper track suitable for them. For this objective, a decision tree classification model will be developed to determine which strand is appropriate for each student. There are a set of classification rules that will be extracted from the decision tree to predict and classify the individual class label of student. A confusion matrix is built to evaluate the model where the 10-fold Cross Validation method will be used for accuracy estimation of the model.

A Comparative Analysis of Artificial Neural Network and Support Vector Regression for River Suspended Sediments Load Prediction

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Abstract:--

The environmental problems like floods, soil erosion need forecasting so that precautions could be taken, in which suspended sediment estimation helps. Similarly projects of River Engineering like building dams need forecasting of sediments collections. Hence, sediment prediction helps in great deal in river engineering projects as well as pollutants estimation projects of environmental engineering. An artificial neural network (ANN) and support vector regression (SVR) models are used to estimate the sediment discharge in rivers. In this work, we investigate the abilities of ANN and SVR models to estimate the daily suspended sediment load (SSL) in Tawang Chu River, Jang of Arunachal Pradesh, India. The results are obtained and compared for performance of the two models on the basis of their accuracy of prediction of suspended load. Performance is compared using quality measure parameters like mean square error (MSE), mean absolute error (MAE) and root mean square error (RMSE).

Index Terms:--

Artificial neural network, support vector regression, suspended sediment load, prediction.

Prediction of Coronary Heart Disease Using Decision Tree with Analytics

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Abstract:--

Several data mining techniques where being workout and implemented in the medical science field Among of the medical issues nowadays even putting into serious concerns is the coronary heart disease, a serious problem which resulted to the fast growing rate patient's death. With numerous datasets, people are eager to find solutions even an early detection of coronary heart disease. With these premise, the researcher have proposed a classification model that will be able to determine or detect if a person or patient positively much vulnerable to coronary heart disease. This in turn helps some practitioners in field to simply detecting early as much as possible this kind of disease. This study will focus on the classification of patient dataset to determine if the patient has coronary heart disease. The patient dataset will compile from data collect from medical practitioners. Trough data mining, the researcher will provide possible 22 attributes from the database that will be consider for the predictions required for the heart disease. Data Mining is major anxious with the study of data and Data Mining tools and techniques are used for discovery patterns from the data set. The most important aim of Data Mining is to find patterns mechanically with least user input and efforts. Data Mining is an influential tool able of usage decision building and for forecasting expectations trends of market. Data Mining tools and techniques can be effectively functional in different fields in different forms. Many organizations now begin using Data Mining as a tool to contract with the aggressive surroundings for data analytics.

Analysis and reduction of manufacturing non-conformities of non-threaded fastener

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Abstract:--

This paper may be considered as a systematic and collective approach to reduce manufacturing non-conformities of Non-threaded fasteners i.e. Dowel Pin by Basic Quality tools. This paper covers manufacturing process of Dowel Pin and its analysis at various stages of manufacturing. The manufacturing process of Dowel Pin has been analyzed at industry X and done corrections in the process, drawing and holding device of Machine Tool to reduce manufacturing non-conformities. After modification, the results have been improved.

Index Terms

Dowel Pin, Basic Quality Tools, Brainstorming, Centreless Grinder, Automatic Lathe, Root Cause Analysis.

IoT-Business Intelligence Framework for State Universities and Colleges

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Abstract:--

In the context of competitiveness among graduates of tertiary education in the public sector, the government seeks to improve the quality of education by implementing various programs that would elevate the type of education public State Universities and Colleges offered. Thus, there is a need to assess the academic performance of students in order for the administrators to implement programs that will enhance the quality of education. IoT devices played significant role in the extraction of relevant student information. To analyze the academic performance of students, education data mining was considered to extract vital information which were used in the study. In this paper, enrollment data, admission data, and academic data were utilized as data set. The performance of students were evaluated using Naive Bayes and K-Means algorithms. Naive Bayes algorithm was used to extract a predictive model to determine students with learning difficulty using admission and enrollment data. K-Means algorithm was used to produce cluster models to profile students regarding their academic performance. The analyzed results will then be presented using Business Intelligence dashboard to provide school administrators relevant information with regards to academic performance of the students.

Study on properties of Nano concrete using industrial waste

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Abstract:--

According to survey reports of 2018, the world population reached 7.6 billion in April 2018 and among that 54% of the lives in the urban areas and it will reach to 66% in 2050. Due to increase in the population in the urban areas, necessity of tall buildings for effective use of land and resources. Ultra-high strength concrete structures play a vital role in the construction of tall buildings. Lateral loads become an increasingly dominant parameter for the planning and design of tall building. In lateral load, HSC are most likely used in the structural columns and walls. The dynamic properties of the main wind force-resisting system must be taken into account. For effective use of the carpet area in the tall buildings, the buildings should be of thinner structural members with high strength and durability. This paper deals with development of high strength concrete by using the industrial slag. Usage of sand will deplete the natural resources of the country but nowadays they are using M-sand that too deplete the natural resources (rocks). Using of industrial waste (slag) as a replacement of river sand will solve the above mentioned problem. This paper presents the developed high strength concrete of 110MPa compressive strength and other mechanical properties.

Development of Machine Learning Models Using Study Behavior Predictors of Students' Academic Performance through Moodle Logs

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Abstract:--

Applying data mining and machine learning techniques on Moodle logs is an emerging trend that can help track student's performance and decrease the failure rate. Due to Moodle's limitation to provide these features, this study was conceptualized. The study made use of historical data from Moodle logs of past academic years and made use of pre-processing and feature selection techniques of the open source data mining tool named Weka. This study made use of predictor attributes such as Course Viewing Time, Resource Views, Quiz Taken, Replied in Discussions, and Viewed at Weekends. However, it was found out that predictor attributes such as Activities Completed, Course Views and Assignment Passed are strongly correlated to students' performance. Also, the predictive accuracy of a model improves depending on the machine learning algorithm being used. Algorithms such as J48, Random Forest, JRip and OneR have been consistently performing well regardless of the model it is being trained into and achieved predictive accuracy as high as 96.42%. The study was able to reflect the predicted results of Weka back to Moodle through an integrator and developed block using Moodle API. Finally, the developed application was evaluated by IT Experts using the ISO 25010 criteria.

Knowledge sharing networks on outcomes-based education: The case of a Philippine Private University

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Janet Calupitan, LPU-St. Cabrini School of Health Sciences

Abstract:--

While knowledge sharing has been a topic of interest in most knowledge management literature, little is known about knowledge sharing in private commercial sectors, particularly in private higher education institutions. Thus, this study aimed to analyze the knowledge sharing networks on outcomes-based education among faculty members in a Philippine private university. Using descriptive-case research design, the study analysed knowledge sharing network in terms of knowledge seeking, knowledge donating, and problem sharing. Analysis of the respondents' social networks revealed a generally simple, unidimensional and leader-centered knowledge seeking, knowledge donating, and problem ties. The knowledge seeking ties showed most individuals or nodes having only one tie of interaction and with no reciprocated interaction. Almost similar findings were found when it comes to donating of OBE-related information, but it showed more reciprocated interactions. The network showed no isolates, hence, members, at least at one point, had shared knowledge to others within the network. The problem ties showed almost all faculty members within the network sought help on OBE-related problems from other faculty members. The study concluded that the networks mapped out in this study were generally not complex, meaning that ties were usually unidimensional, but there was clearly an active network on OBE knowledge-collecting and sharing. Further, the study proved the utility of social network analysis as a theory and as a methodology in understanding how knowledge in an organization flows, thereby informing policies and strategies on knowledge sharing.

Keywords:--

Knowledge sharing, knowledge management, outcomes-based education, social network analysis

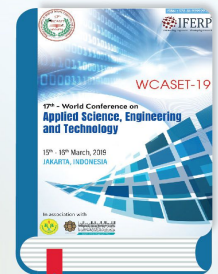
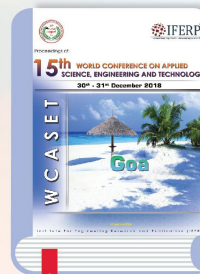
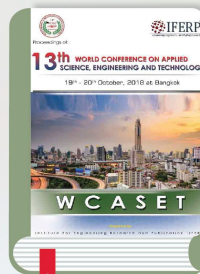
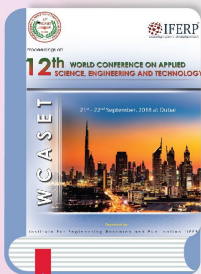
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