

# 19<sup>TH</sup> WORLD CONFERENCE ON APPLIED SCIENCE, ENGINEERING AND TECHNOLOGY - 2019



**BANGKOK, THAILAND**



**16<sup>TH</sup> - 17<sup>TH</sup> MAY, 2019**

ORGANIZED BY  
INSTITUTE FOR ENGINEERING RESEARCH  
AND PUBLICATION (IFERP)



19<sup>th</sup> World Conference on  
Applied Science, Engineering and Technology  
(WCASET-19)



Bangkok, Thailand  
16<sup>th</sup> - 17<sup>th</sup> May 2019

Organized by  
Institute For Engineering Research and Publication

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IFERP-Explore

## **Acknowledgement**

IFERP is hosting the **19<sup>th</sup> World Conference on Applied Science, Engineering and Technology** this year in month of May. The main objective of 19<sup>th</sup> 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)**

## **Preface**

We cordially invite you to attend the **19<sup>th</sup> World Conference on Applied Science, Engineering and Technology (19<sup>th</sup> WCASET-19)** which will be held at **Bangkok, Thailand** on **May 16<sup>th</sup>-17<sup>th</sup>, 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 130 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 64 papers were included to the proceedings of **19<sup>th</sup> WCASET - 2019**.

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of **19<sup>th</sup> 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)**

**19<sup>th</sup> World Conference on Applied Science,  
Engineering and Technology  
(WCASET-19)**

**Keynote Speaker**





**Dr. Singam Jayanthu, FIE**

*PhD, M Tech, BE (Mining), MS (Counseling & Psychotherapy), Former Scientist of CMRI & NIRM, National Mineral Awardee*

*Professor*

*Department of Mining Engineering*

*National Institute of Technology, India*

**MESSAGE**

I am happy to be a part of the “19<sup>th</sup> World Conference on Applied Science Engineering and Technology (WCASET - 19). The conference will be held at Bangkok, Thailand on May 16<sup>th</sup> & 17<sup>th</sup>, 2019 by the Institute For Engineering Research and Publication (IFERP) operating under Technoarete Research and Development professional association bringing technical revolution and sustainable development of science and technology. I wish to convey my felicitations to the organizers and to all the participating delegates for their input into the successful planning and execution of proceedings of the two days deliberations among the scientists, engineers, and technocrats.

Conference schedule itself is self explanatory with the focus on the scientists, engineers, technocrats etc for developing their scientific, academic, technical expertise, soft skills, planning, organizing, and communication skills with leadership skills set. It gives students/scholars/academicians/industrialists/experts from various agencies a right platform to have an insight into various contemporary professional issues with due regard to the present trend of transdisciplinary applications for holistic and sustainable development of the world class society as a whole.

This is the era of culmination of all disciplines including science, engineering and technology in all countries world over to suite the country specific conditions to deal with ever-increasing demand of the human kind for sustainable development of the world. With the acceleration in the efforts of Interaction of almost all Industries and Institutes in the recent times by the initiative of various Government and Non-Government organizations throughout the world, I hope that this conference provides informative and innovative ideas to all the participants. Innovative deliberations of various scholars and experts will further inspire the current and future generations of budding scientists, engineers, and technocrats etc. to contribute their 100 % best and bring an added pride to the world. I look forward to the recommendations of the deliberations as useful inputs towards better understanding of the problems, issues, challenges and probable initiatives to better and sustainable world in all respects vis-à-vis science, engineering and technology.

I extend my warm greetings to all the participants and best wishes for a grand success of the above Conference

**(Dr. Singam Jayanthu)**





**Dr. Maria Visitacion Nepomuceno Gumabay**

*Associate Professor  
St. Paul University  
Philippines*

**MESSAGE**

Warm greetings and congratulations to Institute for Engineering and Publication (IFERP) for hosting the 19th World Conference on Applied Sciences, Engineering and Technology.

This conference provides opportunity for the researchers, practitioners, educators and graduate students who are ardent to share significant studies related to applied science, engineering and technology. It also provides opportunity for all the participants to engage actively in fora, interact with renowned speakers and presenters, updating and networking to broaden their mind to new discoveries and innovations.

Also congratulations to all the presenters for sharing your research outputs thus, your scholarly contributions surely give new learnings to all participants who are actively engaged.

May we continue to discover new knowledge and innovations to empower the students to be insightful, critical thinkers and innovators.

More power and God bless!

A handwritten signature in black ink, appearing to read 'Gumabay', with a stylized, cursive script.

**(Dr. Maria Visitacion N. Gumabay)**

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**WCASET-19**

**19<sup>th</sup> World Conference on  
Applied Science, Engineering  
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**Bangkok, Thailand**

**16<sup>th</sup> - 17<sup>th</sup> May, 2019**

# ABSTRACTS

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**19<sup>th</sup> WCASET - 19**

**Organized by**

**Institute For Engineering Research and Publication (IFERP) | ScienceFed**



## Tourism Infomercial Analyzer for Metro Vigan, Philippines

**Ana Leah Arquelada Alconis**, Student, Saint Paul University Philippines

***Abstract:--***

Tourists are attracted in traveling to the historic City of Vigan, home of one of the New Seven Wonder Cities of the world. Since then tourism in the province has experienced continued growth and development. Today it has become a great challenge to meet and satisfy the needs and demands of tourists in getting vital information on the different tourism industries. When a large number of tourists arrive at the same time, the Ilocos Sur Provincial Tourism Office, the forefront of the province experience difficulty in catering all the information needs of tourists. All these cause an adverse impact on tourists.

To remedy this problem, the Tourism Infomercial Analyzer system is designed and developed with features of an infomercial, travel router, and analyzer. The System aims to advertise, educate, and promote the province to the world. Likewise, it showcases the hidden beauty of the place and provides a detailed explanation about the province, its attractions, accommodations, and native commodities. Moreover, the System is designed to assist tourists with the possible land route to reach one destination to another. Finally, the System is the most prominent product of Expert System suited to advertise and promote all tourist destinations in Metro Vigan.

***Keywords:--***

Tourism Industry, Infomercial, Analyzer, Recommender, Itinerary Planner, Promotion, Marketing

## Utilizing Simultaneous Localization and Mapping (SLAM) in Augmented-Reality Shell Game for iOS Mobile Phone

**Andrei Lorenz V. Herrera**, De La Salle University, Dasmariñas

**Paul Dominic I. Tecson**, De La Salle University, Dasmariñas

**Josephine T. Eduardo**, De La Salle University, Dasmariñas

**Maryli F. Rosas**, De La Salle University, Dasmariñas

***Abstract:--***

Augmented Reality (AR) has come to integrate with daily life to improve productivity and quality of experience. The goal of this study is to improve the performance of the participants on mental training and to utilize SLAM algorithm. The researchers created a game where user interaction and skills application are monitored in augmented reality environment. This game provides an exciting, entertaining and engaging Augmented Reality experience which will specifically enhance cognitive training and development. . This work adopted the new tool for augmented reality, ARKit, which is introduced by Apple in 2017. ARKit enables smartphones to sense environment, comprehend world experiences and interact with context. ARKit is a great contribution in Augmented Reality technology evolution and growth. Through this tool it will soon remove the necessity of making marker-based applications for AR implementation. Further, this game focuses in utilization of Simultaneous Localization and Mapping (SLAM) algorithm. This uses mainly visual sensors of the camera in the iOS mobile phone which reveals innovations of SLAM algorithm to improve user experience on games especially on skills training

## **Radon Risk Management in public buildings in northwest Portugal: from short-term characterization to the design of specific mitigation actions**

**António Curado**, proMetheus, Instituto Politécnico de Viana do Castelo, Viana do Castelo and Construct LFC, Faculty of Engineering (FEUP), University of Porto, Portugal

**João P. Silva**, proMetheus - Instituto Politécnico de Viana do Castelo, Viana do Castelo, Portugal

**Sérgio I. Lopes**, ARC4DigIT - Instituto Politécnico de Viana do Castelo, Viana do Castelo and Instituto de Telecomunicações, Aveiro, Portugal

### ***Abstract:--***

Portugal is a country with a considerable risk regarding natural radiation since in a considerable part of the territory the soil is mainly composed of granitic rocks, containing high uranium levels. Radon gas is currently classified by the International Agency for Research on Cancer (IARC) as a Group 1 carcinogen. To tackle the problem since the beginning of 2019 there is new legislation in force to regulate indoor occupational exposure to radon gas. An experimental study was carried out in a city in the Northwest of Portugal by taking short-term measurements in a set of 15 municipal buildings (schools, museums, galleries, theaters, and municipal bureaus and offices, etc.) differing not only on its architecture and its construction period, but also on the number of occupants, its habits, and occupancy schedules. The in situ characterization allowed highlighting radon risk to which buildings' occupants are subject to, and by results analysis to propose a radon management strategy aimed at minimizing the risk of occupant exposure.

### ***Index Terms:--***

Radon management strategy, Radon mitigation, Radon risk analysis



## Abra iTour: A Semantic Web Recommender Using Hybrid Algorithm

**Arpee M. Callejo**, Instructor I, University of Northern Philippines and Saint Paul University Philippines, Tuguegarao

### **Abstract:--**

Information on the web is increasing in an exponential rate. This has resulted to too many choices of users available on the web giving complex processes of the world's largest database, the Internet. This has also given birth to the development of data filtering algorithms used in recommender technologies that help users find their best decision from the large unstructured database of the World Wide Web.

Recommender systems have been widely used in e-commerce websites like Lazada, Amazon and other popular websites like Youtube and Spotify, LinkedIn, Facebook and Instagram. Thus, the researcher came up with a research study on the development of a recommender system.

This study is a research and development of a recommender system for the province of Abra, Philippines, titled "Abra iTour: A Semantic Web Recommender Using Hybrid Algorithm". The system uses a hybrid algorithm, a combination of Collaborative and Content-based filtering to extract data for the recommendation lists offered to the users of the system.

Collaborative algorithm is used for recommending items to a user through preferences and tastes through user ratings and comments feature of the developed recommender system from many users collaborating. It utilized the use of the cosine similarity to get recommended items similar to other users. This filtering algorithm has limitations in giving recommendations to users, and in order to respond with this limitation, the researcher added a content-based algorithm on the developed recommender.

Another data filtering used is the Content-based algorithm which recommends items based on the searches of the users through the integration of meta tags and keywords in the database of the system to get the similar items from searches by an active user.

The hybrid algorithm used in the development of the recommender's level of efficiency acquired a weighted mean of 4.59, Very Great Extent to 10 IT experts. This implies that the IT experts agreed on the extent on the level of efficiency of the algorithm. Thus, the hybrid algorithm used in the development of the system is proven.

The recommender system ISO 25010 Software Quality Standards evaluation acquired an overall weighted mean of 4.52, Very Great Extent to one-hundred fifty (150) research participants composed of prospect tourist or travelers, hotel owners, tourism agency and IT experts. This implies that the recommender system is ready for deployment and implementation.

All factors on the evaluation between users and IT experts on the extent of compliance to ISO 25010 Software Quality Standards were resulted to no significant difference therefore; there is reliability of the data gathered from both users and IT experts in the questionnaire on ISO 25010 Software Quality Standards.

## Optical Character Reader of a Braille Unicode System for the Blind

**Dr. Arvin Roxas De La Cruz**, Polytechnic University of the Philippines - Manila

***Abstract:--***

This study aspires by innovate braille system by applying the fast coping technological advancement of the world to it. Braille is a code – a system of dots that represents the letters of the alphabet and that visually impaired individuals can use to read independently. As Braille Technology is fast growing, more and more people with visual impairment cannot afford to bought one. Thus, the proponents created a prototype, a portable and a lot cheaper braille device that will help individuals and institutions for their reading challenges. The proponents created a braille display that comes up with a scanner that will scan physical text documents then process it to become an output as a braille cells. It also comes up with a text-to-speech conversion which will become an option for the involved person on what will visually impaired individual chooses as an output. This is made possible by Optical Character Recognition (OCR) technology that the proponents used in Raspberry Pi. The OCR is responsible for the image processing that will convert the image captured into a text file. The text file will then be processed again to send signal to the servo motor that is responsible for pushing the braille cells needed. The device also includes motor guide for correct scanning of the physical text documents. The device will perform the task quickly that will surely help visually impaired individuals to easily read reading materials. This system is conducted to provide another solution on problems about reading for blind and visually impaired individuals and to provide cheaper device for them. It will contribute not only to the community involved but also in the technological industry in the Philippines.

## Technological Advocacy of Migrant Workers in The Pre Placement Based On Personal Legal Assistance

**Asri Wijayanti**, University Muhammadiyah of Surabaya, Indonesia

**Yayuk Sugiarti**, University Wiraraja, Sumenep, Indonesia

***Abstract:--***

The right to work and live decently for humanity is often underestimated by some countries. The placement of Indonesian migrant workers abroad must get a serious attention. The impacts can be either the loss of private property of migrant workers and their families or even the loss of their life. Legal protection was needed in the form of prevention of violations of law through advocating assistance to Indonesian migrant workers during their pre-placement based on personal legal assistance. Due to the fact of this situation, the research focused on how to develop the design of legal advocacy which met with the right to work and decent livelihoods for Indonesian migrant workers. This study used a normative juridical socio-legal approach in Indonesia. The findings showed that the advocacy based on personal legal assistance can be a positive element so that the right to work and live decently for humanity for Indonesian migrant workers can be fulfilled.

***Keywords:--***

Indonesian migrant workers, the right to work, personal legal assistance

## Automatic Exchange of Information as a Technological Tool for the Protection of Customers of Financial Institutions

**Bambang Sugeng Ariadi Subagyono**, Airlangga University, Surabaya, Indonesia

**Agus Yudha Hernoko**, Airlangga University, Surabaya, Indonesia

**Zahry Vandawati Chumaida**, Airlangga University, Surabaya, Indonesia

**Asri Wijayanti**, University Muhammadiyah of Surabaya, Indonesia

***Abstract:--***

This paper aims to determine a legal issues on taxpayer financial information by the Directorate General of Taxes (DGT). The other hand is to analyze whether or not the clash of norms between Law No. 9 of 2017 with Law No. 14 of 2008 concerning Public Information Openness. This study is normative legal research. This method is used to conduct analysis of laws and regulations, jurisprudence, and legal literature. The research approach used is the approach of the Act (statute approach) and the conceptual approach. The conclusion of this research is Law Number 9 of 2017 gives authority to the Director General of Taxes in terms of management of financial records that is submitted or deposited by financial services institutions, especially banking institutions. Sanctions given by law for banks and tax officers who leak customer records to third parties or who are not interested will be punished in accordance with the provisions in Article 41 of Law Number 6 of 1983 concerning General Provisions and Tax Procedures.

***Keywords:--***

Law, Openness, Access to Financial Information.

## Optimization of Time and Temperature for Thermal Reclamation of Furan Resin Bonded Sand

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**BSVSR Krishna**, Professor, Department of Chemical Engineering, MIT, Manipal Academy of Higher Education-Manipal

***Abstract:--***

The moulding sand is an important material in foundries to produce the castings and there is no suitable substitute for this sand invented so far. The availability of good quality high silica sand suitable for foundry industry is becoming scarce due to high demand and also strict restriction in mining of sand due to ecological reasons. The reclamation of used sand is becoming mandatory in order to avoid the scarcity and also disposal of used sand has become a serious issue due to environment reasons. Hence an attempt has been conducted in detail on furan resin bonded used sand collected from various foundries in and around Coimbatore area. The furan based used sand properties like loss on ignition (LOI), total gas evolution, sulphur content & PH were measured. Experiments were conducted in muffle furnace on collected samples at different time and temperature to identify the suitable and feasible properties of thermally reclaimed sand with fresh/new sand.

***Keywords:--***

Thermal reclamation, loss on ignition (LOI), total gas evolution, sulphur content, foundry, high silica sand

## User's response on core factors to consider on the choice of operating system and Evaluation of its effectiveness

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**Kristine Mae M. Daprosa**, Student, Computer science department, De La Salle University, Dasmariñas, Philippines

### ***Abstract:--***

As colleges and universities compete to each other in terms of what they can offer students especially in terms of technology, the need for having computers in schools is a must. Computers will not run without the use of operating system and in choosing the best operating system to be implemented in computer terminals, security, productivity, capability, interface and reliability shall be considered. The point of this study is to identify the core factors that drive the choice of operating system of the people from colleges and universities in Dasmariñas City, Cavite to arrive at reasons why they chose the operating system they use today. This paper will try to consolidate which operating system is mostly used by the students and teachers / professors / instructors in the teaching and learning process and eventually explore and differentiate the core factors considered by the participants.

## Microfinance Institutions and Women Entrepreneurship Empowerment: A Case Study of Minna, Nigeria

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**Safwanat Babanmalam**, Federal University of Technology, Minna, Nigeria

**Lawal Kamaldeen**, National Open University of Nigeria

**Amina Sani**, Federal College of Education Zaria

### **Abstract:--**

**Purpose** - Microfinance is a powerful means to empower the poor people especially women, mainly in developing countries. Its activities can give a means to scuttle out of poverty, an opportunity to entrepreneurship empowerment and promote sustainable livelihood and better working condition for women. The rise of the Microfinance institutions in the country is identified as an important occurrence which has implication for the development prospects of the women. This research is designed to identify the role of microfinance banks in women entrepreneurship empowerment and to analyze the result of loans from Microfinance interventions. Thus it has been made to focus on the activities and impacts on women, after receiving loans from Minna Microfinance Banks.

**Design/methodology/approach**- The research is focused on female borrowers of Microfinance banks in Minna through the use of empirical materials such as case study, personal experience, life story, interview, observational, historical and interactional so therefore; the research was conducted through a notable contact with life situation. In fulfillment of the purpose of this study, it was important to talk with the borrowers of some these banks, to know how the micro credit program has influenced their everyday life. A sample size of 105 respondents were interviewed through a structured questionnaire, in-depth interview and observation from Minna Township.

**Findings**- The study aimed at finding out whether the loan given to women beneficiaries had any impact on them. Though microfinance banks through its services is doing its best to provide women beneficiaries the necessary assistance to better their lot. It was realized that they use the same procedure in servicing their clients all over the country. Efforts should therefore be made to ensure that they take the culture of the women of Minna in consideration and faction out specific products that will address/ meet the very needs of these women beneficiaries

**Research limitations/implications**- The major limitation of this study is that it was carried out in a single district, hence the findings cannot be generalized for the whole country. Notwithstanding these, it was realized that there is a causal relation between elements of microfinance scheme and women entrepreneurship empowerment. A further study can be carried out to see which of their facilities that facilitates faster the empowerment of women.

**Originality/value**- This study is the first to provide a comprehensive analysis of the impact of micro credit on women entrepreneurs in Minna, by identifying the, awareness accessible and exposure (if any) to micro-credit in their locality; more so if these exposure has enhanced women's personal and business skills, and improved their confidence.

### **Keywords:--**

Women Entrepreneurs, Empowerment, Microfinance Banks, Minna

## Investigating dynamic co-movements and correlations in the European Union (EU)'s financial sector: An empirical analysis

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**Andrei Cosmin Tenea**, PhD student, University of Craiova, Faculty of Economics and Business Administration, Craiova, Romania

### ***Abstract:--***

This article studies co-movements and correlations between financial sectors in European Union over the last decades, by using a Dynamic Conditional Correlation model. The financial sectors have been severely affected by the extreme events triggered in the aftermath of the global financial crisis and European debt crisis. Therefore, we consider important to document the patterns of the time-varying co-movements for the European Union financial sectors. This will allow us to identify how each country's financial system responded in turmoil periods and to document the integration paths within European Union. The findings reveal an increased asymmetry with respect to the integration level. Also, the co-movements have been influenced by the crises effects. In our view, the lack of financial integration raises important questions regarding the functioning of the European Union, in particular, and the banking and capital market union, in particularly. The internationalization of financial sectors and global economic inter-linkages provide growing investment opportunities in the context of diversification.



## Teleconsultation System for Rural Health Units (RHUs) for Metro Vigan Philippines

**Eileen Rose C. Quilon**, Student, St. Paul University, Philippines, Tuguegarao

***Abstract:--***

The inequality in healthcare access remains more serious by the shortage of health workers and providers as well as inadequate and makes the delivery of healthcare run slower and less efficient in the Philippines. In the Province of Ilocos Sur, one of the main problems is the prolonged waiting time for the consultation and not having Municipal Health Officer (MHO) in some of the municipalities in the upland. However, there are Rural Health Midwives assigned in every Rural Health Units (RHUs) and Barangay Health Stations are being established where Barangay Health Workers (BHWs) are dynamically working in order to respond to the immediate primary health care needs of the community.

Teleconsultation System for Rural Health Units (RHUs) for Metro Vigan Philippines is an android application that serves as a tool for checking symptoms that are related to the patient's health concerns. The system is consists of different symptoms and diseases in the Family and Community Medicine which is associated with those symptoms. However, the developed system can never be an absolute substitute for medical practitioners' knowledge and expertise, as this is only perceived as a helpful tool to support consulting services. The developed system will only be served as a guide for the user's illnesses.

***Keywords:--***

Healthcare, Symptoms, Teleconsultation, Mobile Application, Primary Care, Rural Health Units

## Measuring brand equity for higher education: A case study of CFVG in Vietnam

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**Le Thuy Linh**, French-Vietnamese Center For Management Education (CFVG), National Economics University

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### ***Abstract:--***

Higher education is a unique industry that considers branding as important function to create competitive advantage for universities and business schools. Measuring brand equity plays an important role in providing educational institution a necessary strategic analysis before critical branding decisions. This study applies the CBBE brand equity model by Keller (2000) to measure the higher education brand with a case study of CFVG School of Management in Vietnam. With a mix approach combining qualitative and quantitative methods, the CBBE brand equity model is adapted for use in higher education context with prospective and retrospective higher education students as the research subjects. Findings provide rich understandings about the concept of brand equity in higher education settings. The research makes a novel empirical contribution through testing the CBBE brand equity model in Vietnam as an emerging higher education market. Practical implications were highlighted for higher education practitioners in their efforts to establish strong brand equity.

### ***Keywords:--***

Higher education, branding, brand equity, higher education branding, brand management

## **Buk CaTrike: A Mobile Application Analyzer for Metro Vigan**

**Honey Aninag-Avo**, Student, St. Paul University, Philippines, Tuguegarao

### ***Abstract:--***

Gone were the days when the word travelling would be mostly associated to businesspersons and trade. Nowadays, getting from point A to point B is much convenient with the various modes of transport available to the public.

Way back during the Spanish colonization, the use of calesa was introduced, made available to the upper-class of the society and it was soon declined in Second World War. During the American occupation, where the advancements arrived, the use of jeeps, cars, bus, and trucks were prevalent and these modes are still popularly to this day.

Ilocos Sur's Vigan City was enlisted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as one of the best-preserved heritage sites in 1999 and entitled as one of the Seven New Wonder Cities of the World. It is on this note that the researcher has decided to develop Buk CaTrike, a booking application for Vigan calesas and tricycles.

The researcher intends to determine the quality evaluation of the Buk CaTrike application using the ISO 25010:2011 Framework, as perceived by various stakeholders, specifically the kutseros, tricycle drivers, commuters and tourist.

Furthermore, the researcher made use of descriptive and software development design in order to gather information needed to test the hypothesis or answer the questions concerning in developing the Buk CaTrike: A Mobile Application Analyzer for Metro Vigan, the Interaction Design Model as Systems Development Life Cycle (SDLC) as a guide in the development of the application.

### ***Index Terms:--***

Booking Application, Mobile Application Analyzer, Transportation

## Assistive Arduino Smart Blind Cane for the Visually Impaired Person

**Israel Carino**, Jose Rizal University

**Rhonnell S. Paculan**, University of Makati

### **Abstract:--**

This project is created in order to help and provide assistance to the visually impaired, mainly in giving an easier way of navigating and avoiding obstacles for the blind person by this Arduino application called as “Assistive Arduino Smart Blind Cane for the Visually Impaired Person”. The Project Scope are (1) The cane can detect flat obstacles (2) The Cane has 3 ultra-sonic sensors that can detect from .5- 5 meters (3) The Cane has Voice Navigation System (4) The Cane has vibration motor to alert the visually impair physically (5) The Cane had a built in potentiometer for distance adjustment from 0 – 3 meters and (6) The Cane has 2200mah rechargeable battery.

The Test Driven Methodology is the process used to gather and analyze data needed to answer the research questions guiding this study. Strive for clarity and accuracy when describing each step of the methods used in conducting research and in developing the prototype the TDM is quickly adopted by agile software for developing of application codes that includes database. These are the 3 Phases of TDM RED PHASE (trial and error), BLUE PHASE (search for bugs and errors) and the GREEN PHASE (passes the test and ready to propose)

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 – seven (77) respondents composed of five (5) experts and seventy- two (72) non-experts. The experts are Visual impaired while the non-experts are the random people. And as the result of overall mean 4.14 gives the general interpretation that the study is accepted. This is the result of the mean scores respondents from different criteria such as Efficiency, Functionality, Usability, Reliability, and Accuracy. The average mean ratings of possible users both for experts and non-experts in Blind Cane are from the range 4.50 to 5.00 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 conduct more tests in order to improve the efficiency and in order to identify the possible enhancement of the functionality and to conduct an in-depth study whether the project can be integrated to other existing project related to tracking.

### **Keywords:**

Arduino , Smart Blind Cane, Visually Impaired Person

Predicting the Relationship between Parent-Teaching Activities and Emergent Literacy in Preschool Children of Oxford Louise Academy of Dasmariñas Using a Correlation and Clustering Analysis: A Data Mining Approach

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**Ma. Micah R. Encarnacion**, De La Salle University-Dasmariñas

**Dr. Maryli F. Rosas**, De La Salle University-Dasmariñas

***Abstract:--***

Generally, children's language development lies in the foundation for their literacy development, though it is difficult for preschool teachers alone to consistently engage in the individual interactions necessary to boost children's language skills. Given that parents are their children's first teachers, it is imperative to consider how parents can help improve their children's language and emergent literacy development prior to formal schooling.

The purpose of this study was to determine the relationship of the parent's intervention on the emergent preschool children student of Oxford Louise Academy of Dasmariñas in relation with teaching activities for emergent literacy by conducting an assessment survey form out of 31 out of 54 samples. And to predict the students need to undergo a summer class based on the teacher's evaluation prior to child learning capabilities. This paper concentrates primarily to the application of the data mining method in area of higher education, in which such methods have not been applied yet. In addition, a model, useful for strategic planning of additional mechanisms to improve the efficiency of studying, is also suggested.

***Keywords:--***

Preschool, emergent literacy, data mining, correlation, clustering

## Fuzzy Logic: A Technique for Assessing Students' Learning Performance

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**Dr. Maryli F. Rosas**, Faculty, Computer Studies Department, De La Salle University, Dasmaringas

***Abstract:--***

Students Performance plays significant role in the learning assessments of students. It is important for the faculty members to know the type of their learners. With this, the researchers aimed to evaluate and identify the impact of student performance using the fuzzy inference system. This study focuses on students who were taking up Bachelor of Science in Information Technology at De La Salle University - Dasmaringas. The students' performance depends on exam results both in lecture and laboratory classes; and it is evaluated as success or failure. By applying a fuzzy logic approach, the input will analyze to gain the final output. This paper also describes the fuzzy logic basic concepts applied in evaluating students' performance. Forty students took part for the statistical course considered as study samples. Fuzzification of exam results was carried out using input variables and their membership functions of fuzzy logic system. As a result, the researchers have come up that the students perform well in laboratory exam than in lecture examination.

***Keyword:--***

Fuzzy logic, triangular membership function, students' performance, fuzzy sets theory, defuzzification method.

## Identifying Drivers of m-Commerce Adoption by Indian Youth using Technology Acceptance Model

**Joydeep Biswas**, Assistant Professor, KIIT School of Management, KIIT Deemed to be University, India

**Surya Narayan Mishra**, Assistant Professor, KIIT School of Management, KIIT Deemed to be University, India

***Abstract:--***

Technology Acceptance Model (TAM) has been used to predict adoption of technology in various contexts. This study was done to discover the critical factors leading to adoption of mobile commerce by applying TAM. The research has incorporated additional variables of Hedonic Motivation, Subjective Norm, Perceived Risk and Trust which are postulated as determinants of user acceptance along with Perceived Usefulness and Perceived Ease of Use, provided in TAM. The study is done in India where there are large numbers of mobile subscribers (1033 million) and mobile commerce is expected to grow at Compound Annual Growth Rate of 55%. A survey collected data related to mobile commerce behavior and demographic profiles of respondents. Exploratory factor analysis was applied and then regression was conducted on reduced statements. Results indicated that Perceived Usefulness, Perceived Ease of Use and Subjective Norm have a significant relationship with Attitude towards m-commerce. Perceived Usefulness also has a positive impact on Intention to Use m-commerce. These results further confirm validity of TAM in predicting consumer acceptance of technology. Amongst the three Hedonic Motivation factors, Pleasure influenced intention to use m-commerce significantly while Dominance and Arousal did not impact the user intention significantly. Finally, Subjective Norm, Perceived Risk and Trust did not significantly affect Intention to Use m-commerce.

## **Sugeno –Based Fuzzy Logic Evaluation on the Effect of Weather in Coconut Scale Insect Infestation**

**Juliet O. Niega**, Professor, Computer science Engineering, University of Perpetual Help System DALTA, Calamba Campus, Philippines

***Abstract:--***

The purpose of this study is to evaluate the significant influence of weather in Coconut Scale Insect (CSI) Infestation happened in Batangas, Philippines using the Fuzzy logic approach. The CSI and weather historical data covering the years of 2012-2014 were utilized in the study. The weather parameters used are temperature, relative humidity, and wind speed. Fuzzy logic applying the Sugeno fuzzy inference system (FIS) in Matlab was used to simulate the effect of each weather parameters in the infestation. The developed FIS was comprised of the application of triangular membership function, formulation of 27 If-Then rules, and the center of gravity for the defuzzification process. The developed system was evaluated and tested by generating 100 data samples. These results were compared with the actual data of infestation, and the zero (0) value of true error was computed. The results from the developed system verified the findings of the Philippine Coconut Authority (PCA) and several experts and coconut farmers, that weather is the foremost reason for the CSI infestation.

***Keywords:--***

Coconut Scale Insect, infestation, weather parameters, fuzzy logic, Sugeno fuzzy inference system, defuzzification



## **An Empirical Analysis on E- Retail Service Quality Measuring 3PL in Supply Chain, E-SERVQUAL, and E-RSQUAL**

**Pavan Praharshith Rapoor**, MBA, School of Management, MAHE

**Kavitha T C**, Associate Professor, School of Management, MAHE

***Abstract:--***

Electronic commerce brings huge business opportunities and revenue growth to companies like e- retailers, mainly due to its convenient, interactive, lower costs and high degree of customization and personalization to their customers. With respect to logistics outsourcing, online shopping takes place in the chain consisting of the third party logistics providers, e-retailer, and the customer, which represents a service triad. Since, the delivery service is provided by the third party logistics (3PL) service providers, the satisfaction level of the end customers depends on the combination of both product delivery service and e-retailers service. Therefore, the level of service quality of product delivery service providers is vital to the e-retailers. The operations in logistics plays a critical role in the success of e-retailer's service performance. The study proposes a research model that integrates both the e-service quality, e-recovery service quality, and the logistic service quality that are provided by the e-retailers, which furthers influences both customer satisfaction and loyalty. The service quality dimensions provided by the e-retailer included efficiency, system availability, privacy and fulfillment. The logistic service dimensions included order condition, order accuracy and timeliness. Further, the recovery service quality involved contact, compensation, and responsiveness. The constructs developed in the research model were tested for validity and reliability. The outcome of the data analysis, with the sample size of 350, concludes that e-service quality strongly influences customer satisfaction and customer loyalty when using online retail websites. Similarly, when customer satisfaction is achieved it also has a strong relationship on customer loyalty. The outcome of the analysis also evaluated that e-service recovery quality has a strong influence on customer satisfaction. The relationship between logistic service quality and customer satisfaction and customer loyalty are strongly significant, than the e-service quality and e-recovery service quality.

***Keywords:—***

3PL, Logistics Service Quality, E-Service Quality, E-Service Recovery Quality, Customer Satisfaction, and Customer Loyalty

## Log-Linear Model of Cardiovascular (CVD) Patients Data in Jigme Dorji Wangchuk National Referral Hospital, Bhutan

**Lhamo**, Department of Mathematics, Faculty of Science, Mahidol University, Bangkok, Thailand

**Suntaree Unhapipat**, Centre of Excellence in Mathematics, CHE Bangkok, Thailand

**Abstract:--**

Cardiovascular disease (CVD) is one amongst many non-communicable diseases which is world's leading cause of death. Developing country like Bhutan encounters extensive challenges in combating such deadly disease for being lately exposed to an advanced medical facilities.

The log-linear model is used to study the associations between variables with the good purpose in advocating risk factors of CVD to public. The total of 5463 CVD patients' observations from the year 2006 to 2016 availed from Jigme Dorji Wangchuk National Referral Hospital (JDWNRH) is used to carry out the study. We figure out the associations between variables through independence test based on Chi-square test and Cramer's V statistics. Associated variables with highest Cramer's V were considered as significant at the level of p-value which obtain estimate parameters, expected frequencies and standard residuals using two dimensional log-linear models.

**Keywords:--**

Clinical Data/ Cramer's V/Chi-Square/ Heart Disease / Log-Linear Model

## Exploratory Study Using Bacteria (*Bacillus Subtilis*) As A Self-Healing Concrete: A Basis For Strengthening Infrastructure In The Philippine Setting

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**Montecalvo, Marlou A**, Student, Civil Engineering / University of Perpetual Help System Dalta Calamba Campus, Philippines

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### ***Abstract:--***

This research shows that the use of bacteria *Bacillus Subtilis* is fruitful for construction of durable infrastructures and apply self-healing concrete as a method for crack control to enhance service life in concrete structure. In this paper, the technique Microbiologically Induced Calcite Precipitation (MICP) is adopted. It is the use of *Bacillus Subtilis* along with its nutrients which is the sodium bicarbonate ( $\text{NaHCO}_3$ ), ammonium carbonate ( $\text{NH}_4\text{Cl}$ ), and calcium chloride dehydrate ( $\text{CaCl}_2$ ) and nutrient broth. The mixing proportion used is 1:2 ½:5:0.45 along with 30 ml liquid form of *Bacillus Subtilis* with the cell concentration of  $10^5$  cells/ml. The strength of concrete mix is evaluated by conducting test on 150mm x 150mm x 150mm cube for compressive strength test, 6in x 12in cylindrical mold for split tensile strength test, 21in x 6in x 6in rectangular beams for flexural strength text and 3in x 6in for water absorption test. 3 specimens each test. The specimen used for healing is 4in x 2in x 2in which is intentionally cracked. The study shows that there is a significant increase in the strength of concrete added with bacteria compared to conventional concrete and therefore calcium carbonate precipitation is visible after 3-4 weeks in micro cracks.

## Portable Solar Powered Flood Water Purifier System

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**Balcueva, Blizelda M**, University of Perpetual Help System Dalta, Philippines

**Pinpin III, Juanito Carlo A**, University of Perpetual Help System Dalta, Philippines

**Mosquera, Rizal M**, University of Perpetual Help System Dalta, Philippines

### **Abstract:--**

During heavy typhoons, an adapted remote community area in Calamba City, Laguna, Philippines suffers from lack of drinking water, for they only rely on low lying deepwell that may be contaminated by flood water during heavy storm surge as the community were proximate to Laguna Lake. This study aimed to provide an ideal potable water during heavy drinking water shortage in a calamity scenario at Sitio Runggot, Brgy. Lecheria, Calamba City, Laguna and to stand for the waste reproduction by converting liquid water wastes into a safe drinking water. This research established a Solar Powered Portable Water Purifier System that its integrated components can convert flood water into clean drinking water. This water purifier system can purify and eliminate most types of bacteria and microorganisms on a data gathered specific location for water purification. The combination of 5 technologized filtration industrial membranes made up this study possible: Industrial Reverse Osmosis, 7 – pore Ultrafiltration, Sediment Filter (Fine), Carbon Filter and Ultraviolet Sterilizer. The designed portable prototype was modified to its maximum portability state that will allow solar energy to be harnessed and used all throughout its whole process as the source of power. Several tests from different locations were collected and settled within 7, 14, 21, 28 and 35 days for the consideration of flood water stagnancy and possible microbial growth factor within the time span. This allowed the researchers to determine and set a high bar of standard and category that will be allowed to subject for water purification using the flood water purifier system.

The study resulted with a concrete finding of having an acceptable value in terms of pH, Conductivity, Coliform count, Silica and Lead content, Color (Turbidity) and Alkalinity physical water quality tests conducted and analyzed by an accredited water laboratory in the philippines and a maximum allowable flood water stagnancy of 35 days.

### **Keywords:--**

Water purification, Water filtration systems, Antibacterial activity

## Returning Green through Engineering: Utilization of Monte Carlo simulation in Assessing Potential Lifetime Value of Conventional and Sustainable Building

**Mark Kenneth M. Lindo**, Masteral Student, Mapua University

**Dante Silva**, Professor, Mapua University

***Abstract:--***

Entering into the age of information where you can quickly access almost anything that happens globally has proven itself beneficial. This study was conducted to assess the performance of conventional buildings and sustainable or green buildings in terms of their potential lifetime value. By analyzing the standard specification of green buildings, people can have a better understanding of this innovation. Data gathered through statistics, literature review, and evaluation from companies, will determine the quantitative information for the creation of the Mathematical Model by the use of Monte Carlo simulation. The Monte Carlo simulation was executed using a software to provide histograms. In order to create scenarios to produce various results, a What-If analysis was also conducted. Consequently, evaluation and analysis of the costs of conventional and green building, gave way for the researcher to make a conclusion with regards to their efficiency. The validity of the results was determined based on anecdotal information by professionals who practiced building sustainable infrastructure. Nevertheless, this research serves as a pilot study to identify the breakeven points between conventional and green buildings. Furthermore, the researcher believes that a deeper enhancement of the data might yield to more accurate results.

***Keywords:--***

Green building, conventional building, Mathematical Model, Monte Carlo

## **Brand Image Transfer through Event Sponsorship the Case Of Habeco Sponsorship For Happy Colour Run Event**

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**Nguyen Ngoc Quang**, Ph.D, Faculty of Marketing, National Economics University, Vietnam

**Vu Tri Dung**, French-Vietnamese Center for Management Education (CFVG), National Economics University, Vietnam

### ***Abstract:--***

This article focuses on brand image transfer through event sponsorship. The brand image and event image, however, can be further divided into three constructs, which are functional, symbolic and experiential. Having reviewed the literatures and arranged the hypotheses, a research case of Happy Colour Run and Habeco. The data has been gathered by distributing the questionnaire to participants of Happy Colour Run in Hanoi Capital, Ho Chi Minh city, and Da nang city. Research results show that event image has a positive impact on the sponsor's brand image on all three constructs, which are functional, symbolic, and experiential. Besides, Involvement with the sponsored event is also a key variable in the brand image transfer through sponsorship. It is of course a strong determinant of exposure to the event but also a positive influencer of the sponsored image. The article also gives some implications for managers and suggestions for future studies .

### ***Keywords:--***

Event sponsorship, event image, brand image

## Virtual Reality Fear Treatment

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**Keaton Martin M. Varlez**, Chaos Game Lab

**Dan Jayson Panergo**, Chaos Game Lab

### ***Abstract:--***

Virtual Reality is a simulated computer generated experience taking place within a virtual environment that incorporates mainly auditory and visual senses, motion, and perception or the ability to grasp something. In this study and development, VR will be used as a tool to aid psychologists and psychiatrists in assessing and treating the different fear levels of patients. VR will simulate different fear scenarios to help patients get used to what they are afraid of, aka “facing your fear” simulator. This study will cover the flooding and gradual exposure method of treating fear and phobia. With the help of VR, different scenarios can be recreated with cheaper costs and safer risks.

The experience is made up of 3Dimensional images and animations, and actual video footages that simulate a scenario that triggers s patient’s fear. The scenarios are loaded in a virtual reality headset and the process is monitored by a psychiatrist. Scenarios can be customized based on the requirements and fear level of a patient.

A prototype of the project is built on platforms such as, HTC Vive, and Mobile VR.

The prototype was evaluated by fifty (50) respondents composed of five (5) experts and forty five (45) non-experts. The experts are psychologists and psychiatrists, while the non-experts are from animation and game development industry. And as the result of overall mean 4.26 gives the general interpretation that the study is accepted. This is the result of the mean scores respondents from different criteria such as Efficiency, Functionality, Usability, Reliability, Accuracy, and Immersion.

As a Conclusion, Virtual Reality Fear Treatment is a unique and customizable experience that can be used as an aid in treating fear and anxiety as a tool in the exposure therapy.

As a Recommendation of the evaluators give based on the analysis of the project are: to conduct more tests in order to improve the efficiency and in order to identify the possible enhancement of the functionality and to conduct an in-depth study whether the project can be integrated to other existing project related to psychological treatments and virtual reality.

### ***Keywords:--***

Virtual Reality, Fear Treatment, Exposure Therapy

## Design and Development of Banana Stem Decorticator with Wringer

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**Ma. Arianne N. Pabularcon**, Student College of Engineering Department of Computer Engineering, Polytechnic University of the Philippines

**Kathleen Meriel D. Ortega**, Student College of Engineering Department of Computer Engineering, Polytechnic University of the Philippines

**Ralph Lorenz R. Rafallo**, Student College of Engineering Department of Computer Engineering, Polytechnic University of the Philippines

### **Abstract:--**

The demand for fiber as raw materials to make various products is increasing. It can be extracted from the seed, leaves, fruits and stem of a plant. Banana is one of the leading fruits grown in the Philippines. It provides food and a source of industrial raw materials. Aside from the fruit, banana blossom and its trunk pith that can be eaten, natural fiber can be extracted in the trunk (pseudo-stem) that is usually thrown as waste after the harvest season. The study aims to develop a machine that can extract fiber in a pseudo-stem which can be used in handicrafts, ropes, clothing and other products. A prototype was designed, developed and was tested for banana trunk fiber extraction. During the extraction process, the stem which is 45.72 cm in length and 1 cm thickness is fed manually in the prototype machine. Fiber is extracted from the pseudo-stem using a decortication process where a roller with scratched surface is compressed into a stationary bar that will crushed and scraped the trunk. During the decortication process the banana stem is also undergoing the wringing process wherein the fiber loses its water content. The extracted fiber is already dried and can be used in making domestic products. However, to have a good quality fiber, after the process, it should be washed and dried. Results indicated that the recovery rate of the banana fiber has increase by 2-3% in an average of 35.5 cm pseudo-stem. The device has a great potential and should be used for the growing fiber industry in the country.

### **Keywords:--**

Pseudo stem, fiber, handicrafts, decortication, wringing



## Design of Stable Slopes in Surface Excavations and Mines Vi-A-Vis Modified Slope Mass Rating-Case Studies

**Dr. Singam Jayanthu**, Professor, Mining Engineering Department, NIT Rourkela, Odisha

***Abstract:--***

Know-a-days, massive slope failures are noticed in various parts of the world in surface excavations including natural slopes/cut slopes, and are most commonly accompanied by significant loss of structures and manpower. Many approaches such as numerical modeling, analytical models, probabilistic analysis, rock mass/slope mass rating are generally used for design of stable slopes. The Slope Mass Rating (SMR) system is an extension of the RMR(Rock Mass Rating) approach, for specific application to rock slopes. This paper presents the application of SMR to ten Indian limestone, manganese, coal and copper mines to verify its suitability. As part a of Science and Technology project sponsored by Ministry of Coal & Mines, Govt. of India the results were critically examined keeping in view the actual field conditions. It was found that SMR predictions are not in consequence with field conditions at the mines studied. This calls for modification to the SMR system. Therefore a modified slope mass rating (MSMR) system based on studies in ten mines was developed. From application of MSMR in the above mines it was established that MSMR of 50 and above indicates stable slopes, and the value below 40 indicates instability. When the MSMR was used for the actual cases, the designed bench slope angles were coming within 10% variation as compared to the results of numerical / limit equilibrium analyses.

## Strategic Forest Management Using Decision Tree

**Richard C. Arruejo**, Instructor I, University of Northern Philippines and Saint Paul University Philippines, Tuguegarao

***Abstract:--***

Decision-making of the top-level management requires accuracy and irrevocability. Most organizations today already use a data-warehouse for a data-mining strategy to extract data based from the historical and transactional data to create meaningful decisions. This strategy creates an imperative business perspective to direct the organization's future.

This research is a development of a forest management for the Department of Environment and Natural Resources- Provincial Office of Abra. The system integrated the use of an ID3 decision tree algorithm data mining.

ID3 decision tree algorithm is used for the data mining technique on the identification of the suitable species of trees to be planted according to location, elevation, soil type and tolerance to the different diseases and pests. The system also helped the PENRO in the determination of renewable of the People's Organizations (POs). People's Organizations or the Non-Government Organizations (NGOs) are responsible in managing the forests. The Unmanned Aerial Vehicle (UAV) is also integrated for the purpose of monitoring of trees in the forest.

RapidMiner Version 9.2 was used for knowledge discovery from data (KDD). This also helped the researcher to get the decision-making process for the development of the Forest management system.

## **A Machine Learning Approach for Classifying Speech Detection to Filipino and Korean Language**

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**Jovele Belmonte Baccay**, Computer Science Department, De La Salle University, Dasmariñas, Philippines

***Abstract:--***

Everybody speak it owns language, these are essential for communication among the member of the society, identity, and races can classify in its group. A diversity of speech has a different method and form and that is the natural way of speaking entailing self-identity. This paper presents the classification of Filipino and Korean Speech Assessment based on various machine learning algorithm. The data are trained using various algorithms such as Naive Bayes, K-Means, Support Vector Machine and MultiLayer Perceptron. The dataset in recorded voices assesses and evaluate with the said classifiers. There are 100 respondents and collect recorded audios. Dataset is split into a half 50 came from Filipino and 50 from Korean. The assessment and evaluation are measured through correctness and accuracy. Based on the result shown in figures MultiLayer Perceptron (MLP) got the highest and best performance with the 99.49%, followed by Support Vector Machine (SVM) with 98.6%, third in rank is the Naive Bayes garnering 97.74 % and K-means falls in the lowest place with 94.78%.

## The convergence between tradition and modernity and between innovative design and the history of culture- Irbid city as a case study

**Samia Ayyoub Salim Ayyoub**, Faculty of Architecture Engineering Department Yarmouk University, Irbid, Jordan

***Abstract:--***

The aim of this paper is to present the reader with the practices, the challenges and the benefits of the changing patterns in urban planning.

There is a need to implement measures that focus on the population's needs, and to merge the potential of urban planning and the townspeople's memories in response to the phenomenon of the redevelopment of downtown. The opportunity of the insertion of municipal administrators, developers, designers and most importantly townspeople in the operational process ensures the commitment to arising outcomes and enhances the potential of urban planning. Also, the process should have a restricted number of clear goals to avoid losing the space potential and the connections to the memories of the city's residents..

Redeveloping cities' downtowns have been a critical issue to tackle as the need arises to revive and modernize the old parts of the cities, usually ending with the destruction of the history and the place memories in those parts leading to the loss of its connection with the city's residents and erasing the spirit of the city piece by piece. One example of such approaches is observed on the reconstruction of Beirut, Lebanon Central District (BCD), starting from 1991 and the reconstruction of Al Abdali which is one of the most strategic and older locations in the city of Amman, Jordan in 2004

For this reason, this paper is devoted to new information, which can form the basis for the urban development. And set theoretical ground rules for cooperation with the public and allowing for their participation in the urban development process.

***Keywords:--***

Urban Design; Heritage; economic integration; urban design; urban perception; urban planning, memory of the space

## Statistical Model for Personal Loan Prediction in Bhutan

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**Suntaree Unhapipat**, Centre of Excellence in Mathematics, CHE Bangkok, Thailand

***Abstract:--***

Banking plays a vital role in functioning the economy of a country. One of the major role of banks is to provide credits. Time series models help to predict and forecast the number of future credit borrowers, which would help the concern authority to plan and work accordingly. In this study Box-Jenkins approach were used to model and forecast the number of personal loan consumers at Bhutan Development Bank in Bhutan. The study shows that ARIMA(2,1,2) works well in forecasting future number of personal loan borrowers. The best fitted models were tested based on forecast accuracy test such as Root Mean Square Error (RMSE) and Mean Absolute Error (MAE).

***Keyword:--***

Box-Jenkins, Loan, Bayesian Information Criterion, Banking

## A research on Parents decision of buying toys for children in Hanoi

**Vu Huy Thong**, National Economics University, Vietnam

**Vu Thuy Duong**, National Economics University, Vietnam

**Do Thi Phi Hoai**, Finance Academy, Vietnam

**Do Khac Huong**, National Economics University, Vietnam

### ***Abstract:--***

Recently, Vietnam's economy has grown enormously. Together with the development in the fields of science, economics, information technology, etc., education and culture also achieve great development. The development of society improves the living standard and children's caring becoming more and more important because children are the priority and core target in the social development objectives.

However, the toy industry in Vietnam seems to be neglected although the industry. Up to now, there have been rare studies assessing the situation of children's toy consumption in the country as well as in Hanoi. For that reason, this topic of research is to understand the behavior of customers on children's toys in Hanoi.

Preliminary research was conducted by qualitative research through opinion poll and group discussion to find out five most influencing factors that affect the toy's purchasing decision of parents. Some parents' groups of under 15-year-old-children in Hanoi were selected for gathering opinion by taking the first-round survey. Then, the quantity of 200 forms were distributed equally (applying non-probability sampling method) among 4 main/central districts in Hanoi (50 forms per district). After collecting questionnaires, the data was encoded, analyzed and processed by SPSS.20 software.

This paper to explore and verify the main factors that led to parents' choice of toy products, which included children's impact assessments – as children are the primary users of this product - to their parents' buying decision in order to provide productive approach, suggestions and recommendations to Vietnam children's toy market.

Assess the extent to which market selection and mode of entry choices contribute to the success of international marketing

**Ako MOHAMMED Tofiq**, University of Halabja

**Abstract:--**

The organisations engaging in worldwide trade are made one of the significant decisions is the intercontinental market selection. So far, in spite of which significance, many organizations are taking the approaches in identifying profitable markets in the international context that are often based on ad-hoc decisions and intuition, Instead of an Officially attempt of competition the organization with suitable foreign target markets. This paper will discuss some of the salient issues and the Assignment is to Assess the extent to which market selection and mode of entry choices contribute to the success of international marketing, drawing from the available and relevant Assess the extent to which market selection and mode of entry choices contribute to international marketing. In this paper, several foreign market entry modes are discussed which is related to the following question: what are the issues and methodologies involved in the selection and mode of entry of internal markets? Also which of them has stronger choices contribute to the success of international marketing? The discussion will be followed by a summary and conclusion.

**Keywords:--**

Market selection, international marketing, foreign target markets

## A Comprehensive Study of QoS Models, Frameworks & Protocols in MANETs

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**Iqra Tariq**, Department of Computer Science and Information Technology, University of Lahore

**Muhammad Aadil Butt**, Department of Computer Science and Information Technology, University of Lahore

**Maimoona Shahid**, Department of Computer Science and Information Technology, University of Lahore

### ***Abstract:--***

Mobile ad hoc networks (MANETs) are a combination of mobile nodes that are specifically configured and are connected by wireless connections automatically according to the routing protocol. A mobile ad hoc network (MANET) is a combination of different mobile nodes, which dynamically form a temporary network, without using any infrastructure such as wireless access points or base stations [1,10,13]. Quality of service guarantees is much more difficult, and very important in mobile ad hoc networks. There are many interesting applications such as multimedia services, health care, and disaster recovery and other support if they can support quality of service (QoS) for MANETs. But the quality of service providing in MANETs is very difficult problem in comparison to wired IP networks [14]. This is because certain node mobility, wireless multi-hop communication, contention for battery power, range of mobile devices and wireless channel, as well as the lack of a central coordinating authority. Therefore, the design of an efficient and reliable routing and quality of service support for such applications is a challenging task. This paper evaluates the performance analysis of some protocols and models of QoS.



## Systematic review of body image: Socio-cultural, Intrapersonal and Marketing constructs

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**Dr. Zainul Din Awang**, Assistant Dean, UniSZA Malaysia

**Dr. Raja Irfan Sabir**, Associate Professor, UCP Pakistan

**Ayesha Nawal**, PhD Scholar, Uni SZA, Malaysia

**Hamid Mehmood**, PhD Scholar, Uni SZA, Malaysia

***Abstract:--***

Systemic review measure the effect of socio-cultural, intrapersonal and marketing constructs on female body image concerns. Present applied systemic review to clarify the effects of deformational models from varies fields which lead females to feel dissatisfied with their own body. Part I of paper review the extensive literature related to socio-cultural variables (peer, parents, media), part II review literature related to intrapersonal variables (self concept, social comparison and internalization of thin ideal beauty) as well marketing variables (fashion magazines, advertisement and mass media). Researcher examine how should these variables cause body image issue in females. It was proved from findings that socio-cultural, intrapersonal and marketing constructs are strong predictor of body image.

## Strategy Development for Wind Turbines NACA 6412 Decision making

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**Nur Candra Dana Agusti**, Politeknik Negeri Malang, Indonesia

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### ***Abstract:--***

The increasing of the population impact to the increasing of the energy demand. Indonesian non-renewable energy and the renewable energy demand increased faster but the energy supply is decreased, and the gap between demand and supply of energy is wider and wider. The government of Indonesia tries to shift and to look for an alternative energy to prevent future scarcity of energy resources. One alternative energy used is to utilize wind energy. The wind energy is no pollution, cheaper, and easier to maintain it. Wind energy potential in Indonesia is more than 90 GB and the production electric energy using wind energy has not been explored optimally. The research objective is to analyze the effect between the wind speed and number of turbines blades and the electric power generated by Vertical Axis Wind Turbine (VAWT) using NACA 6412. VAWT used 4, 5, and 6 unit turbine blades and the variation wind speed is 3.0 till 6.0 meter per second. The research variables are variation of wind speed and number of turbines blades, and the electric power is generated by VAWT. This research applies quantitative method is experimental design using two way classification and data simulation. The finding of this research reveals is 1). null hypothesis 1 is rejected, it is means that there is a difference effect between variation of wind speed to the electric generated power by VAWT. 2) The null hypothesis 2 (alpha 15 degrees) is rejected, it is means that there is a difference effect between variation of turbine blades to the electric generated power by VAWT. 3) The null hypothesis 3 is is rejected, it is means that there is a difference effect between interaction of variation of wind speed and variation of turbine blades to the electric generated power by VAWT.

### ***Keywords:--***

VAWT, Simulation, Energy, wind energy, strategic, turbine blades, NACA 6412

## IceWater: 3D Mobile Game

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### ***Abstract:--***

“IceWater” is a 3D multiplayer game. In multiplayer, the game is played by a maximum of six players and a minimum of three. The game can be also played in single player.

The concept of the game is adapted to the classic Filipino game “Ice Water”. It has similar mechanics, except the researches added more features to the game. It is also partly like a tagging game, but it does not include the freezing part. The game has difficulty level of Easy, Medium and Hard. Each stage has three levels.

“IceWater” is an “Action-Multiplayer” game. Complete challenges by fighting with enemies and use a character of the player’s choice to represent yourself and jump into the action all together with many players. The target audience of this 3D Multiplayer Game “IceWater” are those children starting at the age of twelve years old and above. Simply because, they are known as the Gen Z. The reason for choosing them is because they are in the era of “techy” generation where most of the kids won’t go outside to play. In this way we want them to learn and appreciate how it feels like to play a classic Filipino game even though they are just playing with their mobile devices. The Theme of the “IceWater” is more of low poly type with different kind of ambience and entertaining design to make it more appealing to children.

The goal of the proponents for this thesis is to promote the culture of traditional Filipino games and to exhibit the fun of them to the children of today’s generation.

## Deterrorize: 3D Mobile Game

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**Caayao, Jayvee A**, Bachelor of Science in Information Technology, De La Salle University, Dasmariñas

**Monzon, Simon John C**, Bachelor of Science in Information Technology, De La Salle University, Dasmariñas

***Abstract:--***

Deterrorize: 3D Mobile Game is a mobile game/application for Android mobile platform. This game is about terminating the evil within the terrorists that are invading different parts of the Philippines.

The game's main concept was inspired by the recent event that happened here in the Philippines. A place in Lanao Del Sur called Marawi was invaded by a terrorist group who claimed to be associated with Islamic State of Iraq and Syria (ISIS).

Deterrorize is a game that instead of killing the bad guys, the weapons of the protagonist make the bad guys, good. The weapon removes the evil thoughts and personality from the terrorists and increases the goodness within them, helping them turn over a new leaf. As the level go up, the number of terrorists increases, and their evilness are also heightened. Obstacles will arise upon each level, making it harder for the user to complete each level.

This project aims to create an Android mobile game that will tell the user to turn the terrorists into good guys instead of just killing them. This promotes non-violence methods upon dealing with people. It emphasizes the peaceful way of dealing with things to avoid resorting to violence that leads us to nothing.

## **iRize: Rice Production Management Decision Support System Using Decision Tree Algorithm**

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**Amando P. Singun Jr**, Higher College of Technology, Muscat, Oman

### ***Abstract:--***

Agriculture has been one of the most important economic activities of man and is considered to be one of the largest and most significant industries in the world. This is perhaps with the fact that agriculture industry provides the basic necessities of man, particularly sustainable foods.

The integration of information technology in the field of agriculture facilitates and improves the efficiency of farmers' productivity by providing them timely data inputs for decision making. The need for them to have always updated with the latest information and issues regarding farming is necessary for them to become effective.

This study aimed to design and develop a decision support system for the rice growers of the first district of Ilocos Sur. The proposed iRize: Rice Production Management Decision Support System using Decision Tree Algorithm aims to guide the rice growers in their farming activities particularly on pest management and on making decisions concerning to rice farming.

The researcher adopted the Rapid Application Development software process as a methodology in the development of the system. The model consists of four phases, namely: Requirements Planning, User Design, Construction, and Cutover. Series of interviews were conducted to the agriculturist and rice growers to determine the problems and challenges they encounter during cropping period. Data were gathered through questionnaires.

### ***Keywords:--***

Decision Support System, Rice, Rapid Application Development

## Android Application: PlaceDat-local place finder

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**Alyssa Jane S. Irarum**, Student, De La Salle University- Dasmariñas, Cavite, Philippines

### ***Abstract:--***

“It’s more fun in the Philippines!” as the saying goes, Philippines is such an amazing and beautiful country, from its incredible places like paradise islands, beautiful nature and mouth-watering foods, right through its lovely local spots. In addition, it is an affordable country to travel; you will get great value for your money. And since the world has become more and more mobilized, many developers create applications that would capture the attention of the users, and would be very useful. PlaceDat is an application that shows the different places in the Philippines specifically in Luzon area. It is not just the place, but it is categorized by the activity that can be done in specific place. It is a local place finder and travelling application that is on the go for Filipinos, and for tourists who want to explore the Philippines specifically the rich regions in Luzon.

With the use of Agile methodology, the researchers were able to develop an application using Android Studio platform. The Java programming language makes the application more efficient and user-friendly.

The application’s software quality was evaluated with an average rating of 4.62 where 5 is the highest scale based on the ISO 9126-1.

**Synthesis, Structural, Morphological & Mechanical studies of Mg<sup>2+</sup> and Gd<sup>3+</sup> co-doped Ceria electrolyte system for LT-SOFC**

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**M Buchi Suresh**, Center for Ceramic Processing, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad, Andhra Pradesh, India

**B N Wani**, Chemistry Division, Bhabha Atomic Research Centre, Trombay, Mumbai, India

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**L.D.Jadhav**, Department of Physics, Raja ram College, Kolhapur, Maharashtra

**Abstract:--**

This paper reports the effect of Mg<sup>2+</sup> addition on the structural, micro structural & mechanical properties of Ce<sub>0.8</sub>Gd<sub>0.2</sub>O<sub>2-δ</sub>(GDC) electrolyte for low temperature solid oxide fuel cell application. The Mg<sup>2+</sup> (0, 0.5, 1 and 2 mol %) doped GDC solid electrolytes have been prepared by solid state method. The sintered densities of the samples are around 95%. XRD study reveals the cubic fluorite structure. The microstructure of the samples resulted into grain sizes in the range of 4.3 to 0.868 μm. Raman spectra also confirms the presence of GDC single phase. Mechanical properties of Mg doped GDC samples discussed.

**Keywords:--**

Conductivity, GDC electrolyte, impedance, ionic conductivity, activation energy

## Measuring the quality of banking services in Sulaimanyah by using SERVQUAL (The case of Cihan Islamic Bank)

**Mustafa Othman Alsaigh**, Cihan University Sulaimanyah

**Blesa Ibrahim**, Cihan University Sulaimanyah

***Abstract:--***

The objective of this study is to measure the customer satisfaction gap and to reveal the gap between the perceptions of Cihan Islamic Bank customers and their expectations for the level of services provided by the bank through a sample customer questionnaire. SERVQUAL was used to measure the quality of service after it was developed to suit Quality of service offered by Cihan. The difference between perceptions and expectations has been measured in the areas of equipment and facilities, reliability in handling, responsiveness, trust in handling and customer care.

The methodology of scientific research imposed that this study include addressing the quality of performance as an important option in this regard, which must be consistent with international standards and current systems with a bias towards the leadership and firmness.



## Der Großmann: A Survival Horror Game Using A\* Algorithm

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**Grace D. Caibog**, Student, De La Salle University – Dasmariñas, Cavite, Philippines

**Michael Roi M. Tubid**, Student, De La Salle University – Dasmariñas, Cavite, Philippines

**Sherry B. Naz**, Thesis Adviser, De La Salle University – Dasmariñas, Cavite, Philippines

***Abstract:--***

This game entitled, Der Großmann: A Survival Horror Game Using A\* Algorithm, was developed to bring entertainment to all gamers who are into interactive thrill and logical thinking. The development tools used for the game were Unity 3D for coding and animation, Autodesk Maya for designing the characters and settings, and other development applications necessary to make the game playable. The game was tested for quality of its performance using the ISO Model 9126-1 with the participation of high school and IT/CS students who were able to engage in the game firsthand. The outcome of the study was evaluated and assessed carefully resulting to a considerable and successful outcome.

## Security and Surveillance for human welfare

**Nishant**, Student, Department of Mechanical Engineering, Guru Govind Singh Indraprastha University, New Delhi

**Abstract:--**

**Problem-**Day to day problems have been arising , if we take the problems I saw in the hilly region of the Uttarakhand state of the India I was aimlessly sad, so I started doing research on their wire connectivity and network connectivity.

After watching those things continuously I came to conclusion that there are issues facing these were due to natural disaster, human and animal welfare. Either they were stolen or being damaged especially there solar plates and connectors.

**Solution-** I came up with the solution to develop a bio sensor identifying as a human being or the animal that will define the reaction of the security setup I will make for that that will be connected to a drone and the LED screen presenting the whole scenario.

## Analysis of Sentiment Analysis Techniques

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***Abstract:--***

Sentiment analysis is an application of natural language processing. It is a very popular field of research in text mining. It is also known as emotion extraction or opinion mining. The basic idea is to find the polarity of the text and classify it into positive, negative or neutral. To perform sentiment analysis, one has to perform various tasks like data preprocessing, sentiment classification, polarity assignment, aspect term extraction, feature extraction etc. This paper presents the survey of main approaches used for sentiment classification.

## Determining factors influencing on decision making by using logistic regression

**Dr. Obaid Mahmood Muhsin**, Professor, University of Kurdistan Hewlêr

**Dr. Hassan Mustafa Tabra**, Assistant Professor, University of Kurdistan Hewlêr

**Mustafa Othman Alsaigh**, Assistant Lecturer, University of Kurdistan Hewlêr

***Abstract:--***

The issue of decision making is one of the important issues, in administrative sciences because of its direct impact on individuals, communities and countries, as most of the problems that individuals, communities and countries are faced from making incorrect decisions. The development in management sciences and the uses of quantitative methods of treatment because of decisions are affected by a set of factors or variables. In this research we consider the variables or factors related to the superiority illusion and the level of ambition through the use of logistic regression technique to know the variables with the moral Influence in decision making and order according to their importance. Ten variables were collected by means of a questionnaire prepared for this purpose, a model was developed to predict the effect or non-effect of the decision on the environment and the result of the analysis showed that the factors influencing are ((X3) my decision making is based on rational reasons) (X4 - I discuss the decision to be taken collectively) (X7 seems to me life without hope)) and the correct classification rate of the model that was built was 81%.

## Linguini: Natural Language to SQL Queries Translation as a Conversation SaaS

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**Rudrangshu Nandi**, Department of Computer Science & Engineering, SRM IST, Chennai, India

***Abstract:--***

With the ever-increasing amount of world's information stored in relational model database system, it is imperative to have intelligent interfaces for interaction with that data. This should be done in such a way to allow even non-SQL users to interact with that data effectively by almost all sections of an organisation. Generating executable queries from users problem have been a long-standing problem, which has been gaining much momentum recently. Trivial systems use sequence to sequence models but their generalised nature doesn't seem to exploit the full structure of an SQL query. In this paper we explore and implement the existing state-of-the-art model for generating SQL from natural language question proposed by Xu et al.(2017), for the SELECT column and operator parts of the SQL Query along with a chatbot interface to return graphical insights for any non-technical user to understand the results easily.

## Automated painting system based on Arduino UNO

**Pranav Doshi**, SRM Institute of Science and Technology, India

**Neel Gupta**, SRM Institute of Science and Technology, India

***Abstract:--***

The primary aim of the project is to design, develop and implement Automatic Wall Painting Robot which helps to achieve low cost painting equipment. Despite the advances in robotics and its wide spreading applications, interior wall painting has shared little in research activities.

The painting chemicals can cause hazards to the human painters such as eye and respiratory system problems. Also the nature of painting procedure that requires repeated work and hand rising makes it boring, time and effort consuming.

There is a strong need for a mobile robot that can move to paint interior walls of residential buildings.

**Keywords:--**

Automated Painting

## Smart Mirror

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**Prasham Doshi**, Department of Computer Science Engineering, SRM Institute of Science and Technology, Chennai, Tamil Nadu

### ***Abstract:--***

Ambient Intelligence refers to electronic environment which is designed to be sensitive and responsive to human presence. Smart Mirror is such an embedded device which makes home environment an ambient intelligent environment. Internet of things (IoT) and Machine Learning (ML) are the most growing technologies. The Automation industries have IoT and ML as the base technologies. The proposed Smart Mirror designed and developed as a prototype interface naturally by sensing and being responsive with the real world without any other application required. Normal mirror is designed to act as a smart screen which while acting as a mirror performs as a smart screen. Information is illustrated on the mirror where customized data like time, date, weather, welcome message can be displayed. The interaction with mirror is done through facial recognition and authentication. Only on the presence of a person the pi-camera will be start capturing after a specified continuous interruption in IR sensor. The project includes image detection and authentication for multi-users making it convenient for use by multiple users. There is a direct interaction between the user and the device and no external help through mobile application or body sensors is required.

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

**Reymon M. Santiañez**, Instructor 1, Biliran Province State University (Bipsu)

***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



## Decision Support Infographics System for Disaster Risk Reduction and Management (DRRM) for Biliran province

**Reynold G. Bustillo**, Network Administrator, Biliran Province State University

***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.

## Development of a Flood Warning and Sensor Based Safety Device for Main Circuit Breaker with SMS Technology

**Frederick C. Biag II**, National University, Manila, Philippines

**Charles Laurence G. Esteves**, National University, Manila, Philippines

**Dreks Juroe L. Fernandez**, National University, Manila, Philippines

**Christian B. Gulane**, National University, Manila, Philippines

**John Gerald R. Mendoza**, National University, Manila, Philippines

**Amado Alexander Valentin**, National University, Manila, Philippines

**Rogelio B. Aniez Jr.**, National University, Manila, Philippines

### ***Abstract:--***

As today's technology progresses, the everyday life of people becomes easier. But, also, due to technology, the environment and the climate is developing from time to time. Since Metro Manila is decades old and the establishments in the area are as old as the place, the plans for the establishments have not considered the possible problems that people are encountering today, specifically, flood. One of the major threats during floods is electric shock and electrical system faults due to flood water. With this, the proponents aimed to develop a flood warning safety device that incorporates SMS technology and android system. Having this innovative add-on to the technology that can help the consumer monitor and manage the flood warning device through their smart phones.

The project entitled "Development of a Flood Warning and Sensor Based Safety Device for Main Circuit Breaker with SMS Technology" is a system that can monitor the level or presence of flood water through the use of moisture sensors. The study also features four (4) ways of monitoring and controlling the flood warning device. This includes the moisture sensor, the user-friendly switches, through the use of GSM Module and an android application (B4A).

The proponents conducted various experiments in different locations inside the university. Also, components are taken under serious repetitive simulation for the accuracy and reliability of the prototype and the study itself.

## Parallel Processing for Data Retrieval in Odoo ERP Reporting System

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**Dr. Siti Hafizah Binti Ab Hamid**, Faculty of Computer Science and Information Technology, University Malaya

**Dr. Mumtaz Begum Binti Peer Mustafa**, Faculty of Computer Science and Information Technology, University Malaya

### ***Abstract:--***

Reporting system in Enterprise Resource Planning (ERP) system plays an important role, as different information from different processes can be merged to generate reports. Management can use these reports for providing key value indicator for progress assessment and as well as identification of poor business performance, and formulate strategies to eliminate them. In businesses, the importance of information is measured by the value of the information and the time of processing this information. The longer it takes for data to be converted into meaningful information, the less value it has for the business, which has a direct impact on decisions making process and achievement of business goals.

In a recent decade, with the revolution of computer systems and applications, massive records of data are generated from the automated systems which have been involved into daily operations. Thus, the traditional data analysis, processing and storage technologies are not capable to store and process the large amount of data effectively.

Odoo framework, previously known as OpenERP, is the most commonly installed Open source ERP system worldwide. Most implemented Open source ERP systems such as Odoo are using Relational Database Management System (ORDMS). During the ERP system lifetime, the data amount increases resulting in a decrease in performance, as the relational database applies sequential data processing. This performance latency has an impact on concurrent user sessions, business processing, and report processing. Report processing time increasing while the amount of data is increasing due to data manipulation retrieving from the relational database, where the more data to be processed, the more time needs to generate a report. A new data storage system has been developed called NoSQL, which stands for “Not Only SQL or Non SQL systems”. NoSQL systems have been designed for large-scale data storage and apply parallel data processing. This research aims to solve the Odoo reporting latency problem, where the proposed solution is to import data from the Odoo database and store it in NoSQL data storage and perform parallel data processing to generate the required report faster than the existing approaches to generate the same report.

This research requires multiple experiments by running the same report using the proposed solution and three different existing approaches. The outcome of the experiments shows that data retrieving process by the developed approach is faster, the data retrieving time is stable and slightly increased when the number of rows is increased.

## The Effect of Gaussian Window Side lobe Attenuation on Speech Enhancement using Wavelet Hybrid Thresholding Method

**Dr.S.China Venkateswarlu**, Professor in Dept.of ECE, Institute of Aeronautical Engineering, Dundigal, Hyderabad, Telangana, India

***Abstract:--***

This Research work investigates the effect of Side lobe Attenuation on the improvement of Speech quality by reducing the noise using Gaussian Window with optimum shape. In Speech Enhancement process, signal corrupted by noise is segmented into frames and each segment is Windowed using Gaussian Window with variation in the shape parameter. The Windowed Speech segments are applied to the Wavelet Hybrid Thresholding Speech Enhancement algorithm and the Enhanced Speech signal is reconstructed in its time domain. The focus is to study the effect of Gaussian Window shape on the Speech Enhancement process. For different shapes of the Gaussian Window, It is observed that the Side lobe Attenuation plays an important role on the enhancement process. The quality of the Enhanced Speech was measured using six objective measures. The results are compared with the measures of Hamming window and an optimum shape constant for the Gaussian Window is proposed for better speech quality.

## **I\Q Mismatch Correction Technique for Multiple Digital clock Generation circuits using CMOS Technology**

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**G. Divya Praneetha**, Assistant Professor, Department of ECE., G.P.R.E.C, Kurnool

***Abstract:--***

This paper mainly focuses on the design of closed loop analog in phase and quadrature phase correction circuit for digital clocks. The proposed circuit uses Phase locked loop type of architecture for Quadrature error correction and we are also going to see how Duty cycle plays an important role in our project. The analog feedback loop is designed for quadrature error correction. The issues related to high frequency have been analyzed . This complete project is designed in 90nm CMOS Technology.

***Keywords:--***

Duty cycle, In-Phase and Quadrature phase clock (I\Q) generation circuits, Analog feedback loop

## **eHealth Application for Women Using Decision Tree-Based Classifiers**

**Chona B. Sabinay**, Faculty of information and Technology, Biliran Province State 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

## Functionally Graded Materials: An Overview of Military Applications

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### ***Abstract:--***

Functionally graded material (FGM) is refers to a special type of material designed with a soft transition from a metallic core to a ceramic surface would avoid thermal and thermo-mechanical stresses, because of the internal stresses caused by the elastic and thermal differences at the interface between two different materials. Demand on FGMs exists in several sectors including military, artificial human implant, aerospace, automotive, construction and other advanced engineering fields. This paper is intended to provide an overview of the FGMs, their application in automotive and the employment of the concept on the mechanical, thermal and thermo mechanical performance of vehicle systems. A thorough review of FGM in the specific field applications has found that several researchers have been able to develop different configurations based on FGM concept to avoid failures due to corrosion, fatigue, fracture and cracks failures of certain components exposed to severe loadings during usage. These strategies result in a gradual transition between dissimilar materials decreasing residual stresses generated during fabrication and function. Of late, multiple parallel researches based on the FGM concept are being carried out towards the application as hard armour panel of personnel or vehicular ballistic protection with Nickel (Ni), Aluminium (Al) and its oxides to improve high impact absorption of bullet and protect the army. This review attempts to present a thorough understanding of FGMs, their characterization, manufacturing techniques and technology and their military applications. Throughout the past decade, the demand on having materials that can preserve more than single property in a structure specifically for army field has increased. However, the materials development for military usage which considers the protection of soul or army personnel is still limited. Based on FGM concept, a graded composition between Ni and Ni/Al<sub>2</sub>O<sub>3</sub> on the armour panel surface has now been achieved that has resulted in improved mechanical behaviour and ballistic energy impact absorption.

Effect of various polymeric crystal modifiers and solvents formulation as prevention of wax and asphaltene formation towards the flow ability of crude oil

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**Abstract:--**

Transportation of crude oil from offshore platform to onshore has been recognized as one of the challenges faced by oil and gas industry as the pipelines are casually blocked by the formation of wax and asphaltene. This research will investigate the efficiency of three types of crystal modifiers, namely ethyl-vinyl acetate (EVA25 and EVA40), and styrene maleic anhydride (SMA); and two types of solvent, methylcyclohexane (MCH) and para-xylene, in different ratio to formulate the best inhibitor. The best formulation for EVA-based inhibitor was 30 wt% crystal modifiers and 70 wt% para-xylene, while the best formulation for SMA was 30 wt% SMA and 70 wt% MCH which could give viscosity reduction as high as 86.4%. All three types of crystal modifiers showed almost the same efficiency. Para-xylene was found to be the best solvent as it acted as solvent for the crystal modifiers and also as the asphaltene dispersant. The efficiency of the inhibitor decreased when the solvent used was a combination of two types of compound. An optimization study evaluated that the most optimum conditions were found to be 42.0%, 3.3% and 54.6% for EVA25, MCH and para-xylene respectively.

**Keywords:--**

Wax inhibitor, Viscosity, Ethylene-vinyl acetate (EVA), Response surface methodology, Optimization



## Construction Safety Measures Implementation Status in Nepal

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***Abstract:--***

Safety is primary requirement in construction projects as it is concern with the lives of people. The objective of this research was to access construction safety practices being implemented by Nepalese contractors. A case study has been done observing 5-underconstruction projects with the help of check list survey. The study shows that majority of respondents were implementing preventive and control measures for the safety of worker. However, PPE was first priority and elimination and substitution measures were least priority. The major preventive measure was safety training and major control measure was PPE. Thus, this research pointed out that the safety practices of Nepalese construction projects is gradually growing up but not sufficient as they are still in traditional way of safety management like PPE as first priority for the safety which is last line of preventive measure and less effective. Thus, contractors should be responsible and accountable as they are key party to implement safety during the construction and development of any project.

***Keywords:--***

Safety, preventive and control measure, PPE

## Landmine Detection Robot Using Arduino Microcontroller

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**Alok Saini**, Department of Computer Science Engineering, SRM Institute of Science and Technology, Chennai, Tamil Nadu

### ***Abstract:--***

During the warfare time landmine was used to deploy armed vehicles in the enemy territory. Post warfare the landmines can be detected and diffused using the landmine detection robot which can save thousands of lives including the person who is defusing the mine. Our research work is the prototype of the land mine detection robot (LDR) which can be easily used with the wifi technology. Keeping in mind about the safety of humans was addressed and designed accordingly with the range sensors which help to avoid hurdles. Lightweight temperature resistant metal is used in the fabrication of the prototype project. To identify the location of the mine using robot a Global Positioning System (GPS) sensor is used. The broadcasting can be done by sending the sms to the registered mobile number. Obstacle detection, Path planning and avoidance algorithm were used to navigate the proposed path by avoiding hurdles/obstacles and control accurately during motion. Arduino mega 2560 is employed in the robot. Metal detection is used in the robot and buzzer from producing a warning alarm to the nearby personnel in that area. DC motor is responsible for the movement of the vehicles which is powered with a 12 volt battery to it making it completely wireless. ZigBee device is used to deploy the robot using a PC interfaced. Softwares which are used are the arduino uno and the embedded c.

## Intelligent Traffic Lights System

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### **Abstract:--**

Road traffic congestion has become a major issue for highly crowded metropolitan cities in India like, Delhi, Bangalore, Chennai, etc. Failure of signals, poor law enforcement and bad traffic management has led to traffic congestion. One of the major problems with Indian cities is that the existing roads are being used since a very long time and since the infrastructure has been in a specific manner for a long time now and also a lot of additional infrastructure like: roadside shops, vendors have also occupied the place, due to which it is impossible to disturb the infrastructure of the roads, or to expand them, thus the only option available to us is better traffic management. Traffic congestion has a negative impact on economy, it affects the environment as the increasing traffic results in air pollution as the cars create smoke and nonetheless it increases noise pollution, which mostly happens due to congestion on roads as the stuck vehicles tend to increase the frequency of blowing horns. Emergency services like: Ambulances are one of the major services which gets affected by traffic congestion. Many people die in the ambulances on their way to the hospital. The statistics say that more than 20% of the total deaths that occur, are caused in the ambulances due to the delay caused by traffic congestion problem. Various methods already exist solve this problem such as Infrared Sensors, Video Analysis, Inductive Loops, Ultrasonic Sensors, Dynamic Timers, etc.

The problem with the above-mentioned methods is not only the installation cost but the maintenance is also very high. To reduce the traffic defaulters and help control the increasing amount of traffic, this paper has come up with the solution of “Intelligent Traffic Light System”. This system makes the use of RFID (Radio Frequency Identification) and GPS (Global Positioning Satellite) technologies to implement the Intelligent Traffic Light Signal Control. It requires less time to install, it is cost effective and can work in extreme weather conditions. The biggest advantage with this technology is that, it does not involve changing or manipulating the already laid infrastructure.

The Radio Frequency Identification technology makes use of sensors which detect the tags on the vehicles and help in controlling the traffic defaulters.

### **Keywords:--**

Raspberry pi, RFID sensors, RFID tags, GPS

## Strategy Development for Wind Turbines NACA 6412 Decision making

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**Ali Nasith**, Universitas Islam Negeri Maulana Malik Ibrahim, Malang, Indonesia

### ***Abstract:--***

The increasing of the population impact to the increasing of the energy demand. Indonesian non-renewable energy and the renewable energy demand increased faster but the energy supply is decreased, and the gap between demand and supply of energy is wider and wider. The government of Indonesia tries to shift and to look for an alternative energy to prevent future scarcity of energy resources. One alternative energy used is to utilize wind energy. The wind energy is no pollution, cheaper, and easier to maintain it. Wind energy potential in Indonesia is more than 90 GB and the production electric energy using wind energy has not been explored optimally. The research objective is to analyze the effect between the wind speed and number of turbines blades and the electric power generated by Vertical Axis Wind Turbine (VAWT) using NACA 6412. VAWT used 4, 5, and 6 unit turbine blades and the variation wind speed is 3.0 till 6.0 meter per second. The research variables are variation of wind speed and number of turbines blades, and the electric power is generated by VAWT. This research applies quantitative method is experimental design using two way classification and data simulation. The finding of this research reveals is 1). null hypothesis 1 is rejected, it is means that there is a difference effect between variation of wind speed to the electric generated power by VAWT. 2) The null hypothesis 2 (alpha 15 degrees) is rejected, it is means that there is a difference effect between variation of turbine blades to the electric generated power by VAWT. 3) The null hypothesis 3 is is rejected, it is means that there is a difference effect between interaction of variation of wind speed and variation of turbine blades to the electric generated power by VAWT.

### ***Keywords:--***

VAWT, Simulation, Energy, wind energy, strategic, turbine blades, NACA 6412

## Revisiting the Determinants of Inflation in Iraq Utilizing The ARDL Approach

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**Dr. Mohamed Khaled Al-Jafari**, Department of Accounting and Finance, College of Business Administration, Prince Mohammad Bin Fahd University, Al Khobar, Kingdom of Saudi Arabia

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***Abstract:--***

This study investigates the impact of growth in gross domestic product, an increase in the money supply, imported inflation, and exchange rate on inflation in Iraq. It utilizes the autoregressive distributed lag (ARDL) bounds testing approach for cointegration to explore long and short-run relationship among the variables over the period of 1990-2017. Results reveal that the series are cointegrated in the long-run. In addition, the impact of money supply, imported inflation as well as exchange rate found to be positive and statistically significant. At the same time, growth of gross domestic product turned out to be negative and statistically significant. The study concluded that inflation control requires achieving a proportional level of economic and price activities, where the ratio of money to income grows in a stable manner consistent with financial growth and macroeconomic stability. Accordingly, controlling inflation needs a mixture of fiscal and monetary policies. The findings shed some new insights for policymakers on dealing with inflation in Iraq

***Keywords:--***

ARDL, Exchange rate, Inflation, Iraq, Money supply





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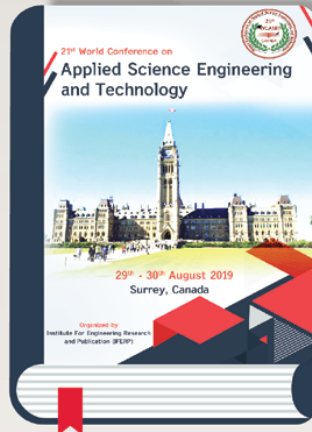




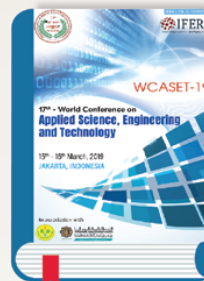
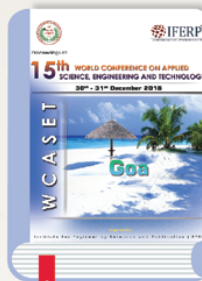
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