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ICECTACSET

ICECTACSET-2022

Virtual Conference

INTERNATIONAL CONFERENCE ON EXPLORING COLOSSAL TECHNOLOGICAL ADVANCES OF THE 21ST CENTURY IN SCIENCE, ENGINEERING, AND TECHNOLOGY

13TH - 14TH AUGUST 2022 ABU DHABI, UAE

Organized by

Institute For Engineering Research and Publication (IFERP)

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(ICECTACSET-2022)

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Exploring Colossal Technological Advances of the 21st Century in Science, Engineering, and Technology

Abu Dhabi , UAE

13th - 14th August, 2022

Organized by

Institute for Engineering Research and Publications

In association with

University of Perpetual Help System DALTA
Molino Campus

Publisher: IFERP Explore

Editorial

We cordially invite you to attend the **International Conference on Exploring Colossal Technological Advances of the 21st Century in Science, Engineering, and Technology (ICECTACSET-22)** on **13th–14th August 2022**.The main objective of **ICECTACSET-22** is to provide a platform for researchers, students, academicians as well as industrial professionals from all over the world to present their research results and development activities in relevant fields of Applied Sciences, Engineering, Technology and Management. 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 there view process, and to the authors for contributing their research result to the conference.

Since June 2022, the Organizing Committees have received more than 200 manuscript papers, and the papers cover all the aspects in Applied Sciences, Engineering, Technology and Management. Finally, after review, about 50 papers were included to the proceedings of **ICECTACSET-22.**

We would like to extend our appreciation to all participants in the conference for their great contribution to the success of **ICECTACSET-22** 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.

Acknowledgement

Rudra Bhanu Satpathy
Founder & Chief Executive Officer
Institute For Engineering Research and Publication (IFERP)

IFERP is hosting the **International Conference on Exploring Colossal Technological Advances of the 21st Century in Science, Engineering, and Technology (ICECTACSET -22)** this year in the month of August. The main objective of Physical Science and Technology 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 session will 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 be known as a thoughtful leader.

I express my gratitude to all my colleagues, staffs, professors, reviewers and members of organizing committee for their hearty and dedicated support to make this conference successful.

Rudra Bhanu Satpathy

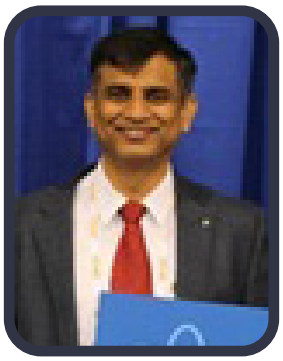
International Conference on

Exploring Colossal Technological Advances of 21st Century in Science, Engineering & Technology

(ICECTACSET-2022)

Abu Dhabi, UAE | 13th - 14th August, 2022

Keynote Speakers



Dr. M V Reddy
Institute of Research Hydro-Québec,
Centre of Excellence in Transportation Electrification and
Energy Storage (CETEES)
Hydro-Québec, J3X 1S1, Canada

Biography

Dr. M.V. Reddy obtained his Ph. D (2003) (mention with highest honors) in the area of Materials Science from ICMCB-CNRS)/ENSCPB, University of Bordeaux, France. From July 2003- April 2019, he worked in Departments of Physics, Materials Science & Engineering and Chemistry, National University of Singapore (NUS), Singapore as senior Research fellow. For the last 20 years, he has been working on the nano/submicron sized materials for Li-ion battery materials (cathodes, anodes, supercapacitors and solid electrolytes), including novel methods of synthesis, characterization and evaluation of the electrochemical properties. June 2019-aug 2021 Senior Researcher at Institute of Research Hydro-Quebec, Montreal, Canada,. Currently Senior Research Professional at Noveau monde Graphite, Quebec, Canada.

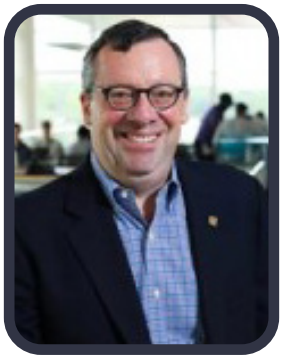
He has published over 210 papers in various international journals and he gave 140 talks (Plenary, keynote and Invited talks) at various conferences. His h-index; 66 and 16100 citations (source google scholar). He authored a landmark publication on electrode materials for lithium-ion batteries and their reaction mechanisms that appeared in Chemical Reviews (impact factor over 54; the paper has been cited over 2300 times since 2013). He trained many local high school/college and International exchange students and Ph.D students.

Honors:

He won Science Mentorship Programme (SMP) Outstanding Mentor Award (2010, 2011, 2012 & 2013, 2014, 2015, 2016), from Ministry of Education, Singapore and Inspiring Research Mentor Award (2011, 2012, 2013, 2014, 2015, 2016, 2017 & 2018) from NUSHS. Won many awards in national and international conferences, for example won 2nd prize in prestigious Intel International Science & Engg. Fair (ISEF 2013) and 1st prize from American Chemical Society, USA. Free life membership award and prize (1000 USD) by International Centre for Diffraction Data (ICDD), USA. Excellent safety lead (2015), Faculty of Science, National University of Singapore. Long service award (2014), National University of Singapore, Singapore. Elected committee Member in Institute of Physics, Singapore (2015- march 2018), Materials Research Society (MRS) Singapore (two times, 2016 to 2020) and Global Materials Network (2012- till now) and Member in MRS-USA and ISE.

International Recognition:

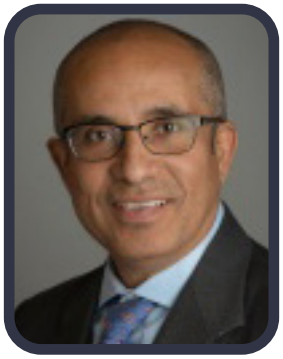
Serving as editorial advisory board member in " Materials Research Bulletin" , Journal of Energy Storage (from July 2020)Materials, Molecules , Nanomaterials (MDPI), and several other open access Journals and Societies. Regional editor: Nanoscience & Nanotechnology-ASIA (since Aug. 2011) and several open access Journals, and he served as theme chair for Energy and Environment and session chair for Batteries, Fuel cells and materials for Environmental protection in International Conference of Young Researchers on Advanced Materials (ICYRAM-IUMRS) 2012, Singapore and Co-chair for ICYRAM 2014 and 2016 conferences held at china and India respectively. Served as a session chair and advisory board in various international conferences. He served as a Ph.D. examiner for various universities (AUSTRALIA, SOUTH AFRICA, USA, INDIA, IITS) and referee for various international proposals and also advisory board member for many International conferences. http://scholar.google.com.sg/citations?user=pWKr2M0AAAAJ&hl=en.



Ian Ferguson
Dean of Southern Polytechnic College of Engineering
and Technology
Kennesaw State University

Biography

Ian Ferguson is currently the Dean of Southern Polytechnic College of Engineering and Engineering Technology at Kennesaw State University. Prior to joining Kennesaw State University he had leadership positions in both academia (Imperial College, Northwestern University, Georgia Tech, UNC Charlotte, Missouri S&T, etc.) and industry (GEC, EMCORE, etc.). His research expertise is in building interdisciplinary teams to use compound semiconductor materials and devices for applications in the areas of sensors, illumination, energy harvesting, and spintronics. This research was supported through competitive research grants and contracts through various government agencies and others totaling over $28.5M as a lead investigator in academia and industry. As an international educator and researcher, he has had active collaborations in the US, Europe, and Asia, which has resulted in over 550 refereed journal publications, conference proceedings, books, book chapters, and patents. In addition, he has been actively involved in the entrepreneurial process of establishing new companies in academia and industry, co-founding a business incubator. He is Fellow of the Royal Society of Arts, Manufactures and Commerce (FRSA), the Institute of Electrical and Electronic Engineering (IEEE), the Institute of Physics (IOP), the Optical Society of America (OSA) and the International Society for Optical Engineering (SPIE).



Cemal Basaran
University at Buffalo, The State University of New York | SUNY Buffalo • Civil, Structural, and Environmental Engineering
Professor of Engineering Mechanics

Biography

Professor Cemal Basaran, civil engineering faculty member specializing in computational engineering mechanics, will visit IIT Madras in India to share expertise and strengthen international relations as part of the U.S. Department of State Bureau of Educational and Cultural Affairs' (ECA) Fulbright Specialist Program.

Education:

• PhD, Engineering Mechanics, University of Arizona, Tucson 1994
• MS, Civil Engineering, MIT, Cambridge, MA 1988
• MS, Middle East Technical University, Ankara, Turkey 1985
• BS, Yildiz Technical University, Istanbul, Turkey 1982

Publication:

• Cemal Basaran, Introduction to Unified Mechanics Theory with Applications, 2020 © Springer - Nature, ISBN 978-3-030-57771-11.
• Zhang W., Ragab, T., Zhang, J., Basaran, C. "Impact of Electrostatic Doping Level on the Dissipative Transport in Graphene Nanoribbons Tunnel Field-Effect Transistors" Carbon, 153 (2019) 120-126,
• Weixiang Zhang, Tarek Ragab, Ji Zhang, Cemal Basaran, "Influence of Defects on Dissipative Transport in Graphene Nanoribbons Tunnel Field-Effect Transistor" Nanotechnology, Volume 31, Number 4, October , 2019.
• Bin Jamal, N., Kumar, A., Rao, L., Basaran, C. "Low Cycle Fatigue Life Prediction Using Unified Mechanics Theory in Ti-6Al-4V Alloys", Entropy 2020, 22(1), 24;
• J. Zhang, T. Ragab, W. Zhang, C. Basaran, "High Current Density Electron Wind Forces in Metallic Graphene Nanoribbons", 2020 Nanotechnology, 31 355203

Research:

Current and Recent Projects
• Unified Mechanics Theory
• Nano Electro-Thermo-Mechanics Of 2D Materials
• Failure Mechanics Of High Entropy Alloys In Space Applications.
• Fatigue of Hydrogen Embrittled Steel.
• Very High Strain Rate Failure Mechanics of Soft Steel

Awards:

• 2012 Outstanding Paper Award, Itherm 2012 Mechanics Track, 13th Intersociety Conference on Thermal and THermomechanical Phenomenon in Electronic Systems, San Diego, CA.
• 2011 Excellence in Mechanics Award, ASME, Electronic & Photonic Packaging Division.
• 2005 Associate Editor of the Year Award, ASME Journal of Electronic Packaging.

Dr. Chithirai Pon Selvan
Director
Research & Head of School Science and Engineering,
Curtin University Dubai

Biography

Dr. Chithirai Pon Selvan obtained his Bachelors in Production Engineering, Masters in Computer Aided Design, PhD in Mechanical Engineering, and Postdoctoral Fellowship (PDF) in Mechanical Engineering. Dr. Pon Selvan has over 23 years of experience in teaching, educational assessment, classroom management, and student relations. He has published 100+ research articles in journals and presented many papers in conferences. He has been invited and honored as keynote speaker, session chair, resource person, and technical committee member of various conferences held in UAE, India, Thailand, Malaysia, UK, Germany & Italy. He has organized many conferences and he is on the editorial board of more than 50 journals. His research interests are in the areas of machine design, optimization techniques, and manufacturing practices. He is a well-known researcher in the field of Abrasive Waterjet Cutting Technology and has evaluated several PhD theses in Mechanical Engineering from various universities. He is the approved supervisor of many universities including Curtin University, Australia to guide PhD students. He is a member of SAE, ASHRAE, IMechE, ASME, EI, ASQ, and ISTE. He is also a Senior Fellow of the Higher Education Academy (SFHEA), UK.

He has received several prestigious awards in UAE including the following.

• "Teaching Excellence Award (2013-2014)" from Manipal University, Dubai
• "Dubai Award for Sustainable Transport (2017)" from Road Transport Authority (RTA), Govt. of Dubai
• "Dr. Kalam's International Excellence Award for Education (2017)" from Dr. APJ Abdul Kalam Lovers Foundation, UAE
• "Distinguished Conservation Project Award (2018)" from Dubai Electricity and Water Authority (DEWA), Govt. of Dubai
• "Alleem Sustainability Researcher Award (2018)" from Alleem Research and Development Centre, Sharjah
• "Sustainability Ambassador Award (2019)" from Road Transport Authority (RTA), Govt. of Dubai
• "Research Excellence Award (2020)" from Curtin University, Dubai
• "TAG Founders Award - Academic of the Year (2021)" from Transnational Academic Group (TAG), Dubai

He joined Curtin University Dubai in July 2018 after serving 10 years in UAE, with Manipal University Dubai and Amity University Dubai.

International Conference on

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Dubai

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Modern Sciences & Arts University
Egypt

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ABSTRACTS

Cognitive executive functions in the academic performance and reading comprehension of students at a Colombian university in times of pandemic

Herrera Delgans Miguel Ángel
Universidad Norbert Wiener, Colombia

Yangali Vicente Judith Soledad
Universidad Norbert Wiener, Perú. Escuela de Posgrado South American Center for Education and Reserch in Public Health

Abstract
The objective of this research was to analyze the role of cognitive executive functions in academic performance in the reading comprehension of students from a Colombian university - 2021. To achieve this objective, a categorization process was developed that led to specify three fundamental categories: executive functions, reading comprehension, and academic performance. The study was framed in a qualitative research approach and from a hermeneutical methodological design, from which it was intended to identify the meaning or value that the participants assigned to the categories under study. Observation and semi-structured interview were used as research techniques. The instruments applied were the interview guide, the analysis matrix, and the observation scale. It was identified that the participating subjects consider that executive functions would strengthen reading comprehension levels, within which they highlight the need to link emotions assertively with comprehension processes.

Keywords
executive functions, metacognition, reading comprehension, academic performance

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Foliage Deformity Detection using Image Processing

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Abstract
Agriculture accounts for over 70% of the Indian economy. Crop output is heavily impacted by environmental variables such as rainfall and temperature. Computer technology and image processing have yielded automated detection systems that help farmers in early identification of diseases and also provide means of controlling infection. As a result, the current research focused on using image processing techniques to identify diseases on plant leaves. Image capture, picture preprocessing, segmentation of images, extraction of features, and classification are all part of the process.

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Ontology web language framework for cognitive design thinking

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Associate Professor, VNR Vignana Jyothi Institute of Engineering and Technology
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Abstract
Iterative, non-linear design thinking involves understanding users, challenging assumptions, redefining problems, and creating new solutions to prototype and test. As well as the set of cognitive, strategic and practical processes used by designers, design thinking encompasses the knowledge that has been developed about how people reason when solving design problems. It is also defined as 'designed ways of knowing, thinking, and acting, and 'design thinking. The study of design cognition and design methodologies has roots in the study of design thinking. Being- related branch of metaphysics describes the properties and relationships between a set of concepts and categories in a given field. In this paper, stages of Cognitive design Thinking (CDT) are defined and explained. Design thinkers solve the problem by applying the techniques in the CDT by considering all the inputs from users. Initially, the user responses are noted at the discovery phase of the design thinking. In the Ideate, Prototype stage, teams are divided, and optimal technique is applied and tested for all the inputs required by the user. Ontology web Language is used to implement the concept of CDT, resulting in generating the graphs in each phase of CDT.

Index Terms
Ontology web Language (OWL), Empathy, Ideate stage, Brainstorm, Descriptive Logics [DL], Cognitive Design Thinking [CDT]

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Kits of Change: Understanding Academic Bureaucrats' Leadership and Management Praxis

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Abstract
This study discovers leadership and management praxis in teacher education programs in the MIMAROPA, Philippines. Using the semi-structured in-depth interviews, data are collected and subjected to cool and warm analyses yielding a set of themes and sub-themes that define what these academic bureaucrats consider to be looked-for praxis. Thirty Five (35) department chairs from the selected state universities/ colleges have been represented in this study. The investigation results generated three kits of change ((PPE): permissive change, projected change, and elicited change. Thus, label the common and critical occurrences which create the onset knowledge and experience, and the significant conflicts that are witnessed in the tertiary school education. This article aims to add to the rising body of research on leadership and management, particularly on the praxis of the academic bureaucrats. Finally, verdicts of this study could potentially serve as knowledge-avenue for college deans and directors in choosing and developing department chair's competencies and managerial skills.

Keywords
Kits of Change, Permissive Change, Projected Change, Elicited Change, Leadership and Management Praxis, Tertiary School Education

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Characterization of Sandy Soil, Pond Ash and Randomly Distributed Fibers- A Prespective

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Anil Kumar Nanda
Professor, Department of Civil Engineering, RIMT Gobindgarh Punjab. India

Abstract
Soils that are encountered by the practicing engineers in the field vary widely in their properties and in their response to any external stimulus. Soils that specialize in small particles such as rock, sand and coarse mud will not be able to absorb even the lowest pressure in stress and fail instantly with high penetration values. Further that should be improvised by the special methods used in Geotechnical Engineering there by enhancing various engineering properties of the soil. It's worth mentioning that every method adapted has its own limitations and adaptability for having maximum output from soil conditions with minimum input. A number of trials have already been used by various scientists to technical know how about the random discrete installation method installed in the soil enhances its load change behavior by interacting with the soil particles mechanically through spatial collisions and interactions. Most of the tests were conducted on different type of soils but perhaps none of them used both horizontal and vertical permeability tests for the application of neutral stresses in fiber reinforced soils along with the use of geotextile and pond ash/ fly ash simultaneously. So a thorough study is utmost required for the sand or a combination of sand and pond ash to get established as a material

Keywords
Sand, Soil, Pond ash, strength

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Utilisation of Artificial Intelligence for Risk Forecasting

Prof Dharitri Das
Principal, PMCA, Cuttack
Dr Anshu Sharma
Partner, SEEDS, N.Delhi
Ar Chitrasen Parida
Asst Prof. , PMCA, Cuttack

Abstract
Odisha being a disaster prone state, there is a constant threat to life and property throughout the year. Annual floods and tropical cyclones of varying magnitudes take a huge toll on the disadvantaged population in this coastal state in the eastern part of India. Rapid and insensitive developments along the coasts have also made these areas more susceptible to landslides, erosion of coastlines and inundation.
Achieving a firm understanding about the risks involved to individual buildings is still a challenge at the level of the decision takers as forecasts do not consider specific vulnerabilities of the local area and population such as housing types and drainage patterns.
All disaster warning systems, though extremely accurate now, extend upto the district level and micro site hazard warnings are not available for particular locations, leaving the local populace unprepared in the event of a disaster.
The aim of this research, jointly undertaken by SEEDS, N.Delhi and PMCA was to convert ground information into accessible and doable actions through timely forecasts and resultant advisories. With 25 years of experience of working on disasters, the SEEDS team, our knowledge partner, is able to translate the risk scores from the AI model into recommended pre-determined actions. These actions will be delivered to the last mile through both mobile-based apps and trained community-based networks of volunteers. Neighbourhoods, at ground zero, will then be able to use them to take risk reduction action and act early in case of a disaster.
The methodology included conduct of a detailed ground survey of about 220 households of a fishermen settlement in Penthakota, Puri, Odisha and then feeding into the assessment model on a pilot basis.
This study addressed the following :
1. Mapping of critical attributes of the site that included number and type of water bodies, presence of green cover, location of drainage channels, hydrology and geo-profile of land, etc
2. Survey of building typologies including roofing types, walling materials, plinth heights, built up- to- open ratios, number of storeys, etc
3. The location was specifically selected in a high density neighbourhood comprising households of low economic strata with previous experience of flooding.
The AI model, being developed jointly with the expertise of Microsoft and SEEDS, N.Delhi is to be used to combine together all data related to hazard maps, inundation patterns and building typologies of each location. Other site specific vulnerability factors would also be integrated (for eg. number and type of waterbodies, green cover, permeable surfaces, and drainage patterns) to arrive at risk scores for each building in the particular location to a specific strength of disaster be it floods, cyclones or storm surges. This location specific data would then be used in real-time in the event of an imminent disaster.
The AI approach is based on principles that can be programmed and extended over wide geographies, with improvements over successive cycles.
The paper discusses in detail regarding how AI is to be used for preparing risk scores and forecasting disasters in order to mitigate loss of lives and assets.

Keywords
forecasting; vulnerability; risk; inundation; real-time forecasting; critical attribute

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Power Consumption Reduction in a Cloud Computing Data Centre using Non-Linear Predictive Algorithm

Afolabi Rotimi
Department of Electrical & Communication Engineering in Covenant University, Ota, Nigeria

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Department of Electrical & Communication Engineering in Covenant University, Ota, Nigeria

Anthony U. Adoghe
Department of Electrical & Communication Engineering in Covenant University, Ota, Nigeria

Abstract
Data Centre (DC) which is an area where cloud computing core materials are located and interconnected, is of great important in a telecommunications industry to meet up with the rapid increase in the demand of telecommunication services. However, the cost of powering a DC account for about 80% of the cost incurred in maintaining the entire data centres. Autoregressive Moving Average (ARMA) which is one the prediction models used to reduce the power consumption of DC can be applied to only time-series data. Hence, in this paper, a Linear Power Consumption Prediction (LPCP) model that could predict the maximum power consumption for target traffic is proposed for DC power consumption reduction. Data were collected from three different servers in Nigeria, named BSC 13, BSC 14 and RNC 06 using power analyzer, clamp meter and thermometer. The historical assessment of data collected were carried out for the DC under study. The data were recorded on an hourly basis for each day (24 hours per day), and a total of 8568 and 8592 samples were recorded for the year 2019 and 2020, respectively. The data were pre-processed for consistency and the final data used for each year under study, consists of 8400 samples which represent 50 weeks of which 1 week (7 days per week) from Sunday to Saturday. The final data were divided and categorized into two Datasets. The first dataset was used to create a prediction model, while the second dataset was used for testing. The developed LPCP model that takes as input the targeted traffic (in Erlang) and the constant of proportionality for a given time (h) of the day could predict accurately the maximum power consumption for targeted traffic with negligible prediction error. This model gave low power consumption with accurate prediction when compared with the existing models. It also demonstrated superiority in terms of cost, power consumption reduction and negligible prediction error.

Keywords
Data Centre (DC), Linear Power Consumption Prediction (LPCP) model, Energy Consumption (EC), Power Usage Effectiveness (PUE) and Cloud Computing (CC).

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Ultra star Worldparty and the strategic learning of the English language: experience of a Peruvian university

Mg. Raúl Eleazar Arias Sánchez
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Mg. Rúsbel Freddy Ramos Serrano
Universidad Nacional de Huancavelica, rusbel.ramos@unh.edu.pe

Abstract
The objective of this research was to know the level of effectiveness of the use of the UltraStar WorldParty software for learning and practicing the English language with Peruvian university students. This research, due to its purpose, was applied with an experimental level and a quasi-experimental design. The population consisted of 182 university students, 62 of them constituted our experimental group and 62 the control group. To collect the information, a checklist and an observation sheet were used. The results obtained were processed in the statistical program SPSS 21 and Microsoft Excel 2013 for the graphic representation of the data. The results showed that the level of effectiveness of the UltraStar WorldParty application for learning and practicing the English language was high, since it allowed students to complement their knowledge and put it into practice in a fun and entertaining way. Finally, we conclude that the proper application or use of software can significantly contribute to learning achievement and ensure that the educational experience in a virtual context is more enjoyable.

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Empathy and employee turnover intention: The impact assessment

Dhruba Lal Pandey
Associate Professor, Central Department of Management
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Abstract
The aim of this study is to evaluate the effect empathy has on employee turnover. This study used correlational research design to investigate the relationship between empathy and employee turnover intention among the employees of hotel and hospitality industry operated within Kathmandu valley. The predictive variable employed in the analysis is empathy and employee turnover is dependent variable. This study's population was Nepalese hotel and hospitality industry employees. Sample size taken was 131 based on purpose reviewing literatures in the relevant subject. The findings were derived from primary data. Data were collected establishing questionnaire on the 5-point Likert scale. Questionnaires were administered via e-mail. Frequency and percentage is used to estimate empathy level. ANNOVA and t-tests were used to determine the disparity of opinion based on age and gender. The matrix of correlation has been used to analyze the relationship between the empathy with employee turnover intention. The study result shows a clear negative association between Empathy and Employee Turnover Intention. The message of this study is that management should develop strategies that will ensure the employment of Emotionally Intelligent Employees as well as build opportunities within the company that will improve the employee's interpersonal relationship to minimize the turnover of employees.

Keywords
Empathy, Employee Turnover, hotel and hospitality industry

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Enhanced Symmetric Convergent Encryption for Secured Data Deduplication in Cloud

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Abstract

Cloud storage is a virtual setting that includes an amazing amount of processing power.The resources are in a state where they can serve users.Cloud data centres are the locations where all of this computing is maintained.In order to produce high-performance computing, the data centre houses a sizable number of powerful computers and servers connected to one another.The user is provided with virtualized access to the physical computing resources housed in the cloud data centre.To provide a convergent encryption method that will enhance data security while reducing deduplication's impact on security, encryption, and decryption times. Convergent encryption is used to prevent duplicating data, but the key used to encrypt data for the first time is kept up to date and distributed to all users who have same or closely related content of data to upload to the cloud storage.In an open cloud environment, it's crucial to distribute the key to all users.When using cloud storage services, users encountered numerous issues.

Key words

Data Deduplication,Convergent Encryption,Cloud Environment, Key.

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An Efficient Random Number Generator for Built in Self Testing

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Abstract

The Idea behind the project is to generate true random numbers by using the randomness as a source. Basically, True random number generators are widely used in cryptographic applications such as key generations, padding bits etc., Typically, jitter is accumulated in the free-running oscillator ring's and programmable delay lines are used to generate large variations of oscillations and these can vary from one to other clock cycle due to the variations in jitter. The main advantage of true random number generator is used to improves the randomness as well it also produces truly random numbers with needed random bits. True random number generator uses a single source of entropy that is clock jitter in circuits. To implement this project, we use Xilinx ISE Design Suite 14.7 version

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Design and Implementation of ALU using Application Specific Reversibility with Vedic Mathematics

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Abstract
The Main Objective of the Project is to Design Vedic Mathematics based "ALU" using Reversibility Technique for DSP Applications. In Order to Reduce Delay, Area, Complexity, power consumption, Improve the High speed. Reversibility is used to reduce area, complexity. The multiplication is done by using Vedic Multiplier; Vedic multiplier is used to increase the speed. Priority encoder, Decoder, 2's compliment operations were implemented in logic unit. We are Designing our Architecture in Verilog code and simulated using Xilinx ISE Tool. The Project functionality input and output to the system is digital data. And the process expected to be done in the system is Arithmetic and logical operations and Multiplication process. The specifications of "ALU" are 4 bit control signal, Two 4 bits input digital data and 8 bit output digital.

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Oil Spill Detection on Sea Surface Using Sentinel-1 Sar Image

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Abstract
In this work, Oil spill is located on the ocean/sea using YOLO algorithm. An oil spill is the release of a liquid petroleum hydrocarbon into the environment, especially the marine ecosystem, due to human activity, and is a form of pollution. The term is usually given to marine oil spills, where oil is released into the ocean or coastal waters. Hence, oil spill detection should be considered as an essential research issue. So, here oil spill will be located with YOLO algorithm with Matlab. The results will give better outputs when compared to existing works.

Key Words
Oil spill, Detection/localization, YOLO, Matlab..

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Foot Step Based Power Generation Using Piezo And Multiple Load Control Using Android App Via Bluetooth Technology

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Abstract
This Project is designed for Foot print power generation using PIEZO Electric Material. Due to soaring energy prices and an increased environmental awareness there is a growing need for sustainable designs. The world around us has embraced this concept by incorporating solar panels, wind turbines, and promoting shared transportation via zip cars. Instead of looking for new ways to generate energy, we will be focusing on harvesting energy from everyday activities that would otherwise be lost.
In this project we propose an alternative solution to the dynamo and an improvement for the battery lifetime. We are proposing the use of piezoelectric generator, which is a clean and durable solution. Piezoelectric generators employ active materials that generate a charge when mechanically activated. Today we see more and more applications using piezoelectric transducers. Piezoelectric generator that harvests mechanical vibrations energy available on a High Way Roads or Foot Paths. This System is also interfaced with a Bluetooth and Android based Automation System. Using this Application user can connect with his mobile phone to Hardware unit using Bluetooth Technology.

Key words
PIEZO Electric Material, Bluetooth, Arduino.

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Borewell Rescue Portable Device

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Abstract
A borewell is a deep, narrow hole drilled into the ground to pump water typically small in diameter – ranging from 4.5 to 12 inches and can go as deep as 1500 feet into the ground. There are roughly 27 million borewells in India today, although many have been abandoned since they no longer provide water. There have been several instances across the world when borewell mishaps have claimed the lives of innocent individuals. In this paper, we have presented a technique for rescuing casualties of bore well accidents. We created a portable device that can detect imminent activities and take necessary actions. The functionality of the prototype device is split into two phases. The first phase is to find the problem and alert the authorities. An emergency beacon is generated to the system's contacts, which include Admin and local authorities. We were able to send an SMS with the location of the incident using GSM and GPS modules. The administrator receives a SMS update, allowing him to analyse the situation remotely. The second phase would be an action plan to save the victim. We were able to discern the range difference and identify the victim using an ultrasonic sensor. The device has a buzzer mounted to alert the user indicating that someone has fallen into the borewell. If the administrator is not there, authorities may be called to the scene and a rescue effort may be launched. For this, we created a device with a motor that allows the motor to reach out and grab the victim through a cable. The robotic arm so developed features a mechanical pedestal that supports the whole arm's body. Through a cable, a DC motor extends or descends the arm. To help the victim's condition, oxygen and light services are made accessible. We seek to assist authorities and human individuals in averting impending mishaps while forecasting and planning for future issues through this project.

Keywords
Ultrasonic, GPS, GSM, Buzzer, Arduino

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Implementation of Atonomous Car

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Abstract
Autonomous cars are the future smart cars anticipated to be driver less, obstacle avoidance capability and efficient image processing capability. The main motive of designing autonomous cars is to help blind people travel independently, avoid accidents during night travel and deliver goods in absence of a delivery person etc...
To create a successful self- driving car, we need accurate measurement of distance between obstacle and car, precise image detection capability to detect signs, speed control and finally a huge amount of training is required in designing an autonomous car. To execute the training process, we are using Open CV to process the image, perform computer vision tasks, and machine learning concept called Behaviour modelling training (BMT).
In this project we are focusing on delivering goods which is one of the applications of autonomous like (attendance sheet, notices etc.) within a campus or an offic e without the need for a human to perform these tasks.

Keywords
Open CV, Behaviour model training (Machine Learning), Training Data, Neural Network.

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Smart Underground Cable Fault Detection Using IOT

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Abstract

The objective of this project is to determine the distance of underground cable fault from base station in kilometers. The underground cable system is a common practice followed in many urban areas. While a fault occurs for some reason, at that time the repairing process related to that particular cable is difficult due to not knowing the exact location of the cable fault. The proposed system is to find the exact location of the fault. The project uses the standard concept of Ohms law i.e., when a low DC voltage is applied at the feeder end through a series resistor (Cable lines), then current would vary depending upon the location of fault in the cable. In case there is a short circuit (Line to Ground), the voltage across series resistors changes accordingly, which is then fed to an ADC to develop precise digital data which the programmed microcontroller of Arduino would display in kilometers. To Power this entire System, we have 12V Transformer based Power Supply. 1N4007 diode based full wave rectifier circuit is used rectify 12V AC voltage to 12V Dc Voltage. Voltage Regulator 7805 and 7812 are used to produce constant 5V and 12V DC Output. These Voltages are used by Arduino, LCD Module, Wi-Fi Module, Buzzer Module and other Minor Circuit. Filter Capacitors are used to produced Constant and filtered DC Voltage.

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Blind Aid Stick: Hurdle Recognition, along with Voice based cooperation via GPS&GSM & Panic alert system

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Abstract
Blind aid Stick is a break-through technology in navigational and reconstructive aids for the blind and visually impaired. It is developed to communicate using voice-based guide for users in order to have easy mobilization . Ordinarily available systems in the out-door environment are expensive and its designing is time consuming. Blind people have extensive drawbacks as they cannot detect the obstacles and dangers. They have little information about data such as landmarks and self-velocity Information .This blind stick provides easier route to blind persons, by designing a cost-effective and more flexible navigation system .This helps them to move independently without any manual help or guidance. There are few latest technologies which are now available in market to cater the needs yet they have their particular drawbacks.Hence, one of the competent solutions is to use embedded system. Blind aid Stick will be a powerful tool and it is very helpful for visually impaired ,in achieving fully independent navigation for those with visionloss and blindness to move freely, safely, and independently.

Keywords
Arduino mega, sensors (like ultrasonic, water, flame, IR remote receiver) and jumper wires for connection, GPS, GSM, stick.

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Wi-Me (Wireless Measurement)

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Abstract
TIn this project, we build our own IoT Based IR Thermometer using MLX90614 ESP8266 & monitor the temperature on the Blynk Application. This DIY Infrared Thermometer is the low-cost contactless thermometer for measuring an body temperature or the temperature of very hot bodies. An infrared thermometer is a device that uses to measures the infrared radiation emitted by an object. Infrared radiation means a type of electromagnetic radiation below the visible spectrum of light. This DIY MLX90614 sensor is the low-cost pulse detector for measuring pulse and spo2 percentage in body. It work on the basis of light reflection in the proton count by hitting pulse. We firebase to store a data and hosting, we developed an app and web application monitor the body temperature, pulse, so2 percentage in our body. And we can analysis the statistics of the readings through applications.

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Detection of Hurricane from Satellite Images

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Abstract
Hurricanes is the most natural disasters causing immense harm to ecosystem and economic system world wide heavy rainfall and high winds accompanying hurricane inflict damage to property as well as loss to human life. Hence, appropriate steps need to be taken to mitigate the damage caused by the disaster. Recently, social media platforms are used that help in providing immediate relief to the people affected by the disaster. Since, the difficulty arises in analysis high volume data of social media, satellite imaginary is also begin used for damage detection due to its ability to cover large spatial and temporal areas. But manual damage detection is error prone. Therefore, this project includes the use of machine learning for detection of damage caused by natural disasters with a special focus on hurricane damage. In this project utilising the availability and readiness of satellite damage detection via image classification algorithms. Using this satellite images, we predict whether a particular place is to be affected or not, by the algorithms which gives the highest accuracy.

Keywords
CNN, RESNET, SVM ALGORITHM, ALEXNET, LINEAR AND LOGISTIC REGRESSIONS, EXISTING SYSTEM

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Microcontroller Based Digital Door Lock Security System

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Abstract
The main goal of this project is to design and implement a highly secured and reliable smart bank locker security system based on Biometric fingerprint, password and GSM technology. In our proposed system first the user will enroll his user name, password and his mobile number, then the person will put finger on finger print module and finger print will be scanned and stored with fingerprint id. During login operation user finger print of authentic person will be scanned. If the finger is correct of that particular person then it will allow and display finger is matched and if the finger is not matched of that particular person then it will gives the signal to the siren and will play some time and then message goes to the user that the unauthorized entry is there please check. And if the finger print is matched then it will gives the signal to do next step to enter the Password, then the authorized person will enter the password. If the password is incorrect then it will play siren and the system will send the message to the user i.e. the unauthorized person is trying to open the lock so please check it and so on, if all the conditions are matched then the microcontroller processes the data and correspondingly drives the motor to operate the load i.e. lock will be opened. The main advantages of using RFID, biometric fingerprint, password and GSM technology is highly secure and reliable locker system than any other locker systems. This system can also create a log containing check in and check out of each user along with basic information

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Deep Learning Model for Optical Diagnosis of an Retina

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Abstract
A Deep learning model which uses Convolution Neural Network(CNN) algorithm is used to identify the retinal diseases namely diabetic macular edema, drusen and choroidal neovascularization. Optical coherence tomography(OCT) is a type of image processing technique helps to instant and direct imaging of retina tissue. Keras deep learning framework is used to identify the disease in the retina. A publicly available data set which is available in Kaggle platform is used in this model. This data set contains four categories namely NORMAL, CNV, DME, DRUSEN. It is organized into three folders (Training data, Test data, val data). The major outcome of this project is one can evaluate the optical disease based on the retina image. Further the model can be integrated with python flask in order to represent it in web application.

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IoT Based Pollution Monitoring System to Measure Dangerous Gases

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Abstract

The main objective of this project is to monitor the Air Polluting Gasses from anywhere in the world using IoT Technology. Using this method Municipal Corporation members can monitor this dangerous gas remotely from their office location. It is necessary to monitor air quality and keep it under control for a better future and healthy living for all. Here we propose an air pollution monitoring system that allows us to monitor and check live air pollution as well as sound pollution in an area through IOT. Project uses MQ135 Air Quality sensor and Smoke Sensor to sense presence of harmful gases/compounds in the air and constantly transmit this data. The sensors interact with Arduino which processes this data and transmits it over the application. This allows authorities to monitor air pollution in different areas and act against it. This system is also interface with Temperature and Humidity sensor to measure the status of Temperature and Humidity in that current area.LCD Module is used to display the Sensor Values for Local Monitoring. Blynk based IoT Web Server and Application is used for Realtime Sensor data monitoring.

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SWT and PCA Image Fusion Method for Multi-Modal Imagery

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Abstract
Image fusion is the process of combining two or more related images to produce a single output image, containing more relevant information than any one of the input images. The image-fusion process depends upon the application domain such as the number of images undergoing fusion and the type of imagery i.e. whether it is multi-spectral or multimodal. This project contains two fusion methods, they are principle component analysis(PCA) and stationary wavelet transform(SWT).So by applying these fusion methods in the medical imaging and astronomy we can get more relevant and focused images for further image processing stages and diagnosis.

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IOT-Based Computerised Voting System with Finger Prints

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Abstract
Image fusion is the process of combining two or more related images to produce a single output image, containing more relevant information than any one of the input images. The image-fusion process depends upon the application domain such as the number of images undergoing fusion and the type of imagery i.e. whether it is multi-spectral or multimodal. This project contains two fusion methods, they are principle component analysis(PCA) and stationary wavelet transform(SWT).So by applying these fusion methods in the medical imaging and astronomy we can get more relevant and focused images for further image processing stages and diagnosis.

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A Review of Non-destructive Testing Methods for Aerospace Components

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Abstract
Non- destructive testing has been one of the key methods of testing engineering materials before utilization for quite a period. Aerospace materials and machines, being sophisticated, expensive, and strong in nature, require effective testing to resist the environment they go through, such as high pressure, temperature, friction and so on. There are various methods of testing aerospace materials using non-destructive methods, ranging from visual testing to eddy current testing. This paper provides a comprehensive literature review on the non-destructive testing methods for the components on aerospace applications. This article will be highly beneficial to manufacturers, entrepreneurs, and new researchers to identify the suitable non-destructive testing method for various aerospace applications.

Index Terms
Leak testing, liquid penetrant testing, magnetic particle testing, non-destructive testing.

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AMUBOT (A.I.-powered Chatbot)

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Abstract
Chatbots are used in a wide range of online applications, most notably commerce and customer service. These chatbots offer many advantages, including personalisation and 24-hour availability seven days a week. These benefits make chatbots particularly well-suited for usage in the educational sector. Chatbots are a novel type of human- machine interface that uses natural language. On the other hand, academic chatbots have received little attention in the academic community, for example, by providing organisational help for studies, courses, and tests. This research paper will focus on developing an AI-powered chatbot that will utilise A.I.M.L. (Artificial Intelligence Markup Language) to answer students, guardians, parents, and observers. AMUBOT is a university chatbot that can conduct amicable chats about courses offered, admission requirements, scholarships, career guidance, semester examination dates and schedules, and entrance examinations, among other things, and can also answer frequently asked questions (FAQs). The majority of existing chatbots lack empathy and cannot accommodate anything that deviates from the script. AMUBOT addresses these issues by incorporating active learning into the implementation of existing chatbots.

Keywords
Chatbot, Human-machine interface, Artificial intelligence (AI), Artificial Intelligence Markup Language (AIML), Machine Learning

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Enhanced Symmetric Convergent Encryption for Secured Data Deduplication in Cloud

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Abstract

Cloud storage is a virtual setting that includes an amazing amount of processing power.The resources are in a state where they can serve users.Cloud data centres are the locations where all of this computing is maintained.In order to produce high-performance computing, the data centre houses a sizable number of powerful computers and servers connected to one another.The user is provided with virtualized access to the physical computing resources housed in the cloud data centre.To provide a convergent encryption method that will enhance data security while reducing deduplication's impact on security, encryption, and decryption times. Convergent encryption is used to prevent duplicating data, but the key used to encrypt data for the first time is kept up to date and distributed to all users who have same or closely related content of data to upload to the cloud storage.In an open cloud environment, it's crucial to distribute the key to all users.When using cloud storage services, users encountered numerous issues.

Key words

Data Deduplication,Convergent Encryption,Cloud Environment, Key.

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Green synthesis of silver nanoparticles and antioxidant activity from Limnocharis flava

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Abstract

Green synthesis of silver nanoparticles (AgNPs) has been widely studied from various plant extracts based on several lines of applications such as chemical, biological, pharmaceutical, and medical usages. Limnocharis flava has examined on this research because of its bioactivity. In this work, antioxidant activity and capability to synthesize the AgNPs were studied using spectrophotometric method. Optimum conditions were also investigated for biosynthesis of AgNPs for instance a concentration of silver nitrate (AgNO3) ranging from 1 mM to 10 mM, pH range (4-11), and reaction time (30min-24hr). The results obtained from UV-Vis spectrophotometer showed a characteristic AgNPs absorption spectrum at a maximum wavelength of 417 nm indicating a formation of AgNPs. The antioxidant activity of L. flava was tested by using DPPH assay. Total phenolic compounds were evaluated and presented as one of reducing agents form plant extract which might get involved the mechanism of actions for the formation of AgNPs. In conclusion, a rapid synthesis of AgNPs from L. flava extract was found at 30 minutes using 1 mM AgNO3 at pH 11. Further characterization of AgNPs and other applications such as antibacterial activity can be further carried out.

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Approach to String-Like Pulse in Traditional East Asian Medicine by Ultrasound device

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Abstract

Objective: Pulse diagnosis is one of the most fundamental and important diagnostics in traditional Korean medicine. Pulse condition is difficult to master, because of writing only by text in the past. Although researches and machines for objectification of pulse have been developed in these days, it is hard to master pulse condition yet. Pulses are defined by several aspects; such as pulse location(superficial and deep pulse), pulse rate(slow and rapid pulse), pulse length(long and short pulse), pulse strength(forceful and forceless), pulse smoothness(stagnant and smooth pulse), pulse tension(tension and relaxation), pulse thickness(string and enlarged pulse) and so on. Some of them we could express pulse form visibly, especially with string pulse and enlarged pulse because those have pulse shape like thick or thin. So we study pulse actualization with especially string pulse out of two. Also we focused on what the place of inch-bar-cubit is just on the radial artery. That means that measuring the change of radial artery thickness by some given conditions would show the actualized pulse definition with visual evidence not only with practitioners' fingertip sensation. Methods: The string pulse is straight and narrowed like a string with a bow which is referred to traditional medical classic such as Nanjing, Maijing and other text for diagnosis. It could be explained by thickness of radial artery. According to medical classics, what string pulse mainly represents fatigue on human body. That means if somebody had fatigue on his or her body the pulse would be changed into string pulse from normal. Therefore, we check thickness of radial artery by ultrasound after causing artificial fatigue. 1) Measure the thickness of radial artery after 30 min break for making sure the normal pulse. 2) Make subject to grab handgrip for 1 min to make him or her in fatigue stage. 3) Measure again the thickness of radial artery. 4) Compare the values of radial artery thickness between before and after grabbing. Results: After causing artificial fatigue, thickness of radial artery is decreased after the experiment. The thickness of RA of Subject A had been changed from 1.8mm to 1.6mm and Subject B from 2.0mm to 1.6mm. Conclusion: This change from experiments above shows that RA was influenced by even short term stimulation like grabbing handgrip. Also that explains that just like artificial fatigue could make string pulse condition, real fatigue would cause making string pulse on his or her wrist. So with that way, we could define or diagnose patients' fatigue status with ultra sound results not only with oral explanation. In this study, we verify that string pulse condition could be actualized with ultrasound. As the first study for actualization only with string pulse, there is more need to experiment actualizing with other pulses.

Key words: pulse condition, string pulse, ultrasound, pulse actualization, fatigue

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Natural Resource Management using Participatory Process of Youth Volunteer in Community

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Abstract
The purposes of this research were 1) to study the state of area, water and community potential, 2) to develop and propose the method of natural resource management using participatory process of youth volunteer in community. Action research and quantitative research were used and research tools were interview form and questionnaires. Data were collected from in-depth interview, focus group discussion and quasi-experimental design. Qualitative data from 31 key informants was analyzed by using content analysis whereas quantitative data collected from 134 samples was analyzed by using descriptive statistics. Results indicated that 1) the area and water in community has only one source of water, and it was not enough for utilization. They could not save the water during flooding season. Therefore, the leader of the community tried to find the best way to preserve water using technique of adding water to underground and making life dam in order to slow down water. 2) Five steps of natural resource management process using participatory process of youth volunteer in community consisted of (1) pre-research plan, (2) planning, (3) action plan, (4) implementation, and (5) follow up. Results of post-test and follow up showed higher score than pretest at significant level of .05.

Index Terms
Natural Resource Management, Participatory Process, Youth Volunteer

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Watermarking Scheme for using YCbCr Based On 2-Level DWT

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Abstract
Multimedia data for both personal and commercial purposes is now accessible to everyone due to the rapid development of the Internet. Consequently, the issue of copyright protection has surfaced and has triggered the development of several techniques for multimedia copyright protection. Such techniques include digital watermarking in which the important information contained in the host media is concealed by embedment in carriers such as images, videos, or audios. In this paper, the adaptive color image watermarking technique is proposed for the satisfaction of both imperceptibility and robustness demands. There are two main stages involved in this technique – coding/embedding and decoding/extraction. Prior to the coding stage, imperceptibility and robustness are preserved by first converting the host image from RGB to YCbCr color space before selecting the Cb component to apply the DWT embedding technique. Once more, the selected quadrant of the hosted image is decomposed using DWT before extracting the watermarked image. The robustness and efficiency of this technique were proved by exposing the watermarked image to six types of attacks, namely Median filter, Gaussian noise, Sharpening filter, Salt & Pepper Noise, JPEG Compression, and Rotation. The results of the study were benchmarked against other methods that deploy DST on the same images. From the benchmarking process, the proposed algorithm was found to withstand the six types of attacks earlier mentioned and achieved a better performance compared to the DST approach. The quality of the watermarked image was also preserved in the proposed method.

Keywords
Watermarking, Discrete wavelet transform, YCbCr image, discrete slant-let transform

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Comparison of CO Adsorption on Undoped and Ti Doped ZnO Surface: A Density of Functional Study

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Abstract
In this works, we have employed the density functional theory (DFT) calculations with the generalized gradient approximation to investigate the carbon monoxide (CO) adsorption on undoped and Ti (Titanium) doped ZnO surfaces. In performances, the positions of atomic zinc (Zn) on ZnO surfaces were substituted by atomic Ti to find the model of Ti doped ZnO surface, namely Ti-D-ZnO. Continuously, the CO adsorption on undoped ZnO surface and Ti-D-ZnO model were examined to compare together, respectively. Further, the effect of Ti dopant on CO adsorption sites and bonding energies were studied also using density of states (DOS) and electron density difference (EDD) contour plots. The results of adsorption energy pointed out that CO adsorption on Ti-D-ZnO was more stable than the undoped ZnO surface. Interestingly, we found that the Ti doping can significantly modify the chemistry and improves the adsorption properties of ZnO surface.

Keywords
undoped ZnO surface; Ti-D-ZnO, DFT, CO adsorption, DOS

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Advanced Detection of Bone Injuries Using Radiology Applications

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Abstract
Diagnosing moment breaks in the instances of pelvis bone wounds is basic for quick and effective patient treatment. Moment break discovery utilizing x-beam pictures can be testing and tedious to analyze because of their low goals and divergent visual attributes of cracks by their position. The pelvis bone is most thick because of which visual recognition of the break is troublesome. This paper introduces a break location method for the pelvis bone just as pubic ring utilizing Distance Regularized Level Set Evolution (DRLSE) strategy for division and identification of crack utilizing Canny Edge locator and angle procedure. Additionally examination of removal of the pelvic bone is finished utilizing Gray Level Co-event Matrix (GLCM). Results so far have been empowering and will be useful in controlling the doctors and for better treatment of the patients.

Keywords
Medical image processing, Bone fracture, X-ray image.

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Study of the readiness for digitalization of the industrial enterprises in the North-Eastern Region

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Abstract
Digital transformation is a strategic process in which (responding to growing business challenges) business organizations use digital tools in their business activities. In this regard, it is crucial to determine the extent to which business organizations "industrial enterprises" are ready to digitize their processes. Therefore, the purpose of this publication is to examine the readiness for digitalization of industrial enterprises in the Northeast Region (NER) of Bulgaria

Index Terms
digitalization, industrial enterprises, internal processes, labour market

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Digital Technology Innovations and Information Security Policy Impact on Healthcare Transformation in Developing Countries

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Abstract
Digital healthcare technologies in developing countries face the challenges of information security (technical and behavioral). Healthcare digital transformation plays a pivotal role in the improvement of the healthcare Performance system. New impacts of emerging technology patients in the electronic health record, risk management, security tools, big data, cloud computing, and all elements needed for better information security. This paper is a simple literature review of information security impacts and involvements in digital healthcare transformation. The literature review revealed that healthcare information security factors have a positive effect on digital healthcare transformation.

Keywords
Emerging Technology, Healthcare, Digital transformation, Information security.

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Information Security Behavior of IT Professionals (Role of Polices and Compliance

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Abstract
Information security seems to be a technical subject, but it is as behavioral as technical. Most of the security breaches occur due to the negligence of internal employees towards information security policy. Lack of compliance with information security policies is a multidimensional problem, and It requires technical and behavioral solutions. There is plenty of research available for behavioral information security, but most of the research is conducted upon non-IT (information technology) users or non- Specialized users. This research paper is a pilot study for testing the information security policy compliance of IT professionals. Hypotheses were formulated from the literature review, and a framework was developed. The framework consisted of organizational management constructs and two behavioral theories (protection motivation theory and theory of planned behavior). This pilot study showed that organizational management can enhance employees' protection motivation, which later cultivates good information security behavior towards information security policy compliance.

Keywords
Information Security Behavior, Information Security Policy Compliance, Protection Motivation, Organizational Management

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The Development of Online Training Curriculum base on Micro Learning and Online Social Network for Teacher in 21st Century in Test Construction Topic

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Abstract
The objectives of this research were 1) to develop the online training curriculum based on Micro Learning and Online Social Network for 21st century teachers on test creation, and 2) to evaluate the effectiveness of the online training curriculum based on Micro Learning and Online Social Network for 21st century teachers on test creation. The methodology was divided into 2 steps: Step 1 was the development of the online training curriculum based on Micro Learning and Online Social Network for 21st century teachers on test creation by studying the problems and demands in examination creating including the demand on online training for Bangkok schools' teachers and executives using questionnaires. After that the information data gained from step 1 was used to design and develop the training curriculum then quality checked by the expert. The result found that the developed online training curriculum was in the highest suitability level. Step 2 was the effectiveness evaluation of the online training curriculum based on Micro Learning and Online Social Network for 21st century teachers on test creation by using the developed training curriculum with 30 Bangkok teachers from simple random sampling from the respondents in step 1 and willing to participate in online training on test creation.
The result found that 1) the evaluation on the teachers' test creation ability compared to the ability before and after joining the training from development scores of each trained teacher – 2 teachers (6.67%) performed very high development, 21 teachers (70.00%) performed high development and 7 teachers (23.33%) performed moderate development and 2) the quality evaluation in accordance with the assessment standards of The Joint Committee on Standards for Educational Evaluation which was evaluated by 30 participating teachers and executives of the 30 teachers were in good level for 4 standards. The standard with the highest mean was propriety standards ("$\bar{x}$" = 4.78). The next one was feasibility standards ("$\bar{x}$" = 4.74), Utility standards ("$\bar{x}$" = 4.71) and accuracy standards ("$\bar{x}$" = 4.64), respectively.

Keywords
Training curriculum, Online training curriculum, Micro learning

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Exploring the antecedents, drivers, and outcome of Behaviour-based safety: A literature review

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Abstract
Organisations good at managing safety tend to manage operations well. Safety culture is a subset of organisational culture and is the observable degree of effort with which all the organisation members exert their attention and action towards safety. People neither deterministically controlled by their environments nor entirely self-determining. They are in a state of reciprocal determinism with their settings, where they and their environments influence one another. Safety leadership can positively impact an individual's safety-related behaviour by up to 86% and reduce accidents by around 35%. Evidence directs us towards safety culture and safety leadership as prominent precursors to workers' safety behaviour (WSB). This study conducts a rigorous review of approximately 20-25 published papers from 2000 to 2019, related articles in books and articles published in the corresponding field journals. The research evidence shows that Cooper's reciprocal model of safety culture encompassing psychological, behavioural and situational factors is well supported by most studies. They offer non- existent to a weak relationship between psychological factors and strong and steady situational and behavioural factors with the safety outcomes. Organisations should concentrate 80% of their safety culture improvement efforts on situational and behavioural factors to prevent process safety and SIF'(Significant incidents and fatalities). Behavioural-based safety (BBS) process serves as a comprehensive tool in altering at-risk behaviour positively. BBS will help the practitioners design enhanced BBS intervention for a more sustainable and persistent impact on workers' safety behaviour (WSB). Further research should be undertaken to establish the empirical links of safety culture and safety leadership constructs with safe outcomes.

Keywords
Safety culture, safety leadership, safety performance, Behaviour-based safety.

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Blind Aid Stick: Hurdle Recognition, Along With Voice Based Cooperation Via GPS & GSM & Panic Alert System

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Abstract

Blind aid Stick is a break-through technology in navigational and reconstructive aids for the blind and visually impaired. It is developed to communicate using voice-based guide for users in order to have easy mobilization. Ordinarily available systems in the out-door environment are expensive and its designing is time consuming. Blind people have extensive drawbacks as they cannot detect the obstacles and dangers. They have little information about data such as landmarks and self-velocity Information .This blind stick provides easier route to blind persons, by designing a cost-effective and more flexible navigation system .This helps them to move independently without any manual help or guidance. There are few latest technologies which are now available in market to cater the needs yet they have their particular drawbacks. Hence, one of the competent solutions is to use embedded system. Blind aid Stick will be a powerful tool and it is very helpful for visually impaired, in achieving fully independent navigation for those with visionless and blindness to move freely, safely, and independently.

Keywords

ARDUINO MEGA, sensors (like ultrasonic, water, flame, IR remote receiver) and jumper wires for connection, GPS, GSM, stick.

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Design of IoT Development Board using Arduino Raspberry Pi and its Applications

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Abstract

The Internet of Things (IoT), which refers to the growing number of devices connected to and able to exchange data over the internet, could add a new dimension—literally speaking—to what we expect from a well-rounded computing professional. Electronics and communications engineering education is responding to these demands by adding IoT-centric courses to the curriculum and integrating relevant content into existing courses. This project presents the steps taken to introduce IoT development board and IoT projects into an existing Systems Programming course. The Arduino and Raspberry Pi provide a sampling of student projects implemented using the two hardware platforms, along with discussions about lessons learned from these implementations.

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