

RESEARCH CONNECT @DUBAI



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CONTENTS

- 5** Editorial
- 6** Together in Research
- 7** Mission & Objectives
- 8** RSC Editorial Board
- 9** RSC Members
- 10** Mobility in the UAE
- 17** Industry News & Knowledge - Based Economy
- 46** News & Events
- 70** Highlights of Students and Staff Achievements

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EDITORIAL

Many of us take for granted our ability to travel across the globe, to purchase goods and services internationally and have them delivered overnight, and to communicate seamlessly around the world. We should remind ourselves though, that a few generations ago this would have been unthinkable. This ability to move freely and easily is the essence of mobility. In a broader sense, mobility encompasses more than just the movement of people, and includes the movement of goods, services as well as ideas. Mobility gives us easier access to markets, knowledge and innovation. It covers elements of transportation, travel, personal mobility, logistics and digital connectivity.

Dubai itself has been leading the way in mobility, connecting the world through the development of a modern infrastructure contributing to the country's economic growth and enabling international economic integration. The Dubai International Airport for example, is now the world's busiest by international passenger traffic and the third busiest airport in the world by passenger numbers. Similarly, the Jebel Ali Port is playing a significant role in facilitating global trade allowing Dubai become the third largest re-export hub in the world.

This third edition of the Research Connect @ Dubai publication brings you news of the various research activities in the area of mobility as well as news of more general research, projects and achievements across some of our local University branches. We hope you find the news items and articles of interest.



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TOGETHER IN RESEARCH

Dubai is witnessing a great moment in higher education and research. International branch campuses are coming together to build a community that will enhance research and collaboration with industry, and contribute to the goals of Expo2020. Research Connect @Dubai is an innovative model to create and showcase research opportunities across Dubai's campuses, ultimately leading to a stronger and more diversified economy.

When we consider the Expo2020 motto of 'Connecting Minds, Creating the Future,' it becomes clear its heart lies in education; in collaboration and in innovation. Reflecting these, Research Connect @Dubai will convene the public and private sectors to conduct research that will lead to greater innovative practices for the benefit of Dubai and its people.

Dr. Warren Fox
Chief of Higher Education
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RESEARCH STEERING COMMITTEE (RSC)

Mission

To promote the advancement of research and innovation that serves Dubai and the UAE community at large.

Objectives

1. Provide a platform to:
 - a. Share information and experiences that encourage research and innovation
 - b. Forge mutually beneficial partnerships in research and innovation through collaboration of skills, knowledge and resources
2. Promote Dubai as a centre of excellence for the advancement of research and innovation
3. Facilitate collaboration with industry, government, and other stakeholders to promote multi-disciplinary research
4. Seek out opportunities for global engagement in research and development.

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Traffic Congestion – Economic Impact and How Technology Can Help Address This Enigma?



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The purpose of this article is to briefly address the growing problem of traffic congestion worldwide and with references to local perspectives, address the typical economic impacts caused by it in relevance to the causal factors. This article also looks at the sources of data on such traffic congestion, current solutions elsewhere and proposed ideas to address these challenges. In this process, it also explores the possibilities of significant roles that can be played by academy and industry in this ever growing issue.

Traffic Congestion

Traffic congestion is a growing problem worldwide, especially in urban areas. It is an unavoidable result of continued economic growth and uncontrolled increase in urban population. Movement of people from one city to another and from interior parts of countries towards cities in search of better opportunities and livelihood leads to urbanization. Such mass urbanization and population explosion are few of the leading causes of traffic congestion combined with the effects of such people resorting to drive all the time rather than using alternate modes of transport. Such an effect gets even more amplified when vehicles are inexpensive, fuel costs are cheap combined with an excellent road infrastructure and connectivity.

Worldwide Perspective

There are detailed and analytical sources of data such as TomTom Traffic Index (TomTom Traffic Index) published to provide drivers, policy makers and industry with detailed information on congestion levels in urban areas. These resources, in addition to providing insights on why cities

are congested, they also offer suggestions to ease the situation. There are also awards presented to cities that put in significant efforts to avoid such issues. The measures provided are relative time it takes to navigate through traffic during peak hours in contrast to non-peak hours. These studies take into account of highways, arterial roads and local roads.

There is also another leading source of such data such as the INRIX 2016 Global Traffic Scorecard that uses latest methodologies such as big data analytics to gather and publish data on urban traffic in over 1000 cities around the world. It considers average hours spent due to congestion for thousands of cities around 38 countries and also the percentage of time spent in traffic (INRIX Global Traffic Scorecard).

Studies such as the above point to significantly higher and raising costs of traffic congestions, as in one example in the US, it has been estimated that the cost of traffic congestion exceeds \$300 billion per annum in terms of petrol and in consideration of the time it takes to navigate through the traffic. In another example the highest number of hours spent reaches even as high as 104 hours such as in Los Angeles. The estimated cost of such a loss of productivity in this particular case alone is around \$9.7 billion per annum.

Local Perspective

From a Middle East perspective, in the INRIX scorecard of 2016, Riyadh, Saudi Arabia ranks 39, Dubai, United Arab Emirates ranks 81 and Jeddah, Saudi Arabia ranks 84 in the overall scores.

Economic Impact

In order to address this significant problem of traffic congestion it is essential to gather objective and accurately measured data to understand and analyze the real monetary cost of traffic congestion in economies. Such an effort was put forth by a research team of Economic Development Research Group, Cambridge Systematic Inc. and Regional Economic Models Inc. They presented their findings in the form a detailed final report. (Weisbrod, Vary, & Treyz, 2001). This report in eight chapters and two appendices presents details such as summary of prior research, analytic framework, case studies, sketch planning tool and conclusions.

Use of technology to reduce Traffic Congestion:

Many freeways and inner-city roads have become Parking lots. There are many areas that have worked tirelessly to promote public transit, carpooling, and other ways to get around that can reduce traffic congestion. And while many of these ideas work, but the sudden growth in the cities has turned the “traffic headache” into the “traffic migraine.” Use of Internet of things (IoT) and information and communications technology (ICT) can enhance its livability, workability and sustainability. It collects information about itself using sensors, devices or other systems, and sends the data to an analytics system to understand what’s happening now and what’s likely to happen next.”

Two important terms play an important role to find the solution of this problem.

- Vehicle-to-vehicle (V2V) technology is when one vehicle is able to communicate to another vehicle nearby — in front, behind, etc. It’s the core of autonomous driving technology, where sensors can detect what’s going on around the vehicle and additional technology can share that data with other vehicles on the road.
- Vehicle-to-infrastructure (V2I) technology is similar, in that the vehicle is able to send and receive information. In V2I, the infrastructure can include physical things such as traffic signals and weather alert systems. The vehicle can send data out while simultaneously the infrastructure can send important data back.

Some ways to Reduce Traffic Congestion:

1. Adaptive Traffic Signals

Traffic signals are getting smarter through V2I technology. By getting a better idea of traffic flow and how long a vehicle idles at stop lights, the city can better modify traffic signal timing with the changes in traffic throughout the day.

2. V2I Smart Corridors

Adaptive traffic signals are one piece to some smart corridors. Smart corridors can address traffic congested roads as well as hazardous areas. Using V2I technology, the state is implementing a pilot project that would send safety-related weather and accident alerts to drivers volunteering for the program. To do this, short-range communications units can be installed along the highway that can communicate with the other units and the vehicles that have devices installed.

3. Autonomous Vehicle Technology

While autonomous vehicles for the passenger car won’t necessarily decrease the number of cars on the road, with fewer accidents and driver-caused traffic, autonomous vehicles are likely to reduce congestion.

4. Real-Time Traffic Feedback

Real-time traffic feedback also makes concepts like “congestion pricing” a little easier to sell to consumers who’re used to using roads for free. Instead of the typical toll for express lanes, this would change the pricing structure based on peak traffic times and for high-occupancy or exempt vehicles, with the goal of discouraging single-passenger drivers to be on the road at peak travel times.

5. Tracking Pedestrian Traffic

Addressing traffic congestion is also about understanding pedestrian traffic. Using V2I technology not only we can track how many vehicles go through a given intersection at different times but how many pedestrians are crossing streets so the city can reroute vehicle traffic at times of high pedestrian traffic, and so on.

6. Replacing Vehicles with Drones

With the emergence of drone technology, more and more utilities and public energy authorities are using drones to do these regular tasks instead of sending out field workers in a bucket truck.

7. Flying Cars Are Likely Next

While this list didn’t include flying cars, have no fear, companies are looking into it and some even have prototypes.

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Technology and Tourism Mobilities



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The emergence and adoption of mobile and social technologies – including smartphones, tablets, mobile applications, social media, and mobile broadband – have expanded and modified the traditional contours of tourism. These new technologies are reconfiguring the tourists experience and providing both challenges and opportunities for the industry. As these technologies continue to become more advanced and an ubiquitous parts of daily life there will continued spillover between every day and ‘vacation’ contexts. A majority of tourists engage in different forms of virtual, imaginative, and mediated travel today that were considered ‘new’ only a decade ago.

Tourism today is not just about the physical destination, but instead can be viewed as a complex ‘assemblage’ of mobile technologies, technological infrastructure, virtual and networked spaces, and bodies that flow through various mobilities. The emergence of cyberspace has reconfigured and mobilized the concept of space itself, where virtual spaces are configured based on human interest rather than physical proximity. New advancements in social networking technologies have allowed for the decentralization and democratization of tourism information as word-of-mouth communication now moves online. These technologies have sped up and spread out the dissemination of information among tourists. Within the virtual moorings, where tourism communities can (re) assemble online, the powerful force of ‘peer production’ enables individuals to create and engage with user generated content, often while travelling, through mobile devices.

The vast amounts of user generated content combined with the immediate access to this content through mobile devices provides tourists with the ability to ‘see backstage’ and redistributes the power and control of staging and portraying tourism destinations and services. Review websites such as Trip Advisor have tremendous power to impact consumer behaviour because they offer a medium for millions of tourists to provide their own reviews and for these reviews to be corroborated.

Complementary advances in geo-based technology, context-aware mobile technologies with ‘push’ capabilities, recommender and other intelligent information systems, and location-based social networks have allowed for new opportunities for marketers by allowing them to provide real-time recommendations relevant to a individuals exact location that can shape, change, or alter tourists’ spatiotemporal movement at a destination. Recent research has examined how these technologies can help mitigate theme park crowding through systems that offer incentives and information on mobile devices as a means of routing tourists to less crowded areas of the park.

The use of mobile and social technologies has led to augmentation and hybridization of space, as tourists, destinations, and business are producing new types of places and spatial experiences through these technologies. The proliferation of these technologies supports the further problematization of the notion place. Advancements in mobile, social, communication, and location based technologies have augmented and mediated tourists’ senses and experiences of space through emotional, aesthetical, informational, playful and social enhancements. Some researchers have suggested that these advancements allow for tourists to be more creative and spontaneous.

Advances in Location Based Services (LBS) are arguably making places more immersive and captivating for tourists. Location based services have only recently come to prominence. Location Based Services use mobile internet access, Global Positioning Systems (GPS) and a wide range of mobile ‘apps’ to locate and provide location specific information for people. These technologies allow for differentiated forms of personal mobility, personal experience of mobility, and personal control over mobile experiences. All of these geo-based technological advances have been suggested to help tourists to have more meaningful and, even more playful experiences.

Previously, several researchers pointed to the advancement of ‘virtual reality’ as a potential threat to physical travel and

tourism. However, the continued exponential growth of the number of global tourists, despite the continued technological innovations, seems to support the alternative view. While physical travel is likely to continue, the increased popularity and amount of leisure time spent exploring MMOGs (Massive Multiplayer Online Games) and other 3D virtual worlds, has some scholars suggesting that they can be treated as 'digital destinations' and surrogates for corporeal travel experiences. In doing so, a small body of literature has focused on 'virtual reality tourism' within these digital spaces.

Virtual worlds could be developed into 'sustainable tourist spaces' where there is little impact on the natural environment or fragile heritage sites. One of the main disadvantages of travel in virtual worlds, though, is that it does not allow people to develop relationships within the real world, and instead requires full immersion into a simulated environment. New advances in augmented reality (AR), however, may overcome this issue.

Recent advances in the computing power, computer graphics, wireless connectivity, and sensor technologies of smartphones have converged with faster networks and cloud computing to make mobile augmented reality more popular and accessible to a mass market. Augmented Reality mobile apps permit users to browse, search, and overlay virtual 'layers' of spatially relevant information allowing them to browse their surrounding areas through their screens. Many destinations are starting to develop and launch their own Augmented Reality (AR) applications, including Tuscany, Korea, Hong Kong, and Dubai. Trip Advisor has launched a new tool that

allows tourists to take a virtual walk through their destinations with information and reviews superimposed over Street View in Google.

Mobile Augmented Reality (AR) has been used to enhance tourists' experiences through different processes of augmentation that blur the boundaries between physical and imaginary places: narrativization, fictionalization, and the construction of a 'mixed-reality'. Narrativization occurs when tourists' experiences of an objectively authentic place is augmented through mobile technologies. For example, the Museum of London's *Street Museum* Augmented Reality 'app' allows users to point their phone at a landmark, upon which a historical photo and caption is superimposed. Fictionalization is a process of augmenting a tourists experience using a place as a setting for a work of fiction. Many literary and film-induced tourists, or 'set-jettlers', visit locations made famous by popular authors, and mobile Augmented Reality (AR) technologies can now make visits to these 'fictionalized landscapes' more immersive.

Finally, there is also the hybrid mixed reality in which the physical place is augmented with a story space. These can also include the use of Augmented Reality (AR) in the gamification of physical space. The future of Augmented Reality (AR) is already advancing beyond smartphones as wearable mobile technologies are starting to become available on the consumer market. Recent prototypes suggests that there will be further convergence between individuals, technology, and their physical surroundings, leading to important considerations for the future of tourism mobilities.



This article provides a summary of key ideas presented in previously published papers:

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Germann Molz, J. & Paris, C. (2015) *Social Affordances of Flashpacking: Exploring the Mobility Nexus of Travel and Communication*. *Mobilities*, 10(2), 173-192.

Paris, C., Berger, E.A., Rubin, S., & Casson, M. (2015). *Disconnected and Unplugged: Experiences of Technology Induced Anxieties and Tensions While Traveling*. In I. Tussyadiah & A. Inversini (eds). *Information and Communication Technologies in Tourism 2015*, p. 803-816.

CFD Studies on a Ground Transport System (GTS) with a Boat-Tail



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“Mobility” is one of the key themes of the Expo 2020. There are different aspects with respect to this theme, out of which logistics and transportation can be considered as two important ones. It is very important to develop an efficient and sustainable systems for moving physical goods. Heavy vehicles are one of the crucial means of transportation and are used widely in the logistics in most countries. Reduction of fuel consumption in heavy vehicles, when the price of crude oil increased in the 1970s, has been one of the biggest concerns. Approximately 62% of fuel consumption of typical heavy trucks, that are moving with an average speed of 100km/h, is used to overcome resistance (drag) force. In the United States, it is estimated that 12% of drop in fuel consumption of heavy vehicles can save up to 3.2 billion gallons of diesel that emit around 28 million tons of CO₂ annually. Aerodynamic drag is caused by pressure and friction drag. Pressure drag is due to an adverse pressure gradient and friction drag caused by friction between fluid and surface of the body. In tractor-trailer trucks, pressure drag is the dominant contributor (up to 90%) to the total drag. Redesigning front-end of the truck and development of add-on technologies over the years have reduced the drag significantly. These technologies apply basic aerodynamics and result in a significant decrease in drag force and eventually fuel consumption. Front edge rounding, air deflector, tractor-trailer gap seals, boat-tails, side skirts, cab extender, air-dams and roof fairings are the examples that have been under investigation either experimentally or numerically over the past years. Effective results in drag reduction obtained by reducing separation and refining aerodynamic interaction between truck and trailer. Improvements in front and sides led researchers toward the flow associated with the rear end of the heavy vehicles. This area is known as wake region. Pressure drag in this region is caused by pressure difference between front

and rear of heavy vehicles. Therefore, balancing the pressure between upstream and downstream of the heavy vehicles are objective of all the studies conducted in the wake region. Passive flow control of heavy vehicles is being done by use of devices such as boat-tails. Boat-tails can be used as an extension to the square backend of trailers to avoid the formation of unsteady eddies and flow separation, which causes pressure drag. Improving the understanding of typical flow structure especially in wake region and its relationship with drag force is necessary for effective modification of tractor-trailer truck’s aerodynamics. The behaviour of wake can be observed and investigated easier from simplified heavy vehicle geometries rather than more realistic ones. The more accurate model that replicates the dimensions of heavy vehicles has been developed by the Sandia National Laboratories Ground transportation system (GTS). Figure 1 shows a CAD model of the GTS. It is a baseline model of a generic Class-8 van-type tractor trailer. Several numerical simulations, both steady and transient, have been performed on the GTS baseline and with boat-tail models to predict the



Figure 1: GTS CAD Model.

wake structure. In this research, computational fluid dynamics (CFD) simulation is used to capture near-wake structure of the flow at rear of the baseline model and for the first time the boat-tail model at different boat-tail angles and lengths. Adding different configurations of boat-tail for reduction of drag is examined and baseline results agreed with previous studies and showed that the highest drag reduction for the GTS model with boat-tails are occurring at boat-tail angle of around 15°. Further study is underway which soon will be published in the relevant journals in the field. Figure 2 shows a sample of velocity vectors in the wake region of a GTS with boat-tail.

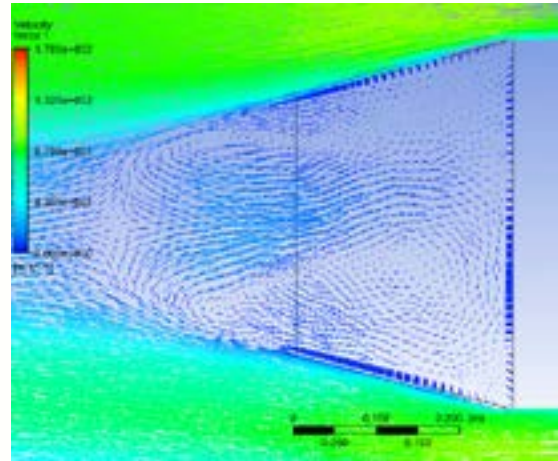


Figure 2: A sample of velocity vectors in the wake region of a GTS with boat-tail.

The Role of Public-Private Partnerships in Building Resilient Infrastructure in Emerging Markets and Developing Economies



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Changes in the social economic structure over the past several decades have led to radical responses toward the economic development policies of many governments. Policy officials at different levels of government have discovered that greater economic development and resilient economic stability might be reached only if a more active approach toward attracting investment is made. Rather than passively waiting for business interests to seize on new incentives in the taxes, public officials proactively court businesses in an attempt to secure contractual agreements. This policy has come to be known as Public-Private Partnerships (P-P-P). P-P-Ps assume that the public and private sectors can cooperate and create new value and benefit for all concerned parties.

The study reviews literature on Emerging and Developing Economies (EADEs), to show how, when and under what conditions P-P-P can be utilized for participating countries. The findings indicate P-P-Ps can contribute significantly to economic growth with proven effective means of bridging gaps between demand and resource, quality, accessibility, risk and benefits. The study concludes that, the ability to share risk with the private sector, tap resources, and profitability from the private-sector investment is contingent to intellectual capital of policy makers, and flexibility in allocating resources.



Smart Mobility : Techno Dream towards Sustainable Societies



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Technology changes incredibly faster with education and on contrary the pace of human and societal change is not at par. Let's understand and evaluate the challenges and apply the technological knowledge to create and shape the mobility of tomorrow. Convergence of physical and digital world is expected to bring forward a share of challenges, intuitive controls aiding much smarter mobility systems. Smart mobility systems (SMS) aims for improvising the lives of people with aid of modern technologies.

Integrated multimodal transportation system, connectivity and interaction with built environment, vehicle automation and decision science designed to steer individuals towards energy efficient travel choices with improvised quality of personal trips and overall transportation system.

Smart mobility systems crafted to needs and the palate of people, natured with limited mobility, sensory disability and intellectual disabilities including motorized beds and automated bathroom facilities, security systems with CCTV,

mobility enhancing systems like smart chairs revolutionizing their lives to simpler and fuller automated.

Concept of smartness needs to go a way beyond the technologies to get integrated into social and political aspects. Smart government, smart economy, smart living, smart eco-system, smart environment are the leads towards smarter mobility and smarter society. Smart systems with multimodal aspect on agriculture entrepreneurship, banking, are estimated towards secured, flexible and convenient technologies to integrate into society.

Though Smart systems deliver greater independence to complete everyday task with lesser efforts, connect people, we

all need to reiterate the statement -Technology is a useful servant, but remember it is a dangerous master, imposing smarter human beings as masters. We hope everybody remembers the entry of Short Message Service (SMS) connecting people with ease. So why not ease our lives smartly with new SMS - Smart Mobility Systems?



ARTICLES

AI Powered Candy Dispenser

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The AI candy dispenser was an interactive game that quizzed visitors at the 20th Water, Energy, Technology, and Environment Exhibition (WETEX 2018). They had to show a particular picture within a limited time. If they succeeded, they were rewarded with some candy. For example, the machine would ask a user to show a picture of a watch and the user has 30 seconds to show either a real watch or a picture of the watch. If they showed the correct picture in the given time, they were rewarded with some delicious candy! However, if they showed the wrong picture, the machine intelligently recognizes the item in the image and displays the exact name as well. The machine was built using a Raspberry Pi for the processing, a Pi Cam that takes pictures, speakers to display interactive audio, a Serial 20x4 LCD display to show the game state, transistors to activate the motors, arcade buttons for interaction, servo motors for releasing the candy and a custom wooden build. The game was programmed in python and Google's Cloud Vision API was used for the image recognition & processing.

The idea could easily be extended to perform more intelligent applications such as dynamic advertising, smart security cameras and emotion detection.

Bank Ownership, Regulation and Efficiency: Perspectives from the Middle East and North Africa (MENA)

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We examine the effects of bank regulation and ownership on the efficiency of banks in the emerging MENA region. The public and private view of bank regulation in regards to bank efficiency is tested along with the interaction of bank regulation and ownership on cost efficiency using data envelopment analysis (DEA) methodology and a one-step maximum likelihood approach. Results suggest that both ownership concentration and official supervisory power individually and interactively exert a positive influence on cost efficiency. In addition, government ownership has a positive effect on cost efficiency, and this effect is reinforced with higher activity restrictions. Moreover, capital stringency has a positive effect on cost efficiency, whereas deposit insurance has an opposite effect. Also, the market power of a bank is found to have a positive association with cost efficiency. Altogether, our

evidence suggests that the regulatory reform initiatives in the MENA region show some positive outcomes to relation to positive effects of capital regulation and supervisory power on cost efficiency, and thus provides support for the 'public interest view of bank regulation'.

Full reference of this paper: Haque, F. & Brown, K. (2017) Bank Ownership, Regulation and Efficiency: Perspectives from the Middle East and North Africa (MENA) Region. *International Review of Economics and Finance*, 47, pp. 273–293. <http://www.sciencedirect.com/science/article/pii/S1059056016302404>



Surface Water Data Collection and Processing

Book Chapter by Dr. Rabee Rustum

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Abstract: This chapter provides insight into collecting and properly processing hydrometeorological data and putting the raw data into a usable form. Rainfall is the major input of water to the earth's hydrological cycle, and its measurement and analysis are critical for water resources investigation. The chapter considers various methods for measuring rainfall and common analyses for deriving useful information from the collected rainfall data. It also focuses on field measurements of rainfall and covers the use of remote sensing for rainfall measurement. To measure rainfall, the following instruments are used: standard rain gauge, syphon rain gauge, and tipping bucket rain gauge. Most analyses carried out on rainfall data are shared with streamflow analyses. The chapter further focuses on some analyses methods that are specific to streamflow.

Ojha, C. S. P., Lohani, A. K., Adeloje, A., Kumar Jain, S. & Rustum, R. 26 Oct 2017 Sustainable Water Resources Management. American Society of Civil Engineers, p. 15-50 36 p.

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Research Highlight - Neutrons Delve Deep into Novel Fuel Cell Materials

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Solid oxide fuel cell (or SOFC) have tremendous potential to provide environmental friendly solution to our energy needs. These cells use an electrochemical reaction which produces electricity directly from oxidizing fuel sources. The process is environmental friendly as it does not involve combustion. The applications of these fuel cells range from our everyday transport to heavy industry. Research published in this area by Dr Rehan Ahmed of Heriot-Watt University, along with his colleagues, was included as a "Science Highlight" at the ISIS Neutron and Muon source, which is a Science and Technology Facilities Council, UK. Over 500 research papers are published a year based on work done at ISIS Neutron and Muon Source and the "Science Highlight" articles represent only 10% of these papers. This research considered the durability aspect of the design of these fuel cells by investigating the stress distribution in the SOFC material.

Further details can be appreciated from: <https://www.isis.stfc.ac.uk/Pages/Neutrons-delve-deep-into-novel-fuel-cell-materials.aspx>.



Virtual Reality for Combating Social Awkwardness in Special Needs



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Social amenability remains one of the main factors which employers consider when hiring an employee. Current research shows that the percentage of employment for people with special needs is extremely low. One of the reasons identified by employers is these people lack social skills. Though people with special needs have proven to be good employees, their inability to adapt to a change in social settings hinders their employment, as these skills are highly important in the workplace. People with special needs who are determined to acquire skills despite the challenges they may face are referred to as the People of Determination (POD). With focused training the vital skills for the workplace can be enhanced. An approach that is widely used for training in several industries, and is also a blooming factor in the computing field, is the use of virtual reality for multiple therapeutic, recreational and educative purposes. Virtual reality provides a simulated environment that could be used for training POD by exposing them to a simulated version of the workplace they will be working at. This will help them overcome social awkwardness as it would increase their comfort level in with the workplace, accelerate their adaptability and aid in enhancing their work skills.



The motivation for this research study resonates with the objectives of the policies being implemented by the UAE government for Empower POD.

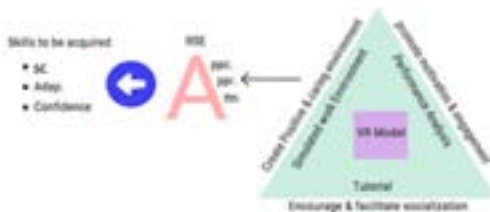
This project aims to bring about innovation to the current training system

in order to achieve enhanced equal opportunity, social inclusion and active participation for the POD.

The study had identified factors that affect the level of social awkwardness in individuals such as Self Concept, Adaptability and Confidence and also the prime features required for improving the mentioned factors as Approval Attention and Appreciation, as Shown in figure 1.

The research study was carried out using a case based analysis. Two case studies were discussed, one on “**Virtual reality in cognitive behavioral therapy: a study on social anxiety disorder**” and the other “**Tolerance of VR system by autistic children**”. The case studies implied that empowerment through enhanced self-concept,

adaptability, motivation and confidence for individuals with special needs is very well achievable. Adaptability is gained when there is more exposure to a certain environment. The frequent use of the VR system would increase the probability of the person’s adaptability levels. The relationship between these three factors is very important, and hence it is very essential to develop them. The study also brought to light that skills learnt in a VR environment can be translated to real life situations. This has formed a base for the objective of this study and the model depicted in Figure 2 was proposed.



It is identified that inequality in job opportunities between different people of the same skill level occurs due to having or lacking social skills. If the POD can master social skills not only do their their chances of getting jobs increase, but they will also have better prospects of job growth. Social skills can be improved with practice just like any other skill. This is possible by extending professional help to people with special needs by encouraging communication on a daily basis. But such kind of help is always not easy and possible, because of a looming fear of embarrassment. This generally holds them back from trying to obtain social skills. However, this is not the case in a Virtual environment where the person has to interact with virtual characters and therefore has no fear of embarrassment.

The research work publication details :

Rahaman S, Ansari Z, Biswas P, Menon S, titled “ Virtual reality for combating social awkwardness in special needs”, June 2017, *Journal of Computer Engineering and Information Technology*, DOI: 10.4172/2324-9307.1000193, (IF : 0.61), Indexed in : index Copernicus



Predicting Mobile Game Success Using Data Analytics

Khaled Al Omari
PhD. in Computer Science 2017



Since the advent of arcade games and the development of the Wireless Application Protocol (WAP) at the close of the millennium, the mobile game app industry has exploded; and subsequently has transformed the ideologies of mobile technology and software developers to forward thinking within the dimension of innovative mobile game development. After the first decade of the new millennium has passed, and after tens of billions of dollars have been realized from mobile game app revenues, a gap in literature remains in regard mobile game user behaviors and successful quantitative methodologies for mobile game app success prediction. Game features and ARM strategies are analyzed and discussed as primary drivers of mobile game app success.

This study addresses these challenges through data driven research of the mobile gaming application market, mobile gaming application features, user acquisition and retention trends, and monetization strategies using the CRISP-DM model for data mining in order to prove a successful method for predictions of mobile game application success. The attainment of the prediction of one mobile game app from a sample of 50 was accomplished by running a batch prediction for the game features dataset, and a separate batch prediction for the user behavior dataset. The lists were then integrated, a final list of games which appeared in both lists was generated for further comparison. According to the prediction model results for the dual datasets, the most successful mobile game app from the 50 game sample was Game of War-Fire Age; the most successful genre was Puzzles, and the most successful developer was EA Sports. The most successful game predictions were extracted and compared to the predominating user behaviors for further analysis and implications. A model of mobile game app success prediction based upon the market values that are created is proposed.

Finding The Path: Challenges Facing The Women Entrepreneurs in The United Arab Emirates

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Abstract: Research interest in women entrepreneurs has prompted a growth in the number of research studies about the issues related to women entrepreneurs. In spite of the significance of this research theme, scant knowledge exists about women entrepreneurs' motivations, challenges, the impediments to advancement, insights about their entrepreneurial careers and still many intriguing questions remain unanswered. To approach this neglected area, the present study endeavors to address this research gap and attempts to investigate some of these crucial inquiries related to women entrepreneurs in Arab countries. More precisely, the purpose of the present study is to undertake research on women entrepreneurs in the United Arab Emirates (UAE) and examines opportunities for advancement and development as well as impediments that may prevent their growth. Recommendations as to how women's entrepreneurship in the UAE might be reinvigorated are offered for the policy makers, and future research questions are suggested. The present study is equally valuable for policy makers in the UAE and researchers wanting to further continue research on indigenous issues related to entrepreneurship. The present study contributes to the body of entrepreneurial literature due to the lack of research into women's entrepreneurial ventures in the Arab region, particularly in the UAE.

Keywords: Women entrepreneurs, 5M model, UAE
Paper presented at the ELLTA Conference in Bangkok, Thailand 25th – 27th July, 2017



An Examination of the Predictive Factors on Students' Motivation for Success in Undergraduate Introductory Mathematics Courses in the UAE

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PhD in Education 2017



The purpose of the study is to examine whether there is a significant relationship between students' motivation to succeed in introductory mathematics courses offered by universities in the UAE as the dependent variable of the research and another five independent variables including cognitive mathematics self-concept, affective mathematics self-concept, extrinsic motivation as expectations of future career and income, students' age, and the number of mathematics courses taken by students. The rationale of the study is based on the significance of mathematics achievements for students and academic institutions in particular, as well as for the society in general.

The study is designed based on a mixed research methodology that employs an explanatory approach. The sample includes 685 students who were registered in different introductory mathematics courses at four academic institutions of higher education in the UAE and participated in completing a survey questionnaire. The quantitative correlation analysis among students' motivation, cognitive mathematics self-concept, affective mathematics self-concept, extrinsic motivation, students' age, and the number of mathematics courses taken by students reveals theoretically consistent interrelationships. The quantitative multiple regression analysis indicates that the five independent variables explain 71.3% of the variation in students' motivation to succeed in introductory mathematics courses. The qualitative analysis of 17 semi-structured interviews is used to refine, enhance, and expand on the quantitative findings. The qualitative findings are discussed in a relationship with several theories and are based on their implications on teaching and learning of mathematics.

Role of Polyhedral Order in Glass to Crystal Transition Dynamics in $Zr_{60}Cu_{10}Al_{15}Ni_{15}$ Glass Forming Alloy*

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Understanding the structural characteristics in bulk metallic glass forming alloys is important in order to understand the atomic origin of its high glass forming ability and associated physio-chemical properties. $Zr_{60}Cu_{10}Al_{15}Ni_{15}$ alloy was cast in a water cooled copper mold. Due to difference in cooling rate the bottom regions of the cast rod shows amorphous phase with randomly oriented short range ordered domains while in the top part of the cast rod having faceted or dendritic crystals of cF96 Zr_2Ni and tP20 Zr_3Al_2 phases were observed. The size of the short/medium range ordered domains is ~ 0.3 nm. Complete structural analysis of the crystalline phases indicates that complex interconnected polyhedral order exists in the crystalline phases which are related to Bernal deltahedra and Frank-Kasper polyhedra.

Correlation with the size of short range ordered regions indicates that similar polyhedra may also exist in the liquid, the specific interaction of which leads to the formation of short range ordered domains and crystal nuclei. Morphology of the crystalline phases indicates strong interplay of solid-liquid interfacial energy; break down of solid-liquid planar interface and solute segregation during solidification and crystal nucleation.

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Stress-Strain Behavior of Zr Based Bulk Metallic Glass Using Object Oriented Finite Element Analysis

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Determining mechanical properties of Bulk Metallic Glasses (BMGs) requires synthesizing of the alloys in bulk form. However obtaining metallic glass in bulk form is quite challenging due to its tendency towards crystallization. In such circumstances it is beneficial to determine the mechanical properties of materials using finite elemental analysis of microstructures. Thus, in the present investigation, using Object Oriented Finite Element Analysis (OOF2) software package, Stress-Strain analysis has been carried out on Zr based BMG to determine such mechanical properties. Specimen of Zr based BMG exhibiting three microstructurally distinct regions amorphous, partial crystalline and crystalline regions was used for this analysis. The Stress-Strain relationship have been estimated for each of the three distinct phases and the results are validated by determining the Modulus of Elasticity for all the phases and comparing it with the available experimental results from Nano-indentation test.

This work is published in Journal of Metastable and Nanocrystalline Materials, ISSN: 2297-6620, 2017, Vol. 29, pp 1-8

Physical and Optical Properties of Bulk and Thin Films of a -Ge-Sb-Te Lone Pair Semiconductors

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Abstract: Physical parameters and their correlation with optical band gap and refractive index for amorphous $\text{Ge}_{20}\text{Te}_{80-x}\text{Sb}_x$ ($x = 0, 2, 4, 6, 8, 10$) lone pair semiconductors were discussed. Using average coordination number lone pair electrons (L) were calculated and found to decrease with an increase in the Sb content. However, L value greater than 3 indicated that $\text{Ge}_{20}\text{Te}_{80-x}\text{Sb}_x$ alloys can retain their vitreous nature. The density of alloys was measured both experimentally and theoretically. Increased density values with the increase of Sb content further accounts for the concurrent increase in the refractive index values. The results were explained on the basis of increased polarizability and larger Bohr radius of Sb. Compactness of the structure was found to decrease with the alterations of the atomic arrangements. Molar volume (calculated from the measured density values) found to decrease with Sb content. The number of atoms per unit volume (N) was calculated, using molar volume and average coordination number and were found to increase. This increase in N accounts for the decrease in the optical band gap. Other optical parameters viz. optical density, penetration depth and Urbach energy were also calculated. An increase in Urbach energy showed the reduction in band tail width with increased defect concentration. Positions of the conduction bands and valence bands were found to shift towards the Fermi edge, which accounts for the reduction in the optical band gap. Chemical Bond Approach (CBA) model was applied to estimate the cohesive energy of the system and found to decrease with the Sb content. A linear relation is found between the behaviour of cohesive energy and band gap (calculated both experimentally and theoretically). Deviation of stoichiometry confirmed chalcogen-rich region for all the compositions. The mean bond energy was found to be proportional to the glass transition temperature and showed maxima at the chemical threshold. The obtained results were discussed in terms of average coordination number or equivalently structure of the glassy matrix, decrease in average stabilization energy, electronegativity and average heat of atomization of the system. In amorphous materials, maximum optical non-linearity has been predicted. To open the prospects of Ge-Te-Sb vitreous system for non-linearity, Sheikh and Bahae relationship was applied, using experimentally obtained parameters, at a telecommunication wavelength. Obtained results showed a decent agreement with values available in the literature at 0.8 eV or 1550 nm. Non-linear refractive indices, almost three orders higher than silica glass, were obtained. These results may lead to yielding more sensitive optical limiting devices, and these glasses may be used as an optical material for a high-speed communication fiber.

Keywords: Glass forming ability, Urbach edge, Band Gap, Cohesive energy, Glass transition temperature, non-linearity

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Single and Multi-Objective Design Optimization of Plate-Fin Heat Exchangers using Jaya Algorithm

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Plate-fin heat exchanger (PFHE) is a compact heat exchanger which is widely used for the thermal systems. PFHE is used to recover the thermal energy between two fluids available at different temperatures. The design of heat exchanger includes many geometric and operating parameters for a heat exchanger geometry which fulfills the thermal energy demand within the given constraints. These heat exchangers are used as process equipment in the industries of petroleum, petrochemical, chemical and power generation. Extended surfaces or fin elements are introduced for increasing the heat transfer. Fin height, fin pitch, fin offset length, hot and cold stream flow length and non-flow length are the major parameters of the PFHE. The selection of proper combination of these parameters depends

upon the pressure drops, temperatures, thermal stresses, and dynamic properties of fluids. A designer applies his/her cognition, experience, and judgment for assigning the parameters and designing an effective heat exchanger. However, it is difficult even for the experienced designer to consider all these parameters together due to the size and complexity of the designing task. In recent years the application of advanced optimization algorithms for design problems of PFHE has gained much momentum.

It is observed from the literature review that different researchers had used advanced optimization algorithms like simulated annealing (SA), genetic algorithm (GA) and its variants, non-dominated sorting algorithm (NSGA-II), particle swarm optimization (PSO) and its variants, improved harmony search algorithm (IHS), teaching-learning-based optimization (TLBO) algorithm, differential evolution (DE) algorithm, biogeography based optimization (BBO) algorithm and imperialist competitive algorithm (ICA) for the design optimization of PFHEs. These advanced optimization algorithms have their own merits but they require tuning of their specific parameters. For example, GA requires tuning of crossover probability, mutation probability, selection operator; NSGA-II requires crossover probability, mutation probability, simulated binary crossover operator parameter, etc.; PSO requires inertia weight and social and cognitive parameters; harmony search algorithm requires harmony memory consideration rate, number of improvisations, etc.; BBO algorithm requires immigration rate, emigration rate, etc. Similarly, ICA and DE algorithms have their respective specific parameters to be tuned for effective implementation. These parameters are called algorithm-specific parameters and need to be controlled in addition to the common control parameters of population size and the number of iterations. All population based algorithms need to tune the common control parameters but the algorithm-specific parameters are specific to the particular algorithm and these are also to be tuned as mentioned above. The performance of the optimization algorithms is much affected by algorithm-specific parameters. The proper tuning of these parameters is very much necessary. Increase in the computational cost or tending towards the local optimal solution is caused by the improper tuning of these parameters. Hence, to overcome the problem of tuning of algorithm-specific parameters, TLBO algorithm was proposed which is an algorithm-specific parameter less algorithm. Keeping in view of the good performance of the TLBO algorithm, another algorithm-specific parameter less algorithm has been recently proposed and it is named as Jaya algorithm. This algorithm is used in the present work for design optimization PFHE systems.

Four cases namely, minimization of total annual cost, total heat transfer area, pressure drop and maximization of the effectiveness are considered. Single- as well as multi-objective optimization is carried out. The ability of the proposed Jaya algorithm is demonstrated and the performance results are compared with those obtained by the previous researchers using hybrid GA, ICA, HCQPSO, IHS and BBO algorithms. There is significant improvement observed in the results in comparison to the results of the previous researchers. Multi-objective optimization is also carried out by optimizing the four objectives simultaneously. The Jaya algorithm converges to the optimum value of the objective function within quite a few generations. The concept of Jaya algorithm is simple and it can be easily implemented. These characteristics enhances the applicability of the Jaya algorithm specially in the field of thermal system design, where the problems are usually complex and have a large number of design variables and discontinuity in the objective function. The Jaya algorithm may be easily modified to suit the various thermal systems optimization problems.

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Modelling the Fragility and Resilience of Enterprises

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This study attempts to expand the existing literature on assessing enterprise fragility and enterprise resilience and their impact on risk management performance. This research employed a quantitative method to collect data from risk management practitioners. It attempted to investigate the contribution of risk events on inducing enterprise fragility. In addition, the research attempted to investigate the contribution of risk attributes on enhancing the enterprise resilience to the risk events that induce enterprise fragility. Severity indexes, exploratory factor analysis and confirmatory factor analysis were conducted to rank and reduce data. Moreover, structural equation models were developed to explore the root-causal relationship that links enterprise fragility and enterprise resilience to risk related managerial performance.

The research findings showed that risk events that induce the fragility of enterprise strategy are grouped into three latent variables: business models and plans, financial and strategic innovations, and globalization and politics. Risk events that induce the fragility of enterprise governance are grouped into three latent variables: risk guidelines, risk auditing and risk communication. Risk events that induce the fragility of enterprise operations are grouped into four latent variables: internal processes, people, systems, and external events. Risk events that induce the fragility of enterprise business units are grouped into two latent variables: failure of business processes and mis-utilization of assets. Risk events that induce the fragility of enterprise projects are grouped into four latent variables: risk monitoring, project scope, risk responding and risk integrating. Attributes that enhance enterprise resilience to risk events that induce enterprise fragility are grouped into five latent variables: risk governance, risk appetite, risk informed decision-making, risk culture, and risk policies design.

Furthermore, structural equation models have been converged to show that enterprise fragility can impact risk management performance and so can enterprise resilience. The results show acceptable model fitness for the fragility of strategy, the fragility of governance and the fragility of business unit and so is the case for resilience.

This study contributes to knowledge by presenting a conceptual model to assess enterprise fragility, and it incorporates different enterprise levels. This assessment tool will help practitioners to scale how fragile an enterprise is, and so they can anticipate the enterprise robustness and resilience. For future research, it is recommended to develop a resilience or anti-fragility assessment tool in order to show the other side of the coin. In addition, it is recommended to do similar studies on sector levels to consider the specific conditions of each sector.

Evolution of Robotics in Medical Surgeries and Health Care Systems

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Latest trends in engineering gives an outlook to the progressive use of Robotics in medical surgery and health care since its onset in the late 20th century. The introduction of robots in surgery began in 1985 that used a surgical arm to perform a brain biopsy using a CT scan. Although it has been dilatory to enter the field of medicine, it is one of the most talked about approach in surgery today. Robotics have been used in several areas of surgical work, namely, neurology, cardiology, orthopedics, a wide range of organ-ectomies, building artificial bones & muscles (prosthetics), emergency response, laparoscopy and so on. The popular surgical instrumentations include the DaVinci system (pioneered by an American company- Intuitive Surgicals) and the Zeus system. As of then, they have revolutionized the medical field by overcoming various challenges met during human-assisted surgeries. Other innovative surgical projects are High-Performance-robotic Muscles, Anthropomorphic Robotic Bones etc. Advantages of using these are high precision, better dexterity etc. It has also paved its way in healthcare sciences and are to date used critically in pharmacy, telehealth etc.

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Damage Inspection and Online Monitoring using Lamb Waves: A Comparative Study on Aluminium and Composite Plate Structures



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Prof. Anil Sequeira



Mr. Marian Jose



Ms. Gautami Golani

Structural damage is an important criterion that can affect the system performance and degrade its ability from its original condition. When it comes to an aircraft, it is the wings of the aircraft that is prone to more damages compared to the body since the wings provide overall structure stability to the aircraft. It is thus mandatory to monitor the surface of the aircraft wing periodically in search of new damages or changes occurring in the wing structures. The term Health Monitoring systems is introduced in these precepts, that are useful in identifying damages in aircrafts, space crafts and mechanical infrastructures by taking periodic measurements with the help of various transmitters and sensors. Waves are allowed to propagate through the wing surface and the deviations occurring in the frequency of the waves are recorded and compared which helps in determining the various types of damages that occur. This is achieved by making use of lamb waves (also named as guided plate waves). This technique helps in the health monitoring of aerospace and mechanical structures, by using the wave propagation method and the use of piezo-electric wafer active sensors. Results have been validated by experimental and analytical calculations and the proposed method shows enhanced performance in the detection of cracks on the structural surfaces.

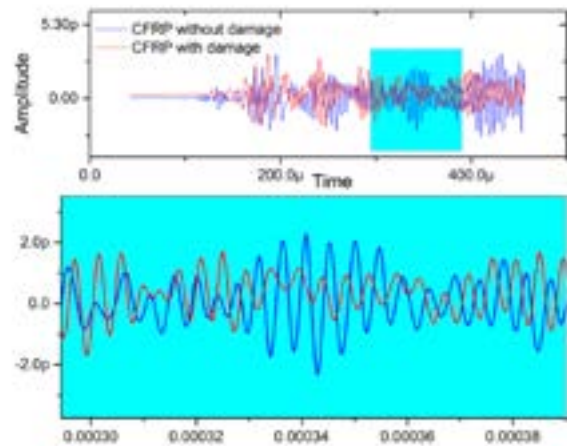


Figure 1. Detection of crack in Carbon Fiber Reinforced Polymer plate using Lamb waves

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Thermal Performance of Parked Cars in the United Arab Emirates

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Abstract: It is well known that the temperature within cabin of a car rises rapidly when the car is parked during conditions of even moderate solar radiation. The temperature levels reached mean that the vehicle is uncomfortable for returning occupants and can be lethal to children or animals left in the car. In the UAE, particularly during the summer months lethal temperature levels can be reached in a very short time. Various methods of mitigating the temperature rise are available. While these techniques may reduce the temperature and thus improve comfort for returning occupants, no passive method should be considered as providing safety for children or animals in a parked vehicle. In this paper the effect of a windshield interior sunshade is discussed. The results are presented in such a way that the effect of the sunshade or other modification can be isolated from variations in ambient conditions.

15th UK HEAT TRANSFER CONFERENCE, UKHTC2017, Brunel University London, 4-5 September 2017



Quadrotor Control Using Adaptive Fuzzy PD Technique

Muhammad Awais Sattar, Dr Abdulla Ismail
International Research Journal of Engineering and Technology (IRJET)



Abstract: Quadrotors have a variety of applications in real time e.g. surveillance, inspection, search, rescue and reducing the human force in undesirable conditions. Quadrotor UAV is equipped with four rotors for the purpose of stability but this will make quadrotor more complex to model and control. In this paper, intelligent controller is designed to control attitude of quadrotor UAV. The paper presents a detailed simulation model for a Quadrotor UAV and Adaptive Fuzzy PD control strategy is designed to implemented for four basic motions; roll, pitch, yaw, and Z Height. The controller presented in this paper is very simple in structure and it is easy to implement. The main objective of this paper is to get the desired output with respect to the desired input. Simulink model and results are shown at the end of the paper

Key Words: Quadrotor, UAV, Adaptive Fuzzy PD, Dynamics, Roll, Pitch, Yaw

The Effect of Stakeholder Integration on Open Innovation in Construction Projects

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PhD in Project Management 2017



This thesis investigates the effect of stakeholder integration on innovation effectiveness in an open innovation context in sustainable construction projects. It delivers an original contribution to knowledge by developing an empirically validated conceptual model that consists of the main factors that have an influence, and are influenced by, stakeholder integration. These factors, namely leadership for innovation and team identity, were identified and synthesized through a comprehensive review of the existing literature. This specific research intent arose from the noticeable lack of empirical studies relating these aspects and the continuous pressure on the construction sector to keep up with the competitiveness in the market as nations have raised their awareness of sustainable development, globally. The multidisciplinary and multi-party nature of construction projects, especially

larger projects, necessitates a well-established framework to integrate the complex network of stakeholders for delivering successful innovation in their projects. To facilitate the analysis of the conceptual model, the research adopts a constructivist qualitative approach and analyses data obtained from three case studies through 38 semi-structured interviews. To ensure the validity, triangulation of three methods of data collection was obtained and rich and thick description of the three cases was provided. The validated conceptual model concludes that stakeholder integration in innovation projects is highly induced by leadership and that these two aspects influence the identity of the team and their perception about the innovation, which consequently affect the effectiveness of the innovation. These factors are in turn influenced by the extent of personal interest in the innovation. The findings of this research provide critical understanding of how stakeholder integration can lead to better management of innovation in general and the conceptual framework can assist construction firms and projects with diagnosing the contextual conditions of their innovation practices. It also can guide firms on their innovation strategies and ultimately increase their effectiveness by identifying the factors that enhance leadership for innovation, stakeholder integration, team identity, and consequently achieve an effective innovation.

6th Annual International Conference on Journalism & Mass Communications (JMComm 2017) 9th - 10th October 2017, Singapore.

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Abstract: Social media platforms such as Facebook and Twitter have emerged beyond sites not only for social contacts but also as a source of information on politics and public affairs. The world of socialized media is maturing, and its users are discovering new ways to find news or see news partly by accident. Global trends show that online news websites and social media are valued more for serendipity (alerting audiences to stories they didn't know about). In this study, we investigate the emerging trend of news access in the UAE. Specifically, we propose that serendipity in news access on social media and online news sites is significant from active pursuit of news on traditional mainstream media. The research frame is validated with survey data collected from 385 UAE residents. The results provide general empirical support for our hypotheses. The study highlights the discussion about Facebook's algorithm and news selection as primary concerns for news organization globally.

Pitch Control of Wind Turbine Through PID, Fuzzy and an Adaptive Fuzzy-PID Controller

Silpa Baburajan, Dr. Abdulla Ismail

International Research Journal of Engineering and Technology (IRJET)



Abstract: Recently, the renewable energy, especially wind energy, has been paid much attention due to the energy shortage and environmental concern. As the penetration of the wind energy into the electrical power grid is extensively increased, the influence of the wind turbine systems on the frequency and voltage stability becomes more and more significant [1]- [4]. Wind turbine rotor bears different types of loads; aerodynamic loads, gravitational loads and centrifugal loads. These loads cause fatigue and vibration in blades, which cause degradation to the rotor blades. These loads can be overcome and the amount of collected power can be controlled using a good pitch controller (PC) which will tune the attack angle of a wind turbine rotor blade into or out of the wind. Each blade is exposed to different loads due to the variation of the wind speed across the rotor blades. For this reason, individual electric drives can be used in future to control the pitch of the blades in a process called Individual Pitch Control. In this thesis work, a new pitch angle control strategy based on the fuzzy logic control is proposed to cope with the nonlinear characteristics of wind turbine as well as to reduce the loads on the blades. A mathematical model of wind turbine (pitch control system) is developed and is tested with three controllers -PID, Fuzzy and an Adaptive Fuzzy-PID. After comparing the three proposed strategies, the simulation results show that the Adaptive Fuzzy-PID controller has the optimum response as it controls the pitch system as well as the disturbances and uncertain factors associated with the system.

Key Words: Energy, Wind-Power, Pitch Controller, PID, Fuzzy Controller, Adaptive Fuzzy-PID Controller.



Spatial and Temporal Trend Analysis of Long Term Rainfall Records in Data-Poor Catchments with Missing Data, a Case Study of Lower Shire Floodplain in Malawi for the Period 1953-2010

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Abstract: This paper investigated the long-term trends in precipitation from 16 stations located in the lower Shire catchment in Malawi over the period 1953-2010. Annual trend analysis was first considered, and in order to take into account seasonality and serial correlation, the different months of the year are considered. Trend significance was determined using the nonparametric Mann-Kendall (MK) test statistic while the determination of the trends magnitudes was achieved using Sen's slope method. The homogeneity of trends was examined using the Van Belle and Hughes method. The results indicate that 20 annual precipitation has increased, whereas, monthly precipitation revealed an upward trend in wet seasons (November to April) and a downward trend in dry seasons (May to October). The monthly peak trend analysis has shown upward trend in rainy months at all stations.

Rustum, R., Adeloje, A. J., and Mwale, F.: Spatial and temporal Trend Analysis of Long Term rainfall records in data-poor catchments with missing data, a case study of Lower Shire floodplain in Malawi for the Period 1953-2010, Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2017-601>, in review, 2017.

Challenges Faced for Micro-Tunelling Works in Jadaf, Dubai for Long Drive on Large Scale Projects (Case Study)

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Abstract. This paper presents the challenges faced during micro-tunneling process in Emirates of Dubai. In permeable grounds, the loss of slurry increases the cutter head torque and reduces penetration rates. Overcut is formed to provide space for converging ground and enables the evenly circulation of lubricant flow on the pipe line, as such buoyancy effects of fluid lubrication act on the pipe to lessen the drag during jacking. Microtunnelling techniques are used to reduce penetration resistance within the pipe string by providing sufficient uniform overcut and continuously injecting polymer lubricants. It is also observed that as the urban area in Dubai is surrounded by built structures and numerous underground services, a special consideration is required to protect these services especially DEWA ED Cables. Also, the high ground water table, fractures within the rock and

proximity of creek makes things very difficult to reduce the water table level in launching / receiving Pit and have difficulties in breaking the hard ground within the Pit. At Wafi Interchange, proposed development for the extension of interchange had to be incorporated in the alignment and accordingly standard pipe fittings to be introduced in the alignment. There are services towards Sheikh Butti palace (launching pit side) and on the other side (receiving pit). Ongoing construction of Al Jaliliya children's hospital requires close coordination and safety related issues to be addressed prior tomobilization of heavy equipment at the proposed micro-tunnelling area. The receiving pit at Emarat petrol pump was also critical and special approval from RTA is required to close one lane at the heavy traffic along the service road, parallel to sheikh Rashid road. The removal of ground water was another challenge because near Sheikh Butti palace the drainage network was not completed and hence special arrangement was to be made to discharge the water near the creek, for which DM environment approval are to be sought.

Bhatt, Devendra Datt, and Rabee Rustom. «Challenges faced for micro-tunelling works in Jadaf, Dubai for long drive on large scale projects (case study).» MATEC Web of Conferences. Vol. 120. EDP Sciences, 2017.



Thermal Performance Optimization of the Underground Power Cable System by using a Modified Jaya Algorithm

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The sustained growth of the global economy and increasing population, particularly in the developing countries, determine the increasing demand for electric energy supply. Electrical power worldwide is mainly transmitted with High Voltage (HV) Alternating Current (AC) overhead line technology. For instance, 96% of the onshore transmission network in Europe is built overhead, and only 4% is installed underground. Underground cables are mainly used over short distances, in areas where overhead lines are inexpedient or impossible to use, as well as for specific technical applications. Underground cabling is becoming increasingly attractive for use mainly for environmental and aesthetic reasons. Also, Underground Transmission Lines (UTL) are resistant to weather conditions and are

installed when the use of overhead lines may result in an adverse impact on the environment, concerns over potential health issues, impact on property prices, or the condition of national parks or areas of natural beauty. UTL is also more reliable than overhead transmission lines when it comes to the cable line failure likelihood. Thus, UTL is recommended during design and installation in: densely populated urban areas (ease of network expansion, lower risk of electric shock, aesthetic reasons), electrical power outputs from power plants (i.e. conventional or renewable energy sources) and large energy consumers (i.e. mines, ironworks, manufactures, or even electrical grid interconnections between countries), interconnections in power stations (overhead lines are connected to an underground cable via a cable connection station). Nevertheless, use of underground cables in HV applications is still limited owing to their high installation and maintenance costs, as well as expensive repairs in case of an outage.

Based on the performed literature survey, it is observed that the particle swarm optimization (PSO) and genetic algorithms were mostly used in optimization of underground power cable system (UPCS) design. The present study proposes a modified Jaya algorithm for costs optimization of HV underground power transmission line. The aim of this study is to test a modified Jaya algorithm in a case study that optimizes the Underground Power Cable System design and minimize its installation costs. In the original Jaya algorithm, the solutions with the best and worst value of the cost function are used in the iterative procedure for determining the next generation. The algorithm proposed in this paper involves a random selection of three best in order to generate the next population. This modification improves scanning of the solution domain and, therefore, may lead to finding a better global solution. The performance of the proposed algorithm is compared with a standard Jaya algorithm and the well-known PSO algorithm.

The following conclusions are derived based on the performed UPCS design optimization:

- The Sand-Cement mix (SCM) is the cheapest thermal backfill commonly used in the design of UPCS since the thermal conductivity of SCM is relatively low, the power cables with the large cross-sectional area are needed to ensure their operation under the optimum temperature of 65°C. Therefore, the overall material costs may be greater than in the case when the modern thermal backfills for power cables are used.
- Powercrete™ and FTB are the modern thermal backfills used for UPCS design. These backfills allow one to build the UPCS with smaller cross-sectional areas of power cables when compared to SCM. Instead of the relatively high prices of those thermal backfill materials, due to the reduction of cable conductor diameter, the overall material costs of the UPCS may be lower than when SCM is used.
- The modified Jaya and original Jaya algorithms are useful tools for UPCS material costs minimization. Both versions of Jaya algorithm do not need any algorithm-specific parameters to be tuned and the convergence is very good which is a major advantage.

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Bite-Sized Audience Expectations: Media Snacking Culture among Gen Z in UAE

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Due to divided attention span of consumers across various digital platforms and fleeting consumption of bite-sized content there has been an emergence of new trend among Gen Z called as 'Media Snacking'. The term Media Snacking was coined by Nancy Miller in 2007. Media Snacking refers to consumption of small incomplete chunks of information by consumers.

With Information overload, we have less time to spend on each medium vis-a vis each post. David Evans of ClickZ.com says ".....content-hungry consumers are drilling into very exact portions of media streams around the, snacking on only those high-protein bites they want while skipping the filler".

The main aim of this research was to find out the factors responsible for Media Snacking Culture among Gen Z in UAE. Focused group discussions were conducted to understand the trends. The results suggest that Gen Z in UAE were much focused and look for specific information. They are 'spoilt for choice'. They enjoy interactive videos and attractive headlines and stories or write-ups having human interest angle. They don't have patience to go through detailed content so prefer short and crisp content which they call as TLDR (too long don't read). The Gen Z prefers to spend less time on each media platform and consume bite-sized content. The prevalence of this trend has posed several questions/challenges for content creators. They need to seek attention span.

(Paper presented at Second International Conference on Communication & Media Studies, University of British Columbia- Robson Square, Vancouver, Canada, 16-17 November, 2017)

Exploring 3D Network-On-Chip Architectures and Challenges

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Abstract: Network-on-Chip (NoC) is a nascent approach for reducing the communication bottleneck of multicore System-on-Chip (SoC). As the number of cores are increasing on SoC due to high performance demand of the consumer electronics and processing systems like servers, the low power and low latency NoC is required. Topologies are one of the most important parts of a NoC design, with considering the performance parameter as a constraint. The important parameters of networks-on-chip are latency, throughput, injection rate and average number of hops etc. In our work, various existing 3D NoC architectures and their performance are studied and presented. The basic concepts of NoC and motivation for 3D NoC and its advantages over 2D NoC are also focused in this paper. We have also investigated and demonstrated 144 nodes and 256 nodes 3D mesh architecture in terms of the latency, throughput and injection rate.

The above paper was presented in the International Conference on Computer & Applications (ICCA 2017), Dubai, United Arab Emirates, September 6-7, 2017.



Effect of Flexural Hinges in the Design of a 2 DOF Compliant Microgripper



Prof. Royson Dsouza



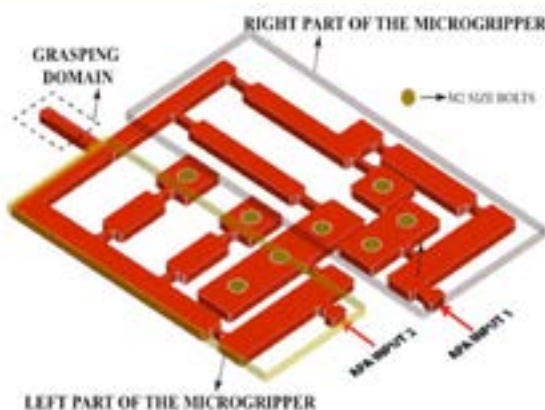
Mr. Afeef Usman



Mr. Oommen Philip



Mr. Arjun Mini



Aiming at the micro assembly of the MEMS components, microgripper forms a very important tool in the assembly of the optical switches to grasp and rotate the optical fibres comprising of a 2 DOF system. A compliant microgripper with 2 DOF is designed with different types of flexural hinges like circular, rectangular and corner fillet along with the variations of various parameters. In the proposed microgripper 2 piezoelectric stack actuators are used to obtain the tip displacement and the gripping force. The relationship between the gripping force, tip displacement in horizontal and vertical direction, input force and input displacement of the piezoelectric driven microgripper are established using Pseudo-rigid-body-model. Finite element analysis (FEA) was conducted to evaluate the responses of the

model under the specified load and displacement to investigate optimum design of the model. Well established FEA simulation tool like ANSYS is used and results are compared. The designed microgripper is analysed for different high resilience materials to test its compliance capability. The results prove that Corner fillet hinge provides maximum displacement amplification with minimum stress.

Presented and Published in ACM digital Library (<https://dl.acm.org/citation.cfm?id=3068819>), Proceedings of the 3rd International Conference on Mechatronics and Robotics Engineering, Paris- France. This paper also won the best paper award in the conference.

Fuzzy Logic Pitch Control of Variable Speed Wind Turbine

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International Research Journal of Engineering and Technology (IRJET)



Abstract: Control plays an important role in modern wind energy conversion systems (WECS). The pitch control system is one of the most widely used control techniques to regulate the output power of a wind turbine. In this paper, efficient wind turbine pitch controller is designed to achieve an optimal angle of wind incident. By controlling the pitch angle in high wind speeds, aerodynamic load and generated power by the rotor are adjusted. MATLAB/SIMULINK is used to simulate the pitch angle control system to evaluate and test the control methods. Fuzzy Logic Controller for the variable speed wind turbine is used to regulate the wind turbine pitch. Simulations show that the fuzzy logic controller is capable of achieving better control performances than the conventional PID controller.

Key Words: PID Control, Fuzzy Logic Control, Variable Speed Wind Turbine, Pitch Control System, Wind Turbine Model



Development of Simulator for Intrusion Detection System to Detect and Alarm the DDoS Attacks

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Abstract: DDoS attacks are the major concern in the current digital world. Reducing the DDoS attacks is very hard especially when it comes to highly distributed Botnet-based attacks. It is necessary to detect these attacks early to protect end-users as well as the network infrastructure resources. The core of this work is to implement the Intrusion detection system (IDS) which is located at the Internet service providers (ISP) level. Using our self-developed simulation software, it will be shown that how ISPs form the protection rings around the host to collaborate and defend the traffic information.

Keywords: Intrusion detection system, DDoS, Network Security, Internet.

This paper was presented in International conference on Infocom Technologies and Unmanned Systems (ICTUS-2017) - (Trends and Future Directions). IEEE CONFERENCE RECORD NUMBER 42058. December 18-20, 2017.

Experimental Investigation of Amplified Piezoelectric Stack Actuators 50XS, 60S and 120S



Prof. Royson Dsouza



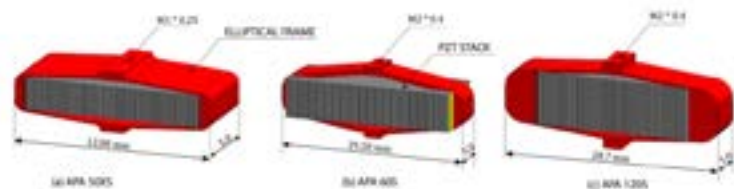
Dr. Navin Karanth P



Amplified Piezoelectric Actuator (APA), is a mechanical amplified preloaded stack actuator increasingly popular in micro actuation. Subsequently, piezoelectric stack actuators have been utilized often in high precision micro actuation applications due to its large force and precise micro displacement. This research presents the experimental testing and results of Amplified Piezoelectric Actuators (APA) APA 50SX, APA 60S and APA 120S.

In this work a static force measurement experimental arrangement has been setup to measure and get the graphical relationship of Force- Displacement-Voltage which can be used determine the input force to the microgripper at various displacement and voltage levels. The above three APA's are tested and

APA 120S is found to be the most suitable option whose data is then validated on the reference microgripper experimental arrangement. An average deviation of 9.74% is observed from the real-time measured values and 10.33% deviation from the FEM results. The obtained values are in good correlation and the experimental test procedure provides the complete static data for the above actuators. A complete data sheet is been generated governing electro-mechanical characteristics of Amplified Piezoelectric stack actuators.



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Biosynthesized Nanoparticles for Sustainable Agriculture in Saline Soils & Marginal Environment

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The population of the world is increasing everyday and is expected to grow to an estimated 8 billion people by 2025 and 9 billion by 2050. The existing food produce and stocks are not sufficient to cater to this increasing demand, hence, there is a need to increase global produce to feed this rapidly growing world population. Also, climatic changes and increased human activities result in increasing soil salinity in arid /semi arid zones and reduced soil fertility. These put unprecedented pressure on food and water resources specially in the saline soils & marginal environments. Nanotechnology, a promising interdisciplinary field can overcome these problems. Nanoparticles can be explored for their potential to improve seed germination and enhance plant growth, increase the crop yield

and also control fungal infection. This can be made possible through application of biosynthesized nanoparticles which are not only easy to synthesize but also cost effective and environment friendly.

We, at BITS Pilani Dubai Campus have been able to synthesize metal nanoparticles, using a bacterial strain *Stenotrophomonas maltophilia* isolated from Dubai soil. The bacterium is capable of synthesizing 13 different metal nanoparticles owing to its ability of multi metal resistance. We are currently studying the effect of these **biosynthesized metal nanoparticles** as micronutrients essential for plant growth in Hydroponic systems and also through foliar applications on Sorghum, mustard, Desmanthus and pepper. Preliminary results using Copper and Molybdenum supplements have exhibited improved plant growth as compared to the control plants. We are simultaneously optimizing the synthesis of metal nanoparticles which can improve plant growth as well as help the plants to withstand the salinity stress in the arid and semiarid regions/marginal environments.

Cross-Cultural Training: A Crucial Approach to Improve Success of Expatriate Assignment in the United Arab Emirate

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Abstract: Expatriate training and development is progressively turning into a crucial human resource development issue for the multinational corporations (MNCs). The motivation for this study is to explore the impact of cross-cultural training (CCT) on the adjustment challenges of Western expatriate managers in the UAE. The findings indicate that the expatriate managers, who were provided with CCT, adjusted more rapidly in their international assignment in the UAE than the expatriates who were not provided with any CCT. This research has nevertheless demonstrated that not only are MNCs in the UAE failing to provide adequate CCT and support for their expatriates, but they are also providing inadequate CCT and support to the expatriate's accompanying family members. The present study contributes to the discussion about whether MNCs routinely provide their expatriate managers with sufficient CCT. Furthermore, this study has substantial implications for managers and proposes areas for future research in this field.

Keywords: Multinational corporations (MNCs), cross-cultural training (CCT), expatriates, United Arab Emirates (UAE)
 Paper (accepted & in press) for the publication in Middle East J. of Management



Multi-Objective Optimization of the Stirling Heat Engine through Self-Adaptive Jaya Algorithm

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A Stirling engine has a huge prospect to be useful for changing heat into mechanical power with more thermal efficiency. Its thermal efficiency may be as high as the Carnot efficiency. The Stirling engine can be powered by different heat sources and waste heat. Because the Stirling engine is compatible with alternative and renewable energy sources, it could become increasingly significant as the price of conventional fuels rises and also in light of concerns such as depletion of oil supplies and climate change. This type of engine is currently generating interest as the core component of micro combined heat and power (CHP) units, in which it is more efficient and safer than a comparable steam engine. However, it has a low power-to-weight

ratio rendering it more suitable for use in static installations where space and weight are not at a premium.

The Stirling engine can utilize compressible fluid as a working fluid. For providing a closed engine chamber, the gas circuit of a displacer piston is closed by using the tubes. The displacer and the power piston have the same dimensions. In monophasic operation, the power piston comes into contact with the chamber pressure on one side and with the buffer pressure on the other. The compression and expansion processes of the cycle take place in the power cylinder with a power piston. A displacer piston shuttles the working fluid back and forth between the heater, regenerator, and cooler at a constant volume.

Since last few decades, the interest of researchers has been growing in the field of the optimization of Stirling engine's performance. From the literature survey, it is observed that various researchers had used different optimization techniques like genetic algorithm (GA), non-dominated sorting genetic algorithm (NSGA-II), an optimizer inbuilt in MATLAB (function gamultiobj), front-based Yin-Yang-Pair Optimization (FYYPO), multi-objective FYYPO, multi-objective grey wolf optimizer (MOGWO), teaching-learning-based optimization (TLBO), decision making methods like linear programming technique for multi-dimensional analysis of preference (LINMAP), technique for order of preference by similarity to ideal solution (TOPSIS), and Bellman-Zadeh method for the optimization of the Stirling engine's performance. It is also observed that majority of the optimization algorithms require tuning of their algorithm-specific parameters, in addition to the common control parameters of population size and the number of iterations. This enhances the burden of the designer or the decision maker to choose the 'optimum' set of algorithm-specific parameters (in addition to the common control parameters) to apply on the considered optimization problem. Improper tuning of algorithm-specific parameters may lead to inferior solutions or local optima. Keeping in view of this, Jaya optimization algorithm which does not require any algorithm-specific parameters has been developed recently. In this work, self-adaptive Jaya algorithm is proposed which adapts the population size automatically depending upon the solution strength.

The Jaya and self-adaptive Jaya algorithm are used for single- as well as multi-objective optimization of Stirling engine. Three different objective functions are considered for optimization as follows: maximum power, thermal efficiency, and minimum pressure loss. The mathematical models for the objective functions were attempted previously by researchers using different optimization techniques. The application of Jaya and self-adaptive Jaya algorithms to the same mathematical models has shown their ability in solving multi-objective optimization problems. In the case of single objective optimization (i.e. considering one objective at a time) and the multi-objective optimization (i.e. considering all the three objectives simultaneously), the results obtained by the Jaya and self-adaptive Jaya algorithm are found better than the results of the fuzzy Bellman-Zadeh, LINMAP, TOPSIS, TS-TLBO, NSGA-II, gamultiobj, FYYPO, MOGWO, and TLBO. The convergence behavior of the self-adaptive Jaya algorithm is found to be much better than the convergence behavior of the other optimization techniques. The performance of the Jaya and self-adaptive Jaya algorithms is proved to be superior to other optimization algorithms in terms of the quality of solution, computational time, and function evaluations. Both the Jaya and self-adaptive Jaya algorithms are quite promising and are reliable choices for the optimization of the design of the powered Stirling heat engine.

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Process Mining in Intrusion Detection- The Need of Current Digital World

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Abstract: In the current age of digital world, all users of Internet/Network as well as organizations are suffering from intrusions which results into data/information are theft/loss. In the present manuscript concept of intrusion detection system (IDS) were discussed along with its types and basic approaches. It is found that signature analysis, expert system, data mining etc. still using for IDS. Survey was given related to cybercrime incidents across various industry sectors. After analyzing the attacks on networks of organizations in different industry sectors it is found that still attacks like DDoS are not preventable. Comparison of data mining algorithms used for intrusion detection was also done. Various methods to implement the algorithm along with the advantages and disadvantages were also discussed in detail. Because of the disadvantages like over fitting, slow testing speed, unstable algorithms etc., intruders in the network are still active. To avert these shortcomings there is a need to develop real-time intrusion detection and prevention system through which data/information can be protected and saved in real-time basis before a severe loss is experienced. The real-time prevention is possible only if alerts are received instantly without delays. For this purpose, process mining could be used. This technique gives instant time alerts with real time analysis to prevent intrusions and data loss.

Keywords: Process mining Data Mining; Intrusion; Audit trails/event logs; Security.

This paper was presented in Advanced Informatics for Computing Research First International Conference, ICAICR 2017, Jalandhar, India, March 17–18, 2017 and published in Communications in Computer and Information Science book series (CCIS, volume 712) Springer, Singapore.

Genetic polymorphism of Vesicular Monoamine Transporter 1 Gene (SLC18A1) in Emirati Population

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Summary: Vesicular monoamine transporters (VMATs) are an important target for biological research in neuropsychiatric disorders. Recent studies indicated that VMAT1 is expressed in the brain, thus making transporter plausible candidate genes for neuropsychiatric disorders. Furthermore, several recent genetic case-control studies have documented an association between common missense variations in the VMAT1 gene and susceptibility to bipolar disorder and schizophrenia. Until now, there are no reports of VMAT1 allele frequencies in Emirati population. Hence, the aim of the present work was to study VMAT1 genetic polymorphism in healthy Emirati population. Saliva samples were collected from 248 healthy Emiratis and genotyping was done for rs2270641 by PCR-RFLP and rs2270637 and rs1390938 by Taqman assay. The minor allele frequencies of rs2270641, rs2270637 and rs1390938 were 0.48, 0.20 and 0.18, respectively, which were compared with that of available HapMap population data. In conclusion, the present study is first of its kind in Emirati population that established the allele and genotype frequency for various VMAT1 alleles which can be exploited to design future studies on the genetic association of neuropsychiatry disorders.

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Laboratory Simulation of Irrigation-Induced Settlement of Collapsible Desert Soils under Constant Surcharge



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Abstract: The heterogeneous nature of soil as a load bearing material, coupled with varying environmental conditions, pose challenges to geotechnical engineers in their quest to characterize and understand ground behavior for safe design of structures. Standard procedures for checking bearing capacity and settlement alone may sometimes be insufficient to achieve an acceptable degree of durability and in-service performance of a structure, particularly under varying environmental conditions, whether natural or man-made. There exists a wide variety of problematic soils that exhibit swelling, shrinkage dispersion and collapse characteristics occasioned by changes in moisture content. Specific examples are collapsible soils, which occur mainly in arid and semi-arid regions, are generally capable of resisting fairly large loads in the dry condition but suffer instability and significant strength loss when in contact with water. A number of case studies in the United Arab Emirates (UAE) were examined, where lightly loaded structures such as boundary walls, pavements and footpaths had been built on ground overlying collapsible soil strata. Sustained irrigation of the dry landscapes was found to have caused uneven settlement of the collapsible soils leading to continuous distress to the structures as evident from cracking and deformation. To help address the problem, an opportunity has been taken to develop a laboratory method of simulating the loaded behavior of collapsible soils in varying situations and to measure its deformation at constant surcharge and ground water infiltration rates. Finally, relationships were developed for linking the time period for maximum settlement to thickness of collapsible soil as well as magnitude of settlement to thickness of collapsible layer. These relationships can be used by geotechnical engineers to assess the rate and magnitude of settlements, depending on the thickness of the collapsible soil at a particular site. Though every effort has been made in the current study to prepare sufficiently large sized models to simulate field conditions relevant to the UAE case studies, inevitably there will be variations to be taken into account from one site to another. These variations include: the rate and frequency of irrigation, thickness of collapsible soil stratum and its depth below ground level as well as depth of groundwater table. Thus, geotechnical engineers need to exercise utmost care when assessing the important parameters such as time, rate and magnitude of collapse settlements in the particular locality of concern. A reliable assessment of the relationship between the intensity of landscape irrigation, water table level, thickness and location of collapsible strata can enable UAE Geotechnical engineers to develop guidance for property owners / members of the public to help them control rates of irrigation hence avoid extreme ground settlement that would cause structural distresses.

Publication Details

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Storytelling via Social Media – Use of Social Media for Story Research

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Abstract: This paper examines the use of social media as news source by journalists in the UAE. Traditional Journalism relies on official sources for facts as information, while the traditional practices are still in vogue, social media due to its instantaneous online dissemination offers an alternative. Reporters today can aggregate information online and reproduce it in their news stories hereby altering the sanctity between journalists and sources. UAE scoring a high penetration rate of social media networks such Facebook, Twitter and Instagram offers a great competition to the traditional media forms. The study draws from participant observation from the newsrooms of national dailies such as *The National* published from Abu Dhabi and *Khaleej Times* published from Dubai. The study also includes in-depth interviews with editors and journalists. Participant Observation reveals Journalist using online as an equally reliable outlet for tracking breaking news; more diverse perspective on the same news stories; more audience feedback being integrated making newsrooms demand speed, brevity and adaptability to digital journalism methods. Journalists feel actual product of journalistic practice is a connected network of various professional and citizens online and on social media working together to develop a story and decide how it will be told. Editors have raised concern for journalists being behind the curve of technological adoption relating to the Internet and digital media.

This paper was virtually presented as a part of a panel discussion in IAMCR 2016 (July 16-20th Cartagena, Columbia) - Social Media explosion: credibility, confrontations and comparison in the Asian and western democracies

Genistein Induces Alterations of Epigenetic Modulatory Signatures in Human Cervical Cancer Cells

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Summary: Introduction Epidemiological studies indicate that diet rich in fruits and vegetables are associated with decreased cancer risk thereby indicating that dietary polyphenols can be potential chemo-preventive agents. The reversible nature of epigenetic modifications makes them a favorable target for cancer prevention. Polyphenols have been shown to reverse aberrant epigenetic patterns by targeting the regulatory enzymes, DNA methyltransferases (DNMTs) and histone deacetylases (HDACs). In vitro and in silico studies of DNMTs and HDACs were planned to examine genistein's role as a natural epigenetic modifier in human cervical cancer cells, HeLa. Expression of the tumour suppressor genes (TSGs) [MGMT, RAR β , p21, E-cadherin, DAPK1] as well the methylation status of their promoters were examined along with the activity levels of DNMT and HDAC enzymes after treatment with genistein. Expression of DNMTs and HDACs was also studied. In-silico studies were performed to determine the interaction of genistein with DNMTs and HDACs. Genistein treatment significantly reduced the expression and enzymatic activity of both DNMTs and HDACs in a time dependent way. Molecular modeling data suggests that genistein can interact with various members of DNMT and HDAC families and supports genistein mediated inhibition of their activity. Time dependent exposure of genistein reversed the promoter region methylation of the TSGs and re-established their expression. In this study, we find that genistein is able to reinstate the expression of the TSGs studied by inhibiting the action of DNMTs and HDACs. This shows that genistein could be an important arsenal in the development of epigenetic based cancer therapy.

*Journal: Anti-Cancer Agents in Medicinal Chemistry
Month and Year of Publication: Sep 2017.*



Studying the Impact of Construction Dewatering Discharges to the Urban Storm Drainage Network(s) of Doha City using Infoworks Integrated Catchment Modeling (ICM)

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Abstract: The discharge of construction dewatering flows to the storm drainage network for disposal is a common activity in Qatar. The Dupuit empirical approach was utilized to establish various hypothetical dewatering scenarios on the basis of site classifications, which were modeled on 4 Case Study Areas of Doha's Existing Surface Drainage Network in order to study the impact of dewatering discharge against an established baseline. The simulations were undertaken using InfoWorks Integrated Catchment Modeling (ICM) software for critical and non-critical rainfall events. The results indicated significant localized flooding in excess of the baseline conditions for scenarios exceeding 0.5 m³/sec flows, while individual catchments demonstrated variations and sensitivities on the basis of catchment properties

and rainfall events. It is evident that dewatering discharge under unpredictable rainfall events poses various levels of risk to the city's infrastructure, which is further exacerbated due to the massive scale of construction activity in the country and the rising ground water table in Greater Doha Area basin.

Sameer, Mohammed, and Rabee Rustum. «Studying the impact of construction dewatering discharges to the urban storm drainage network (s) of Doha city using infoworks integrated catchment modeling (ICM).» MATEC Web of Conferences. Vol. 120. EDP Sciences, 2017.

Passively Enhancing Convection Heat Transfer Around Horizontal Cylinders Using Shrouds

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Abstract: Natural convection heat transfer around a horizontal cylinder has received considerable attention through decades since it has been used in several viable applications. However, investigations into passively enhancement of the free convective cooling using external walls and chimney effect are lacking. In this work, a numerical simulation to study natural convection from a horizontal cylinder configured with semicircular shrouds with an expended chimney is employed. The fluid flow and convective heat transfer around the cylinder are modeled. The bare cylinder is also simulated for comparison. The present study are aimed at improving our understanding of the parameters advancing the free convective cooling of the cylinder implemented with the shrouds configuration. For validation, the present

results for the bare tube are compared with data reported in the literature. The numerical simulations indicate that applying the shrouds configuration with extended chimney to a tube promotes the convection heat transfer from the cylinder. Such a method is less expensive and simpler in design than other configurations (e.g. utilizing extended surfaces, fins), making the technology more practical for industrial productions, especially for cooling systems.

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Optimal Design and Analysis of Mechanical Draft Cooling Tower using Improved Jaya Algorithm

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Cooling tower is used to release waste heat into the environment and widespread utilization of cooling tower can be found in power plants, cooling systems, chemical and petrochemical industries. A cooling tower is equipment used to reduce the temperature of a water stream by extracting heat from water and emitting it to the atmosphere. Cooling towers make use of evaporation whereby some of the water is evaporated into a moving air stream and subsequently discharged into the atmosphere. As a result, the remainder of the water is cooled down significantly. Cooling towers are able to lower the water temperatures more than devices that use only air to reject heat, like the radiator in a car, and are therefore more cost-effective and energy efficient. The COP and energy efficiency ratio (EER) of air cooled

chillers is 50% less than the water cooled chillers. They represent a relatively inexpensive and dependable means of removing low grade heat from cooling water. Common applications for cooling towers include providing cooled water for air-conditioning, manufacturing and electric power iteration. The smallest cooling towers are designed to handle water streams of only a few gallons of water per minute supplied in small pipes like those might see in a residence, while the largest cool hundreds of thousands of gallons per minute supplied in pipes as much as 15 feet (about 5 meters) in diameter on a large power plant.

In the past few decades the interest of researchers is growing in the field of thermo economic design optimization of cooling towers. From the literature survey, it is observed that various researchers had used different optimization techniques like mixed integer linear programming (MINLP), sequential quadratic programming (SQP), goal programming (GP), Merkel method, Poppe method, genetic algorithm (GA), non-dominated sorting genetic algorithm (NSGA-II) and artificial bee colony (ABC) algorithm for optimization of mechanical draft cooling tower. In the present work, the optimization aspects of a mechanical draft cooling tower are considered with six different designs. Design optimization is performed to find the best possible design from economic point of view. A newly evolved advanced optimization algorithm called Jaya algorithm is adopted and its improved version of self-adaptive Jaya algorithm is proposed for the optimal design of a mechanical draft cooling tower. The proposed self-adaptive Jaya algorithm determines the population size automatically and the user need not tune the population size. The same mechanical draft cooling tower model was optimized previously by Merkel method on the mixed integer non Linear programming (MINLP) formulation, Poppe method, and ABC algorithm. The results achieved by using Jaya and self-adaptive Jaya algorithms are compared with those obtained by using the Merkel method, Poppe method, and ABC algorithm. The ability of Jaya and self-adaptive Jaya algorithms is demonstrated and the results as well as convergence behavior of the self-adaptive Jaya algorithm are found to be more efficient than the convergence behavior of ABC and Jaya algorithms. The proposed self-adaptive Jaya algorithm is proved superior to the other optimization algorithms in terms of optimal results, convergence and computational time.

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MED 360 – Health Care Application

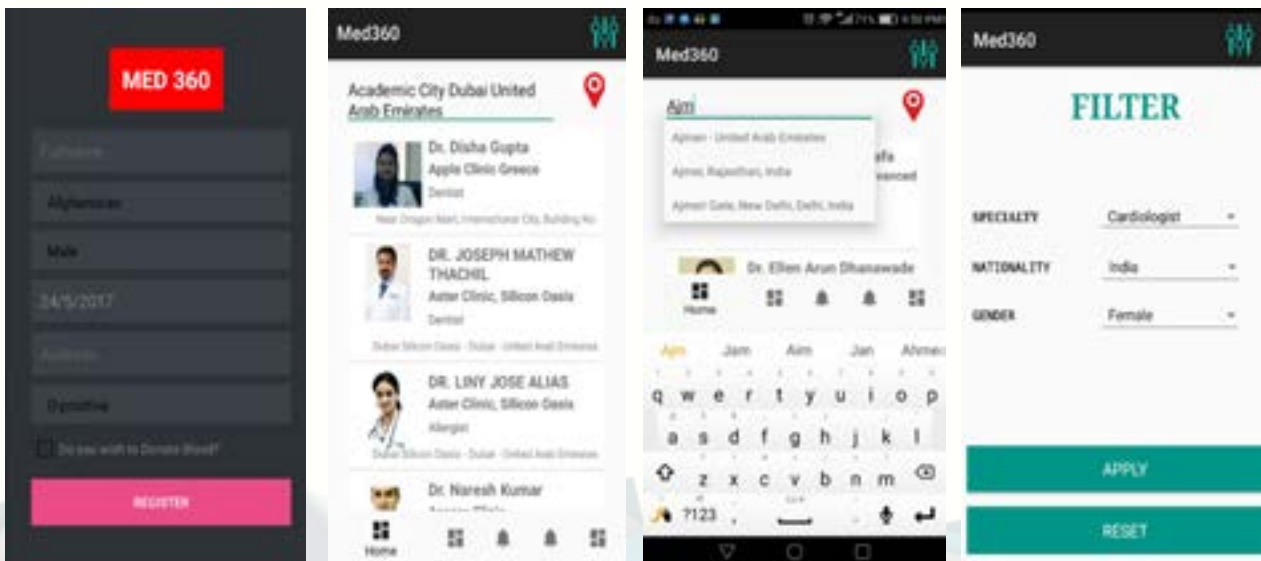
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Nowadays, technology plays an important role in every industry as well as our personal lives. Out of all the industries that technology plays a crucial role in, healthcare is one of the most important. This merger is responsible for improving and saving countless lives all around the world. Our project, MED360, provides a complete smart solution for the people in UAE. Med360 is a health application that aims to provide health services to patients through their smart devices. The objective of this project is to introduce hospitals to connect patients and doctors' miles away. This project intends to break the traditional approach of getting treatment, i.e., visiting their frequently visited doctor/hospital, by creating a platform for the public to find a doctor working in a clinic/hospital in their vicinity based on the kind of sickness. The idea of the project is based on the fusion of centralized data handling and health care. The application will be integrated with Google maps and display results based on the current location of the user and it will use the help of the GPS and find the location even when you're travelling. Med360 is a Mobile Application with Web interface Management, The front end is Android Application using Java, whereas the backend is Apache Web Server with HTML, PHP Application using MySQL. This mobile application will display the hospitals/clinics nearby based on your current location. The user can book appointments with the hospital and message the doctor through the application.



Rise in Binge TV Watching among Millennials in Dubai and its Impact on their Interpersonal Relationships

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With the Digitization happening and the changing Media landscape, media consumption patterns have changed drastically. Traditionally, people would wait for the next day or next week to watch their favorite show which is now available at the click of a button. Binge-watching means watching multiple episodes of a particular show over a concentrated period of time. This is seen as a new trend among Television audience.

The reason behind conducting such a study was to find out the Uses and Gratification that Millennials in Dubai get out of Binge-watching TV and secondly to understand how binge watching has an impact on their Interpersonal relationships. The study was targeted to Millennials in UAE so the participants from age group 18- 34 were considered for the study. The study results indicate that Binge-watching has become a norm amongst millennials in Dubai and is spreading interest among other generations too. Binging helps cement bond or strengthen relationships as suggested by Willens (2013) and Motley in previous studies. It has given the viewers greater flexibility i.e terms and conditions of television viewing are set by them. This process has therefore given the viewers instant gratification.

The motives behind binge-watching reflected in the study were more or less similar to those referred in the Television viewing motive scale used by Rubin (1983), Papacharissi and Mendelson (2007), Pittman & Sheehan (2015), though the variables reflected in each factor were found to have variation. Companionship turned out to be the major factor for binge watching as it helps them overcome loneliness as some of the respondents were living alone, away from their family or they were single. Respondents also felt relaxed if they find the episode interesting to binge watch which was not found to be variable for this factor in earlier studies. This could be because marathon viewing of interesting episodes helps individual escape from their daily routine as they get too engrossed with it. Curiosity also emerged as one of the variable for the factor Social. It could be because friends discuss the episodes they are watching thereby making other curious to watch the same.

Viewers are getting better in terms of curating their digital experiences. They want to enjoy the experience of watching the shows as per their convenience. The challenge for the broadcasters is thereby increasing in terms of content creation and production to attain greater consumption.

(Paper presented at Asian Media Information and Communication Centre, AMIC International Conference at Manila, Philippines, 27-29 Sept., 2017)

Knowledge Structures in Elementary Textbooks

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Abstract: Teaching is traditionally viewed as a knowledge building activity. Knowledge is transferred from a textbook to the student's mind as she reads and understands each textbook construct. Textbooks typically produce knowledge units in a structured way thus finally resulting in knowledge structures in her mind. Structure building is systematically carried out in textbooks using knowledge building constructs. In this paper, we have investigated knowledge structures and knowledge building constructs used in elementary textbooks and discuss preliminary results obtained.

The above paper was published in 6th IEEE International Conference on Reliability, Infocom Technologies, and Optimization (ICRITO'2017), Noida, India, September 20-22, 2017.



Role of Electronic Trading in Emerging Stock Markets Performance

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The adoption of electronic trading mechanism in the stock markets has seen several positive developments such as minimization of costs, disclosure of information and transaction transparency. E-commerce has the potential to improve the operational efficiency of financial markets and intermediaries alike in the developed part of the world but it still remains inadequately tested in emerging and developing markets. The present study investigates the impact of electronic trading system on emerging countries' stock markets performance. Applying the most popular conditional variance model, it was found that four out of five countries' volatility patterns are not found to be time dependent. Only South African stock market returns were found to be time dependent where investors can make some judgment about the future stock price behaviour based on the past. This study supports an important market efficiency hypothesis that no one can predict future stock price behaviour and make undue profit. Four countries markets (other than South Africa) seem to be efficient markets.

Smart Mirror: A Reflective Interface to Maximize Productivity

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There is no end of objects that could be made "smarter," some being more suited to this than others. Mirrors, for example, provide a large surface ideal for displaying information and interacting with. Face-recognition based Smart Mirror authentication is used to detect the user. It provides a webpage based interface to access data feeds and other services. The data feeds use web service based communication to extract data packets available through various APIs offered by websites.

The Smart Mirror contains some devices equipped with a touch screen or TV enhanced external devices. However, most of them support entertainment and some interactive tasks. The Smart Mirror accomplishes the goal of active life by still being a mirror without all the technology inside it, making it very approachable to use and integrating seamlessly into our lives. The Smart Mirror has scope in the field of IoT and home automation. The Smart Mirror can be connected to the home appliances, mobile devices, etc. which can expand the functionality of the mirror. The facial recognition technology used can be future enhanced as a means of security. Adding security means that no one can try to access sensitive data that maybe displayed on your mirror via the use of APIs. We believe that the future of the home will be a brilliantly connected ecosystem of smart technology designed to make your life easier, more enjoyable, and efficient. Obviously there are a ton of opportunities in the home for technology integration but a mirror is one of the best places to start.

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Perceptions of the Western Expatriate Managers in Multinational Companies in United Arab Emirates

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Abstract: Globalization necessitates many companies around the world, and predominantly those in the United Arab Emirate (UAE) to hire expatriate managers. However, despite attractive packages many expatriate managers frequently find themselves on their way back home before finishing their global assignments because they and their families couldn't adjust to the UAE culture. Despite the continuous evolution of multinational companies in the UAE, there is very limited research into the challenges of managing expatriate managers in UAE. The purpose of the present study is to explore that how multinational companies (MNCs) select, train, deploy and support expatriate managers during and after their international assignment in UAE. As a pioneering study of Western expatriate managers in UAE, the finding of this study adds to the international human resource management literature on this little known cluster of the expatriate managers. The results demonstrate that the selection procedure are frequently reactive, unplanned and spontaneous and mostly based on the technical know-how rather than cross-cultural literacy and softer behavioral skills. Pre-departure training was not compatible with their requirements in UAE; expatriate managers were left to themselves on arrival, depending on the favors of their colleagues to adjust to their new life in UAE. Finally, repatriation was poorly managed, and these international assignments are frequently perceived as a barrier to career development rather than a long-term investment. The results of the present study are at odds with the previous research in expatriate management and are significant because a noteworthy determinant of expatriate success is the effective management of the expatriation process. The findings also contribute to the design and development of better expatriation process in the MNCs in UAE.

Keywords: *Expatriate manager, international assignment, multinational companies, UAE.*
Paper presented at the Innovation Arabia 10 in Dubai, UAE 11th – 13th March, 2017.

Application of Forensic Tools to Detect Fraud: The Case of Toshiba

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References to fraudulent financial statements (FFS) have increased in frequency in the last several years. FFS primarily consists of manipulating elements by overstating assets, sales and profit or by understating liabilities, expense or losses. For eight years, Toshiba's financial statement included unchecked fraud, raising the question of auditor competency. In addition to the auditors, other Toshiba stakeholders could have detected the fraud with the help of forensic accounting fraud-detection tools. This case study tests the efficacy of three selected forensic tools to detect Toshiba's fraudulent financial statements. The results show that the Beneish Model was not able to detect the fraud, but the Altman Z-Score and Benford's Law clearly indicated that the company's financial statements contained misstatements. Although the Beneish Model is very popular for predicting FFS, the results of the present study do not indicate its efficacy. In addition, the present study's investigation of forensic tools highlights the importance of selecting the best tool(s) to detect financial misstatements. The study's discussion of and suggestions regarding the efficacy and applicability of the tested tools provides useful direction to investors, financial auditors and forensic auditors when making policy decisions.

Detection and Prevention of Fraudulent Financial Statements Using Statistical Techniques – A Case Study on Toshiba. *Journal of Forensic and Investigative Accounting*, Vol 9 Issue 1, January – June 2017.



Advanced Optimization of Single Area Power Generation System using Adaptive Fuzzy Logic and PI Control

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International Research Journal of Engineering and Technology (IRJET)



Abstract: In this paper, the open loop single area power generation system is modelled using state space representation. The output response which is frequency deviation at steady state is simulated using MATLAB. Then, Proportional Integral (PI) controller combined with Adaptive Fuzzy Logic (FL) controller is added to the system to understand the effect of conventional and modern control on system steady state output response. The performance of the system steady state output response is measured in terms of undershoot percentage, settling time, and steady state error. Simulation of the controlled system shows that PI controller combined with Adaptive FL controller are considered the most efficient, reliable, and robust type of controller in addressing power generation optimization problem. The output response of the controlled system has settling time of 2.5 second, zero steady state error, and undershoot of 0.03%.

Key Words: Optimization, Single Area Power Generation System, Adaptive Fuzzy Logic Control, PI Control, Steady State Output Response, Frequency Deviation

Fuzzy System Approach for TCSC Based Controller Design

Haitham Gharib Juma Al-Sheibany, Dr Abdulla Ismail
International Research Journal of Engineering and Technology (IRJET)



Abstract: FACTS devices are the most multifarious devices used to control real and reactive power in transmission line for economic, flexible operation in the power system. Facts Technologies promise a variety of opportunities for significant advances in the delivery of power and flexibility of power system control. Fuzzy system approach is applied to design a Thyristor Controlled Series Compensator (TCSC)-based Controller to enhance power system Stability and efficiency. The design objective is to improve both rotor angle stability and system voltage profile. Superior results are obtained when comparing the designed fuzzy controller with conventional lead-lag and with no control.

Key Words: FACTS: Flexible AC Transmission, TCSC: Thyristor-Controlled Series Compensator, DEWA: Dubai Electricity and Water Authority, ANFIS: adaptive neuro-fuzzy inference system





NEWS & EVENTS

BUID organizes International Conference on Arabic Computational Linguistics (ACLing2017)



ACLing 2017 was the third edition of the Arabic Computational Linguistics series (ACLing). ACLing 2017 had taken place at the British University in Dubai, Dubai, UAE, between 5th and 6th November, 2017. The British University in Dubai had

been selected to organize and host the ACLing 2017 conference in recognition of its academic reputation in the area of Computational Linguistics and its mission for establishing itself as a provider of world class scholarship, education and research. Professor Khaled Shaalan, Head of PhD in Computer Science/Msc in Informatics/MSc in ITM at the BUID, is the founder and Co-chair of this International Conference. All accepted papers in ACLing 2017 are published in *Procedia Computer Science* (ISSN: 1877-0509), Volume 117, Pages 1–312 by ELSEVIER, as a peer-reviewed journal issue, open source.

ACLing2017 aimed to bring together leading academicians, scientists, researchers and practitioners from all over the world to exchange new ideas, to share the latest results and resources, and to create connections and collaborations in Arabic Computational Linguistics and NLP. This year ACLing was able to attract 69 submissions from 20 different countries namely: Algeria, Canada, Egypt, France, Germany, Italy, Jordan, Lebanon, Malta, Morocco, Netherlands, Norway, Oman, Qatar, Russia, Saudi Arabia, Tunisia, USA, United Arab Emirates, and the United Kingdom. Out of the 69 submissions, only 37 were selected for publication (from 16 different countries), so the acceptance rate this year was 53.6%. 225 reviews were made with an average of 3.26 reviews per paper. The Conference Proceedings volume contains all papers accepted for publication in ACLing 2017.

Arabic computational linguistics has become an increasingly important field, as more and more Arabic information is now available through the Web, Social Media and Intranet services. The scope of the conference encompasses the theory and practice of all aspects of Arabic Computational Linguistics in text, audio, image, and video. Topics addressed in accepted papers included: summarization, sentiment analysis, classification, machine translation, POS tagging, morphological analysis, chatbots, question answering, irony detection, visualization, word embedding models, among others.

*All accepted papers in ACLing 2017 are published in *Procedia Computer Science* (ISSN: 1877-0509), Volume 117, Pages 1–312 by ELSEVIER, as a peer-reviewed journal issue. *Procedia Computer Science* is a prestigious journal highly valued in many countries for university promotion. As for Standard for measuring Citation Impact, ACLing (*Procedia in Computer Science*) proceedings is indexed in Scopus, the largest abstract and citation database of peer-reviewed literature, i.e. scientific journals, books and conference proceedings, where you can see also the CiteScore rank and compare with other peer-reviewed literature in the Computer Science field. Nevertheless, *Procedia Computer Science* is ranked by SJR. Every peer-reviewed research of ACLing2017 is published open access and appear online on ScienceDirect, i.e. freely available anytime anywhere.*



MDX Dubai hosted the UAE's First National Journalism and Media Conference



Middlesex University Dubai was proud to host the First National Conference of Journalism and Media on April 20th, 2017. This event, organized by Evelyn Stubbs (Campus Programme Coordinator, Media), along with faculty members Lucyann Kerry and Hani Soubra, centred on the theme 'Global Journalism: Emerging Trends and Practices'. This conference looked at a wide range of topics, including *Journalism in the Post Truth Era, Influence of Media on Ideas and Perceptions and The White Helmets: War Journalism and the Representation of Heroism.*

The first conference of its kind to be held in the GCC region, the First National Conference of Journalism and Media featured discussions and presentations from some of the world's leading journalism and media minds, including Chis Ogbondah from the University of Northern Iowa, freelance journalist Mark Lomas and Gulf News Editor, Francis Matthew. Seasoned journalists sat on the introductory panel and discussed 'Journalism in the Post Truth Era'. This took head on the current issue in journalism of an evolving concept of truth in practice, where journalism no longer presents a façade of certainty but has a new multi-faceted subjectivity. It was a truly international event with attendees coming from the greater region as well as the United States, China. The one day event allowed professionals to get a better sense of trends and emerging issues in the region and globally.



According to Dr. Cedwyn Fernandes (Director, Middlesex University Dubai), *"the media sector is changing at a rapid pace. Digitization and the 24-hour news cycle have resulted in the public consuming media faster than ever before. The first conference of its kind in the GCC region, the Journalism and Media Conference discussed emerging trends in global journalism and how these trends are dramatically changing not only how journalists are reporting stories, but also the region's dynamic media landscape."*

International Conference on Infocom Technologies and Unmanned Systems, December 18-20, 2017.



Amity University Dubai, in association with the Institute of Electrical and Electronics Engineers (IEEE) UAE Section, organized a three day International Conference on Infocom Technologies and Unmanned Systems (ICTUS 2017) at its Campus in Dubai. From the Internet of Things (IoT) to Artificial Intelligence and to Big Data Analytics, speakers passionately talked about how new technologies are helping us engage with a future full of opportunities and challenges. The Conference, which was addressed by Ammar Al Malek, Managing Director of the Dubai Internet City and Dubai Outsource City, provided a common platform to leading scientists, academicians, researchers, government officials, practicing engineers, industry professionals and students to share their research experiences and views. In his speech, Ammar Al Malek said that Dubai has become the hub for innovation, and enterprise and information communication technology is at the heart of all our efforts to improve the quality of life. The speakers on

the first day of this conference underlined the role of technology in the globally competitive environment and scientific analysis in gaining market leadership. Main themes of the conference focused on Free and Open Source Software, Natural Language Processing, Cloud computing, Artificial Intelligence and Experts Systems, Data Mining and Data Warehousing, Convergence Technologies, Human-Computer Interface, Mobile Computing, Advances on Computing Mechanisms, Software and Web Engineering. The keynote speakers and delegates from 30 countries including Japan, UK, USA, UAE, Germany, Russia, Australia, Canada, India, South Africa, Croatia, Argentina, China, Hong Kong, Oman, Denmark, Pakistan, Estonia, Jordan, Sofia, Peru, Botswana, Bosnia Herzegovina, Bahrain, Turkey, Mauritius, Bangladesh and Malaysia attended the conference. The conference overall attracted over 170 professors, academics, researchers and students from around 30 countries of the world.



YOUTHOPIA - The Entrepreneurship Week at Amity University Dubai



Incubation Centre - Amity University Dubai launched the fourth edition (Since 2015) of YOUTHOPIA – The Entrepreneurship Week from 24 - 28 December 2017.

Aligned with the national endeavor to promote entrepreneurship & innovation mindset amongst students, this week long event included a range of initiatives such as: Entrepreneurship Awareness

Camp, Guest Lectures, Time Machine – The Future Game, Elevator Pitch and Eureka - Business Idea Competitions.

Student entrepreneurs across various programs of Amity University Dubai pitched their innovative business ideas to a panel of judges from the innovation community of Dubai.



Workshop on New Technologies in Genomic Research



School of Life Sciences organized a workshop on “New Technologies in Genomic Research” as part of faculty development program on 6th Sep

biotechnology research. Application specialists Dr Yusuf Murgha from Alliance Global Life Sciences, Dubai and Dr. Lakshmi V. Madabusi from Integrated Gulf Biosystems, Dubai were invited for the purpose.

2017. The purpose of this is to provide an overview of newer technologies in the field of Genomics and highlight their prospects and applications in



3rd Current Trends in Biotechnology-2017: An International Life Science Research Conference



School of Life sciences organized its 3rd conference titled "Current Trends in Biotechnology: CTBT-2017" successfully on 12th and 13th of April 2017 with the aim of providing an enriching experience to the student community and a regional platform for the scientific fraternity. Renowned speakers from industry and academia within the region participated by presenting their work. The keynote address was given by the guest of honor Dr Mariam Matar, an Emirati doctor herself as well as Founder and Chairperson of UAE Genetic Disease Association and a well-known role model for young and aspiring students within the UAE. The inaugural session also included address by Ms Ranya Saadawi, Senior Manager from EXPO 2020 LIVE team followed by interesting scientific sessions by Dr. Muhammad Mukhtar, Visiting professor- American University in Ras Al Khaima, Dr Haitham Mohammad Ayad, Head of R&D-Johnson & Johnson ME and Dr Farhan Khan, Managing Director-MedLink LLC Dubai. The rest of

the Day 1 was marked by research presentations by Dr Meis Moukayed, Professor of Natural Sciences, American University in Dubai, Dr Samrein Ahmed, Asst. Prof, College of Medicine-University of Sharjah and Ms Alaa Ali from College of Medicine, University of Sharjah. The first day was attended by over 100 students from various other universities including students of Manipal Dubai. Day 2 witnessed a series of Oral presentations by scholars from UAE-University, University of Sharjah, Manipal University Dubai, Integrated Gulf Biosystems and Ovascience Laboratory followed by student activities. A Microbiology Quiz competition was organized by the American Society of Microbiology's International Student chapter with an objective of encouraging young minds having special inclination towards Microbiology. Afternoon session is dedicated to Poster presentation by undergraduate and postgraduate students from University of Sharjah, Manipal University Dubai and BITS-Pilani Dubai.



Guest of Honor Dr Mariam Matar along with the KHDA Official at the conference venue.



Also seen are Dr Firdos Khan, Chairperson School of Life Sciences along with the Academic President Dr Kota Reddy and Ms Ranya Saadawi, Sr. Manager EXPO 2020 LIVE Team.

Dr Moustakas appointed as 'Research Evaluator' at the Assessment Development Unit, MoE



Dr Evangelos Moustakas has been appointed as a research evaluator at the Assessment Development Unit of the Ministry of Education (MOE). MOE is holding the 'App Challenge' with Grade 10 (General and Advanced) students across the UAE. As part of the Assessment Framework students are tasked with one Assessed Research Project every term. In term one students have been asked to design an app which solves a problem on a conceptual level. The problem can be local, national, or global. Evangelos will be evaluating the research projects and providing recommendations.



Strathclyde Business School in Association with Middlesex University Dubai Presented the 3rd Talk on Advanced Social Listening Methods and Tools

Dr Evangelos Moustakas, Associate Professor in Digital Marketing & Social Media at Middlesex University Dubai conducted a session on the advanced social listening methods and tools. The session briefly outlined the objectives of the Centre of Innovation & Excellence (CIE) at Middlesex University Dubai to link industry and academia to advance education, research, corporate training and outreach in key areas as well as provided examples of applied research in various domains. Innovative methodological social media monitoring tools and approaches which are adopted by the CIE for projects

in relation to marketing were also be discussed. Social media monitoring tools provide functionality for listening, tracking, and gathering relevant content across wide ranges of social media. Valuable data is gathered which can be used by social media agencies, marketing and communications teams to identify trends, track competitors, and understand customer sentiment.



International Workshop on Recent Trends in Solar Power Generation and Energy Harvesting

Amity University in collaboration with Centre for Science and Technology of the Non- Aligned and Other Developing Countries (NAM S&T Centre) conducted “International Workshop on Recent Trends in Solar Power Generation and Energy Harvesting” from 27th to 29th March 2017. Participants from various parts of the world including from Iran, Cuba, Togo, Gambia, South Africa, Tanzania, Nigeria, India, Botswana, Mauritius, Zimbabwe, Turkey, Sri Lanka, Palestine, Iraq, Egypt, Zambia, Afghanistan, Bhutan, Cambodia, Malaysia, Philippines, Indonesia, Botswana, Morocco, UK, Italy, Germany and UAE presented their research work in the workshop. This prestigious workshop provided an excellent opportunity and unique platform to discuss various research activities, latest developments in the area of

Solar Energy and to explored avenues to collaborate with top experts of various countries. As part of the workshop, a poster making competition was also organized for Amity University students.



Coffee with CEO – A Unique Blend of Coffee at Amity University Dubai



Incubation Centre – Amity University Dubai launched Coffee With CEO series in the month of November with an aspiration to enable corporate captains to share their expertise and experiences with our budding student-entrepreneurs over a coffee in an informal setting. Seven budding student-entrepreneurs host the guest over a coffee while rest of the students join the session virtually on YouTube Live.



In November 2018, Mr. Rohit Jayakaran, Digital Director of the Arabian Radio Network in a very humorous

conversation with a handful of students spoke on how the pattern of media consumption has changed over time and the possibilities generation Z can benefit from. He started the conversation with defining a millennial as “Somebody that pretty much grew up in the 2000s” & took everybody back in time by asking about their first interaction with the internet.

Followed by Mr. Rohit Jayakaran, the next in Coffee With CEO was Mr. Ravi Singh, CEO – Bluefin Consulting. He introduced himself as somebody who makes his living out of giving ‘winning strategies’ to new companies. He spoke on millennial management, importance of treating self like a brand and spoke on the mindset of a leader.



6th Annual Student Research Symposium at Middlesex University Dubai



On November 5th, 2017, Middlesex University Dubai held the 6th Annual Student Research Symposium. It was a fantastic celebration of undergraduate and postgraduate research, and a great opportunity for students to showcase their projects. All of the presenters did an outstanding job in disseminating their findings, and sharing their research expertise with the guests and judges. One ‘best postgraduate poster’ and two ‘best undergraduate poster’ awards were given in a ceremony later that afternoon in the Oasis Theatre, Block 16. We saw so many superb projects, and selection of the winning posters at this year’s SRS was a tougher job than ever before. Congratulations must be given to all participating students and their supervisors. The standard of the work was outstanding and it was illustrative of the continued growth of the student research culture at MDX Dubai. See details of all projects, including the winners, below:

Undergraduate Winners

Alina Vakil, Leanne Menezes, Rea Dsouza, and Rumana Vakil

‘Small and Medium Enterprises in the United Arab Emirates: Challenges and potential solutions’

Aliyah Fareed Lutfi Ali Harmouzi

‘Parent Attitudes Towards, and Reliance on, Handheld Devices’

Postgraduate Winner

Janine Lau-Pope

‘UAE National Retention: Will the introduction of the new legislation for flexible working hours for female and male UAE Nationals improve retention in the public sector?’



BUID Doctoral Students Rise to the UAE's Innovation Challenge



The British University in Dubai, has been hosting Doctoral Conferences for three consecutive years (2015-2017), under the patronage of H.H. Sheikh Ahmed Bin Saeed Al Maktoum. The first conference was held in May 2016 included 40 doctoral students presenting papers on their scientific research in such diverse areas as Sustainability, Innovation, Knowledge Management, Construction, Health Care, IT Security, Big Data, Complex Projects, Education, and Business Management. Many of the students are in full-time employment and have chosen thesis topics that address R&D challenges experienced in the workplace.

Sponsors of BUID Doctoral Research Conferences have included Dubai International Academic City, Dubai Duty Free, Atkins, United Arab Emirates Khaleeji Chapter, and Al Sahel Contracting Company. Keynote presentations are given every year by academics from a range of GCC and UK universities such as the keynote presented in 2016 on "The Art and Science of doing a PhD" delivered by Professor Ghassan Aouad, President of the Applied Sciences University, Bahrain. Other keynotes have been presented by academics from the Universities of Glasgow and Loughborough.

Students from both BUID and UK associate universities reviewed papers to gain experience and practice for their future academic activities. Academics from the University of Manchester, University of Glasgow and the University of Edinburgh have attended to support the conference, including reviewing and assessing nominations for the best paper awards. Awards have been presented for a wide range of full conference papers in Education, Project Management, Engineering & IT, Architecture, Sustainability and the Built Environment, and Business Management.

The past best paper awards address a wide range of PhD topics. In 2015: Jacqueline Lottin A Case Study Investigation of Special Needs Inclusion Policy Implementation in three Abu Dhabi Public Schools; Mohammed Assaf Examining the Perspectives of Public Schools' Grade 12 Emirati Students on Writing Challenges in English Language; Vandana Gandhi Parents Contribution to Preschool Children's Learning; Yacoub Petro Project Management Office Typology in UAE and its integration; Shaima Al-Harmoudi Stakeholder integration in open innovation construction Projects; Shireen Chaya Diversity Leveraging & Diversity-Competent Leadership: The Case of Leadership in UAE Organizations.

In 2016: Lara Abdallah A Study on the Perceptions of UAE private Secondary School Mathematics Teachers on the Impact of CPD Program Improvement; Yan Zheng (University of Glasgow) The Story, the Child,

and the Touchscreen: How Story Apps Tell Stories; Christine Unterhitzberger (Liverpool John Moores University) Organizational Justice and Construction Project Performance; Shaikha Abdool Electronic National Unified Medical Records and Application of Telemedicine; Bertug Ozarisoy (Cardiff University) Adaptation of Retrofit Strategies for Mass Housing Renewal and Urban Development order to meet the Demands of Energy Consumption, Occupants' Behaviour and their Cross-Cultural Influences in Northern Cyprus; Eyad Megdadi Multivariable Regulation of Gas Turbines for Automotive Applications.

In 2017: Sandra Baroudi An examination of factors that make international large-scale assessments effective: a case study of Lebanon; Heba Daragmeh Gifted and Talented Education Policy Analysis: A comparative study of the gifted and talented policies in the UAE, UK, USA, and Australia; Selina Neri From Quality to CSR; Anmar Dulaimi (Liverpool John Moores University) A Novel Cold Bituminous Emulsion Mixture for Road Pavement using A New Cementitious Filler; Ala'a Abu Hijleh Introducing System Dynamics Modeling to UAE Health Care Projects: Reducing patient waiting times; Firoz Khan The Future of Software Engineering: Visions of 2025 and Beyond; Zahra Jwaida (Liverpool John Moores University) Soft Subgrade Stabilisation Using Cement Kiln Dust and Ground Granulated Blast Slag.

Since 2016, conference attendance has grown to nearly 100 doctoral and masters students from the British University in Dubai and UAE based universities, including UAEU, Zayed University, Manipal University and Heriot-Watt University. As well as submissions



from a number of UK based universities including universities from the UK alliance. Students from Cardiff University, University of Edinburgh, University of Glasgow, and Liverpool John Moores University have participated and presented at the conferences, in addition to students from elsewhere such as Skolkovo (Moscow School of Management) and the University of Rome.



4th annual TTRA (Asia Pacific Chapter) conference: Hosted by Middlesex University Dubai



Middlesex University Dubai successfully hosted the 4th Annual Travel and Tourism Research Association (TTRA) Asia Pacific Conference (APAC) on 3rd and 4th December 2016. The conference theme was 'Pushing the Boundaries: Driving Tourism Innovation & Creativity Through Research'. Dr. Cody Morris Paris (Deputy Director of Middlesex University Dubai and Conference Co-Chair) said this theme *"resonates with the spirit of Dubai and the UAE, where there have been significant investments to fulfill a vision of an innovation-driven economy with tourism playing a central role. Already one of the most visited cities in the world, home of the busiest international airport, and the birthplace of some of the world's leading hospitality and tourism brands, Dubai is well on its way to reach 20 million international visitors by 2020, the year of EXPO 2020"*.

The 4th TTRA APAC conference follows successful previous conferences in Kuala Lumpur, Melbourne, and Tokyo. "We are coming to Dubai at the Far West of the TTRA Asia Pacific region. Dubai has been a leader in tourism leveraging its geographic advantages as a natural hub with long term investment and vision for our industry," stated Carolyn Childs, TTRA APAC President and Conference Co-Chair. TTRA International was founded in 1970 to support the travel and tourism industry's growth and success through a focus on the quality, value, effectiveness and use of research in travel marketing, planning and development. Today TTRA continues to provide leadership for the global community of practitioners, educators, and users of travel research.

The Conference featured nearly 50 leading researchers from industry, government, and academia from more

than 15 countries including Australia, New Zealand, China, Japan, Seychelles, UK, USA, Italy, France, Jamaica, Finland, and the United Arab Emirates. The conference had world renowned keynote speakers and panelists presenting on research and practice at the nexus of creativity, innovation, and tourism. Mr. Gerald Lawless (Head of Tourism and Hospitality at Dubai Holding and Chairman of the World Travel and Tourism Council) gave a keynote talk on The Rewarding Union of Travel & Tourism and Cinematography. Prof. Sue Beaton, the founding president of the TTRA APAC Chapter, launched the 2nd edition of her seminal book, 'Film-Induced Tourism', and organized a special panel and paper track on 'Creating Tourism via Film, TV and Pop Culture' featuring filmmakers, destination marketers, and academics. Mr. Nasif Kayed (Founder and CEO of The Arab Culturalist) and Dr. Jeff Dalley (New Zealand Department of Conservation and VP of TTRA APAC), gave opening keynote talks. In addition to the panelists and keynote speakers, more than forty academic papers were presented by some of the world's leading tourism researchers.

Dr. Morris Paris said *"I've been a long time member of TTRA; it's always been a fantastic community of researchers from the travel and tourism industry, academia, and destinations. Tourism research has always been central to the vibrant research culture at Middlesex University Dubai, and we have offered a strong undergraduate programme in Tourism since the Dubai campus opened in 2005. Next September 2017, Middlesex University Dubai will launch the first MSc in International Tourism Management in the UAE."*

International Conference on Accelerators in Materials & Medical Sciences



Amity University, Dubai organized an International Conference on Accelerators in Materials & Medical Sciences (ICAMMS 2017), jointly Organized by Amity Institute of Nanotechnology, Amity University, UP, India



from 5th to 7th October 2017. Eminent Scientists, Professors, Researchers, Students and Technocrats from various parts of the world including from India, Japan, United Kingdom, Italy, France, Germany, Kazakhstan, United Arab Emirates etc. presented their research work in the conference.

In total there were 39 oral presentations and 27 poster presentations in the conference.



Manipal Entrepreneurship Research Conference (MERC) 2018



The School of Business at Manipal Academy of Higher Education Dubai held its 2nd Annual Entrepreneurship Research Conference on the 14th and 15th of February 2018. With Entrepreneurship as the main theme there were total of 30 paper presentations from International delegates from eight countries as well as faculty and student presentations from local universities.

universities including Skyline University, American University of Emirates, Herriot Watt, BITS Pilani, Emirates Aviation College, IMT Dubai.



The first day's keynote address was given by Professor Saras Sarasvathy who is the Paul Hammaker Professor at University of Virginia's Darden School of Business and also holds the Jamuna Raghavan Chair in Entrepreneurship at IIM, Bangalore. A



This research conference is modelled on the Babson College Entrepreneurship Research Conference and the Australian Centre for Entrepreneurship Research Exchange Conference. Session chairs from local UAE



leading scholar on the cognitive basis for high-performance entrepreneurship, she serves as advisor to entrepreneurship programs around the world. Her work in "effectuation" is a rigorous framework for understanding how entrepreneurs starting with very few resources can nonetheless create enduring ventures with high economic and social impact.



Renewable Energy Technologies for Water Desalination



The United Nations World Water Assessment Programme estimates that by 2030 only 60% of the worldwide water needs can be met. A recent study by the World Resources Institute projected that Middle East will have a high Water Stress Ranking by 2040 under Business-as-Usual Scenario. Water desalination is one of the technologies which require innovative solutions to overcome the challenge of high energy requirement to meet our future water demands. Dr Rehan Ahmed of Heriot-Watt University co-authored a chapter in the recently published book in the area of Sustainable Water Development, entitled "Renewable Energy Technologies for Water Desalination". His contribution was in the area of Fuel Cells as an energy source for desalination applications. The book was published by CRC Press, Taylor and Francis Group in 2017.

Further details can be found at <https://www.crcpress.com/Renewable-Energy-Technologies-for-Water-Desalination/Mahmoudi-Ghaffour-Goosen-Bundschuh/p/book/9781138029170> [ISBN: 978-1-138-02917-0 (Hbk), ISBN: 978-1-315-64391-5 (eBook)].

International Conference on Recent Advances on Materials and Manufacturing Technologies (IMMT 2017) at BITS Pilani Dubai Campus



BITS Pilani, Dubai campus, Mechanical Engineering Department organized two days international conference on Recent Advances in IMMT 2017.

BITS Pilani, Dubai campus, Department of Mechanical Engineering, organized an International conference on Recent Advances in Materials & Manufacturing Technologies (IMMT) 2017 on 28th and 29th November 2017. Over 130 participants from academics and research background from over 40 universities including the IITs in India, NUS Singapore, Masdar UAE and many more prestigious universities participated and presented their research papers. At the Inauguration, a warm welcome was extended to the participants by the Convener, Dr. Vincent Shantha Kumar. Prof. Souvik Bhattacharyya, Vice Chancellor, BITS Pilani addressed the forum with his motivating words and wished them all great knowledge sharing experience in the conference. "It's a privilege

to host such an event at BITS Pilani Dubai campus, and it will indeed open new ventures of technical advancement in Mechanical Engineering", said Dr. R.N Saha, Director, BITS Pilani Dubai Campus. The Guests were then introduced to the forum by Dr. M.V.N. Sankaram, HOD Mechanical Department. The inaugural address speech was given by Chief Guest, Dr. Eesa Mohammed Bastaki, President, University of Dubai who spoke about the significance and outcomes of the prominent technical revolutions in history. It was followed by the release of the Abstract Book by Guests of Honour, Mr.

Mohammed Abdullah, Managing Director, DIAC and Mr. M. P. Sharma, President, Techmart, Dubai. The Inauguration ceremony was concluded with a Vote of Thanks given by Prof. R Karthikeyan (Co-Convener).



The Fifth United Arab Emirates Undergraduate Research Competition



On May 8th, 2017, eleven of our undergraduate students competed at the 5th Annual Undergraduate Student Research Competition in Abu Dhabi. This event has grown substantially since its inception and this year it attracted 454 submissions from 1,036 students from universities across the UAE. Following the early submission stage, a select number of students were chosen to present their research findings to a panel of judges. The competition was fierce this year, with approximately 250 student research projects presented to judging panels throughout the day. All our students presented their research expertly, and were commended for their skills. Our 3rd year Tourism student, Rachel Simmons (pictured below; supervised by Dr. Cody Paris) was awarded first place in the Management category, and was presented with a cheque for 5,000AED.

Massive congratulations to all participating students and to their supervisors-Cody, Engie, Eve, Subhadra, and Vijaya! Since this competition began in 2013, our MDX Dubai students have been consistently numbered among the winning researchers across a range of categories. This illustrates the healthy student research culture in our university and the talent of our undergraduate students. We look forward to continued success in future research events!

Middlesex University Dubai Hosts the EU and UAE Conference on the Rule of Law and Arbitration



On March 26th 2017, the Law and Politics Department of Middlesex University Dubai held a CLPD-accredited EU and UAE Conference on the Rule of Law and Arbitration. The event was supported by the Jean Monnet Programme of the European Union via the Jean Monnet Chair awarded to Prof. Laurent Pech (Head of Department, Law and Politics, Middlesex University London). The conference, coordinated by Dr. Tenia Kyriazi and Dr. Daphne Demetriou, was attended by academics, legal practitioners and students from the UAE and Europe.

Distinguished legal professionals and leading academics from the EU and the region participated as keynote speakers and panelists. The event began with keynote speeches from His Excellency Mr. Patrizio Fondi, Head of the EU delegation to the UAE, Mr. David Gallo (Director of the Academy of Law, DIFC), Mr. Alec Emmerson (Chief Executive of the DIFC Arbitration Institute), and Ms. Maali Khader (Principal Case Manager at the Emirates Maritime Arbitration Centre). The conference was then divided into two panel discussions. The first panel focused on the rule of law. Professor Pech along with Ms. Justine Stefanelli (Bingham Centre for the Rule of Law), and Professor Joshua Castellino (Dean of the School of Law, Middlesex University London), explored the implementation of the rule of law at European and international level.

The afternoon panel focused on international arbitration from practitioners' perspective. Mr. Lughaidh Kerin and Dr. Anthony Cullen (both from Middlesex University London) discussed the EU legal framework on Alternative Dispute Resolution in the context of consumer disputes. Ms. Jasamin Fichte (Founder and Managing Partner at Fichte & Co.) spoke about the implications of the establishment of the Emirates Maritime Arbitration Centre for legal practitioners in the region. Ms. Laila El Shentenawi (Senior Associate at Al Tamimi & Co.), presented challenges and opportunities for women in arbitration, followed by Mr. Alan Henderson (Senior Associate at Clyde & Co.), who looked at the authority to agree arbitration under UAE law. The session was concluded by Ms. Sarah Malik (Counsel at Taylor Wessing), who presented recent development in the enforcement of arbitral awards in the DIFC and Dubai Courts.

Both panels sparked extensive discussions between the speakers and the participants. At the conclusion of the conference, all attendees provided very positive feedback on the organization of the event, the high calibre of the speakers and the information they gained from it.

International Field Trips, School of Design and Architecture, Manipal Academy of Higher Education



Architecture and interior design study tour balances the on-campus design syllabus by providing students with an immersive experience of various built environments. Study tours have become integral part of architectural/design education and a major way of learning to understand the built environment as well as other related design fields. The goal of a study tour is to provide the students with opportunities to experience buildings in a particular regional context, meet architectural practitioners and/or teachers, visit other architecture programs, and engage in other off-campus activities.

The School of Design and Architecture at the Manipal Academy of Higher Education (MAHE), Dubai Campus, has taken the concept of study tour to a different level altogether. Considering the “global” and “international” rise of Dubai’s stature in the past couple of decades, it was understood very early in the conception of the School that local study tours alone may not perhaps prepare the students for their futures. The School decided to conduct “International Field Trips” as a logical pedagogical development of the usual “study tours”. Under this specific program, so far, students of both architecture and interior design from SoDA have visited 4 international venues: Barcelona, Beijing, Germany and India. Students are responsible to fund

their travel and associated tour costs individually; this is not included in the standard course fee.

The visited sites, including traditional, historic, and contemporary buildings, not only provide a broad overview of world architecture and design, but also an understanding of their specific socio-cultural or geographic/geo-political settings. As the speed and complexity of globalization affects our profession, such holistic understanding of the built environment is always useful. These trips undoubtedly support the undergraduate architecture curriculum and inspire design excellence.

Another feat that SoDA achieves through such field trips is the “vertical integration” of studios. Students from different pedagogical levels of their course (1st year to 4th year) get a chance to work on projects together after having identified and studied suitable sites and projects. The latter part (site and project identification) is usually accomplished in collaboration with a school of design or architecture from the visited region. This also becomes an interesting platform for faculty interaction and possible exchange programs. SoDA is currently working on the exchange program with two of the visited International Schools of Design, one from Barcelona and another from Germany, towards further collaborative practices.



Archiving an Impression: Al Mahatta and Sharjah



A Journey... that began with an architectural vision, zeal and unconditional love for the city of Sharjah, to document a historic piece of built environment which had once played a vital role in the development of the Emirate as-well-as the Middle-East Region.

The second phase of 'Archiving an Impression' – an exhibition inaugurated on July 18th, 2017 at Al Mahatta Museum, Sharjah, the first airport in U.A.E, was a result of a successful three-year collaboration of School of Design and Architecture, Manipal University Dubai along with Sharjah Museums Department, Government of Sharjah. The exhibition highlights this journey with Al Mahatta Museum and the Emirate of Sharjah through two thesis projects that range from a Macro Urban Scale, looking at the City of Sharjah from a tourism perspective, to a Micro Urban Scale, focusing on the neighbourhood block of Al Mahatta where Al Mahatta Museum rests.

It commenced with an architectural documentation of Al Mahatta Museum by analysing its historical, architectural and master planning aspects keeping the comprehensive evolution as a key factor in a time –space continuum. A conditions survey and an Inventory along with conceptual Urban Strategies were also developed for this eighty-four year long-standing museum. This was followed up with detailed Urban Layer Analysis comprising of macro and micro layers of history,

mobility, land-use, tourism, open spaces, building heights and community facilities with respect to City of Sharjah and Al Mahatta Block that further developed into the two thesis projects displayed at the exhibition.

The study was supported through funding by the Research and Development Program, Manipal University, Dubai Campus along with a research grant from Sharjah Museums Department supporting the Exhibition infrastructure and displays. This journey would not have been possible without the constant support and guidance of Director General Manal Ataya, Alyah Ali Amiri, Head of Community and Academic

Programmes, Hazelle Page, Collections Manager from Sharjah Museums Department, Peter Jackson, Architect, Rulers Office and Nicholas Stanley-Price, Author of Imperial Outpost in the Gulf, for sharing their wisdom and insights during the course of this research. The research was conducted under the supervision

of the Principal Investigators; Prof. Ashok Iyer, Chairperson, School of Design and Architecture & Kairmein Deboo, Principal Urban Planner and Designer, Arcadis. The Exhibition and the thesis projects were undertaken by the Co-Investigators of the research, Ms. Shweta Gandhi and Mr. Dhruv Parekh; Students of fifth Year Bachelor of Architecture Program (2013-2018), School of Design and Architecture (SoDA), as a part of their academic coursework.



Dr. Cody Paris: Appointment to the Editorial Board of the Journal *Information Technology & Tourism*



Information Technology & Tourism (ITT) has been published by Springer since 1998 and is the first scientific interdisciplinary journal focusing on the

nature and role of Information Technology within the context of tourism, travel and hospitality. Information and communication systems embedded in a global

net have had a profound influence on these industries. Additionally, these industries with their presence in the electronic market show an impact on the developments of IT. Advances in the use and development of tools, technologies, and methodologies that have facilitated the efficient netting of information and communication systems in tourism, travel and hospitality are to be presented and discussed within this journal.

For further information on this publication, please see: <http://www.springer.com/business+%26+management/business+information+systems/journal/40558>



Dr. Anita Shrivastava Kashi and Ms. Seada Kassie Present their Research at the Middle East Psychological Association Conference



The 1st Middle East Psychological Association Conference & Expo 2017 was held in Dubai, from 27th to 29th April. The first initiative of its kind in the region, this conference comprised Poster Presentations, along with a Professional Track, General Community Track, and a Student Track.

Dr. Anita Shrivastava Kashi, Campus Programme Coordinator of the Psychology Programme at Middlesex University Dubai presented her research on "Demographic Correlates of Help Seeking Behaviour" on 29th April. Her co-presenter was Ms. Seada Kassie, Adjunct Faculty in Psychology at Middlesex University Dubai and Clinical Research Associate at the American Center for Psychiatry and Neurology, Dubai. Their presentation topic was highly relevant to the region, and generated a significant amount of discussion among attendees. The hour-long presentation included some practical exercises which contributed to the interactive

nature of the presentation. This research presentation was well-received by an active audience of professionals and students from across the region. This conference was very well organized, and provided an excellent opportunity to network with individuals and institutions.



The Energy Institute Middle East HSE Forum



Peter Kew – Heriot-Watt University

The UK Energy Institute held its first major event in the region in Dubai 16-18 May 2017. The HSE Forum, sponsored by ENOC attracted some 200 delegates from governmental and the private sector in the Gulf region and beyond. Heriot-Watt students acted as rapporteurs providing copy for Pacific Consulting Services to produce the final report. This report, together with information on the next Forum to be held in February 2018 are available at www.energyinst.org/events/middleEast-hse/latest-news.



The emphasis on day one was on the importance which Government and business place on Health, Safety and the Environment starting with keynote speeches from Louise Kingham OBE FEI, Chief Executive, Energy Institute (Welcome Address); H.E. Alastair Long, Her Majesty's Deputy Consul General in Dubai (How HSE ensures productivity and business success); H.E. Ahmed Mohammed Al Kaabi, Asst. Under Secretary for Oil and Gas Industry and Mineral Resources at the Ministry of Energy, UAE (Energy strategies and the importance of HSE); H.E. Ahmed Buti Al Muhairbi, Secretary General, Dubai Supreme Council of Energy (Dubai's sustainability energy model for driving green growth) and Zaid Al Qufaidi representing Mr Saif Al Falasi, on behalf of ENOC's board of directors (ENOC's HSE journey). The common theme being that while maintenance of health and safety and concern for the environment were necessary in their own right, best practice in these areas was essential for a productive and sustainable organisation.

The keynotes were followed by a range of talks outlining the speakers' experiences in implementing HSE policies and techniques ranging from ENOC's HSE and sustainability programs to recommendations for HSE strategies from IOSH, the importance of HSE communication, an introduction to the "zero by choice" concept and energy management and the application of energy audits.

The second day was devoted to case studies and reports of research in the area. A diverse series of presentations the benefits of pursuing good practice and organisational methods to achieve the best outcomes. Topics included, hazard identification, risk reduction, business performance enhancement and auditing of GHG emissions.

The third day took the form of a workshop led by Ken Maddox, Tripod Beta Trainer, Engineering Performance on the Tripod Beta method of accident prevention and analysis. The Tripod Beta method is a 21st century root cause analysis tool. The technique involves looking at events, agents and objects in terms of four factors: underlying causes (UC); preconditions (PC), immediate causes (IC) and failed barriers (FB). Delegates were shown, by example, how to analyse accidents to enable organisations to see what happened, how and why it happened, and to diagnose the causes through a fault tree.

The second Energy Institute Middle East HSE Technical Forum Effective covering the management of health, safety, environment and sustainability will be held in Dubai, 2-4 October 2018 with an abstract submission deadline of 9 February 2018.



Middlesex University Dubai Faculty Participate in the Education Experts Conference-2017: Shaping the Future of Education



Dr. Fehimda Hussain (CPC DCEI), Dr. Tenia Kyriazi (CPC Law and Politics) and Ms. Johanna Horlings-Plender (Lecturer in Education) represented Middlesex University Dubai at the Education Experts Conference -2017: Shaping the Future of Education, held at Zayed University on 18-19 April. Through presentations and roundtable discussions the conference explored how leadership strategy, financial management, academic excellence and technology integration can help build regional and global reputation. It brought together senior industry figures within the UAE to generate discussions of how regional institutions can harness innovative technologies, management models and various strategies to ensure world-class excellence in teaching, research and development.

Dr. Hussain, Dr. Kyriazi and Ms. Horlings-Plender moderated a roundtable discussion focusing on the

“Requirements to enter and succeed within University and gain employment upon graduation”. Employability upon graduation is becoming increasingly competitive, so for students to be successful in securing employment they are required to enter university with a different mindset and skills base. The discussion focused on the skill-sets students currently need in order to be admitted and successfully undertake their studies in a variety of disciplines at higher education institutions.

Roundtable participants shared valuable insights on opportunities and challenges for students transitioning from school to University and explored potential synergies between schools and higher education institutions, aiming at better preparing students for taking advantage of opportunities and coping with challenges during their university studies.

Dr Jock Clear Ferrari Senior Performance Engineer Visited Heriot-Watt University



Dr Mehdi Nazarinia, Associate Professor, School of Engineering and Physical Sciences, Heriot-Watt University Dubai

Dr Jock Clear who is working as senior performance engineer at Scuderia Ferrari now, visited the Dubai campus and spoke to students on his career in Formula 1 and gave some excellent advice on building a successful career in engineering. Dr Clear is a Heriot-Watt University graduate who was further awarded with an Honorary Doctorate of Engineering from in 2007. He is one of the leading senior performance engineers in Formula 1 and has worked with famous drivers such as Michael Schumacher, Nico Rosberg, Lewis Hamilton, Rubens Barrichello and Takuma Sato.



Paper Presentations in International Conferences



Two Papers Presented in Academy of International Business (AIB), One of the leading associations of scholars and specialists from 1959 with 3169 members in 89 different countries around the world. The titles of the papers, “M-Score and Z-Score for Détection of Accounting Fraud”, and “The effects of Social Media on young professionals’ Work productivity: A Case on Ghana”, on 5th July, 2017 in Dubai.



Paper Presentation in “ British Association of Finance and Accounting (BAFA)”, entitled, “ Various Forms of Auditor Rotation in UAE” on 22nd June, 2017 at Crifield University, United Kingdom.

Generative Shelter: Adaptive Shelter Design by Heriot Watt Architecture Program

In collaboration with Dubai Design Week at d3 and Abu Dhabi Art at Al Serkal Avenue



Curator: Dr. Harpreet Seth

The Architecture program at Heriot Watt Dubai campus organized a research and design workshop cum exhibition series, “ Generative Shelter” as a part of the Dubai Design Week (Around the City) and Abu Dhabi Art from 13-15th November 2017. The exhibition was curated by Dr. Harpreet Seth and the selected students work was



displayed at the Al Serkal Pop-Up from 4th – 26th November.

A shelter, too small to be a proper building and too

localized to be a standard object, usually stays out of interest of architects and designers. Still, many are designed (not necessarily by a professional) for a specific location and a function. This design of a generative shelter incorporates a self-shaping technology and bio mimicry into shelter design. The idea is to find an

approach to innovation that seeks sustainable solutions by emulating nature’s time-tested patterns and strategies. On a very fundamental level, the shelter’s genetics allow it to adapt to its environment.

The aim of the project is to experiment with strategies that could improve and create innovative shelter “design” and could inspire solutions of similar problems. The generative shelter is capable of adapting to a given precinct. It does not possess a specific morphology rather a design sensibility and morphology. The morphology of the shelter changes with the context, installer and the density. It draws parallels to the evolutionary principles that are followed in nature. The complexity and the approach is addressed within the varying sensitivity and design capability of the designer allowing for unique approaches to adaptive and sustainable shelter design to emerge.



Chairing the International Conference



Dr. Ganga Bhavani Chaired International Conference on Technology- Driven Paradigms in Commerce Technical Session –III at Loyola Academy, Hyderabad, India on 10th December, 2016. The Topic of the Session: The Future of Global Accounting and Financial Reporting.

Middlesex University Dubai Celebrates 200th Wednesday Research Seminar



The Wednesday Research Seminar Series at Middlesex University Dubai started in 2008, and recently reached a significant milestone of the 200th seminar presented. The weekly research seminar provides an opportunity for faculty, staff, students, and external colleagues to gather together and share and discuss cutting edge research. This event has been central to Middlesex University Dubai's success in developing a mature research culture among its faculty and students. This seminar series provides a forum for researchers to share their work, and engage in productive discourse. It has also seen the genesis of many new research projects, and has informed the course of national and international research collaborations. The research seminar has been organized on a weekly basis during the academic term by the Research Committee Chair Dr. Lynda Hyland and her predecessors (Dr. Cody Morris Paris, Dr. Alun Epps, and Dr. Marcus Stephenson).

Throughout the 200 seminars there have been many notable presentations by leading and emerging researchers from around the world, region, and UAE. The seminar series also provides a forum for Middlesex Faculty to share their cutting edge research published in top-tier international journals and books.

To mark the special occasion of the 200th Wednesday Research Seminar, a celebration of student research was held. A panel discussion on the student research experience was organized. The panelists who were invited to join all were former Middlesex University students who excelled in research and have received recognition for their research achievements. Panel members shared their experiences of research engagement through coursework and dissertations, and expanded upon how research activities have shaped the course of their academic and professional lives.

Stationery Collection Drive (Pen)



The ASCE student chapter of Manipal Academy of Higher Education organized a stationery collection drive called PEN from 16th April to 27th April in partnership with the Pink Mango Project. The recipients of this donation drive will be the children living in Refugee camps under the Red Crescent Umbrella. The collection has been templated in such a way that it covers all basic necessities of school going children right from school bags to lunch



boxes as well as basic stationery items. The entire university, faculty and students alike contributed to the cause. An article on this drive was featured in GULF TODAY'S 'PANORAMA' magazine.



DFD 2017: Denver

The 70th Annual Meeting of the American Physical Society Division of Fluid Dynamics. The meeting was being held November 19 – 21, 2017 in downtown Denver, Colorado at the Colorado Convention Center, USA. This is one of the largest gatherings of the fluid dynamics research community in the world. There were 3000 presentations with about 1/3 from outside the United States. The full technical program is available on the APS website, <http://meetings.aps.org/Meeting/DFD17/Content/3384>



R·I·T Dubai
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Sponsoring Institutions:

1. American Physical Society
2. University of Colorado, Boulder.
3. Colorado School of Mines.
4. Colorado State University.
5. University of Colorado, Colorado Springs.

Paper Presentation by Dr. Shaji K. Panicker



FabrianoinAcquarello
 FabrianoinWatercolour 2017
 together with Country Leader Master
Atul Panase
 presents the Artists from the Watercolor Artists Community of **UAE**

Anastasi Akibode	Rajesh Babu
Allain Paul E. Beligon	Sanja Jankovic
Asha Lewis	Shrutika Gosavi
Ashis Manna	Sonavishy Sultania
Beena Samuel	Sunanda Jain
Bela Bhatt	Yamini Maria
Dr. Shaji K. Panicker	
Fazal Dongri	and
Jeff Scofield	Divya Suratkal
Madan Lal	Lakshman Kabadli
Manisha Bhardwaj	Rekha Mohandas
Prashant Mulanker	Ria Sharma



Dr Shaji K Panicker, Associate Professor from the School of Design and Architecture, Manipal Academy of Higher Education, presented a paper “The identification of Contemporary Indian Architecture; Reading between the lines of the 1984 Mimar publication on Charles Correa,” at The Asian Conference on Arts and Humanities (ACAH2017), organized by The International Academic Forum (IAFOR) and held at the Art Center Kobe, Kobe, Japan from March 30 to April 2, 2017. Dr Panicker also got one of his watercolors (International Watercolor Society, UAE member), exhibited and published in the illustrious Fabrianoin Acquarello exhibition held in Italy.



Paper Presentation at IAMCR 2017



The following papers were presented at the IAMCR 2017:

1. Binod.C.Agrawal (Manipal Academy of Higher Education): Social Media and Dynamics of Change in Democracy: An Analysis of the Indian Elections.
2. Padma Rani (Manipal Academy of Higher Education): Social media and Political Communication: An exploratory analysis.
3. H.S.Shubha (Manipal Academy of Higher Education): Deliberate ongoing engagement through



social media: an explorative study of the dynamic political public sphere in India.

4. Sabir Haque (Manipal Academy of Higher Education): Storytelling Via Social media- Use of social media for story research.



The title of the event was Panel: "Social Media Explosion": Credibility, Confrontations and Comparison in The Asian and Western Democracies; and it was chaired by Robin Mansell (London School of Economics and Political Science)

School of Engineering and Physical Sciences Runs Drone Workshops for High School Students



Drones are one of the most innovative means of transportation and are a very clear example of "mobility" theme of the EXPO 2020. There are numerous applications of drones some of which are yet to be exploited. School of Engineering and Physical Sciences (EPS) at Heriot-Watt University Dubai values this need and hence arranged several drone workshops for high school grades 12 and 13 during academic



year of 2016 and 2017. Heriot-Watt University, school of EPS staff, Dr Mehdi Nazarinia, Mr Mohamed Al-Musleh and Dr Amanda Hughes, taught students how to design and fly their drones. Student's piloting skills were tested by putting their drones through its paces when flying around an obstacle course or completing challenges. Parents were also welcomed to accompany students.



Dr Sreejith awarded PhD at Middlesex University



Thesis Title: Green Supply Chain Management: An investigation on the construction sector

Among the sectors, construction sector is the single largest contributor of global carbon emissions, resource, water and energy

consumption, and landfill waste. With environmental implications expected to be even greater in the future due to increasing urbanization, curtailing the negative environmental impacts or greening the sector has become critical in combating environmental pollution, climate change and resource depletion. This was the motivation for this thesis. A supply chain approach to combat the environmental concerns of the sector or green supply chain management is adopted in this study because the environmental impacts of a construction project are dispersed across its different supply chain stages, i.e. from design through to end-of-life.

UAE is chosen as the research setting for this study mainly because it gives an exemplary opportunity to understand the competing actions required from governments and construction sector firms to lessen the environmental impacts associated with the rapid urbanization and economic modernization. A sequential exploratory approach (i.e. qualitative investigation followed by quantitative investigation) inclusive of all life-cycle supply chain stages (design, purchasing, transportation, onsite-construction,

building operations and end of life management) and stakeholders (Developers, Architects/Consultants, Contractors and Suppliers) was employed to get a systemic understanding on the application of green supply chain management. The qualitative investigation involved 76 interviews, whereas the quantitative investigation involved a structured country-wide survey (which garnered 455 usable responses) with construction professionals in the UAE.

The high level findings shows the stakeholders could not only improve the environmental performance of the sector, but also could achieve short-term and long-term financial benefits from the application of green supply chain management. The significant “win-win” opportunities therefore is expected to provide impetus and business case for construction firms in the UAE and elsewhere regardless of their size and ownership to implement green supply chain management. At an operational level, the study identified several green practices that each stakeholder could implement as standalone or in conjunction with others in the supply chain. The study also identified several drivers/enablers (external and internal) and barriers/challenges (external and internal) affecting their green supply chain implementation. This finding is important for practitioners and policymakers to devise actions, strategies, support mechanisms and policy interventions to effectively maximize/leverage the drivers and minimize/eliminate the barriers to promote efficient and effective green practices implementation. In terms of contribution, the study is arguably the first comprehensive attempt to understand the potential/relevance of green supply chain management in greening the construction sector.



Guest Speaker



Ms. Taramol K. G. was the guest speaker for the Global Conference and Expo on Applied Science, Management and Technology at Crowne Plaza, Dubai on 06-08th April 2017. The theme of the conference: “Creating the Future Innovations through Applied Science, Management and Technology”. I presented a research papers entitled on “The Role of Social Capital in Rural Development – A study in Kerala”. This conference had covered areas like, The scientific program focuses on current advances in the research, production and use of engineering and applied sciences with particular focus on their roles in maintaining academic level and elevating the science level. The main objective of this conference was, to facilitate opportunities for networking, collaboration and exchange of ideas with internationally renowned leaders in Applied Science, Management and Technology.



Research Seminar on Human Factors and Ergonomics



On Wednesday November 29th 2017, Psychology Department, School of Social Sciences of Heriot Watt University Dubai Campus (HWUD) in collaboration with Human Factors and Ergonomics Society (HFES) GCC Chapter held a research seminar on Human Factors and Ergonomics, organised by Dr Cakil Agnew.

As the region is home to individuals from a multitude of cultures and backgrounds that are interacting with each other and with a host of complex technologies, the GCC represents vast opportunities to employ the Human Factors/Ergonomics in all sectors of society. The invited

guest speaker Dr Shatha Samman who established the HFES GCC chapter delivered a talk on “Human Factors and Ergonomics: It’s all about the fit”. She gave a brief overview on the discipline with numerous demonstrations from various sectors and presented a number of applications.

The event was open to academics, graduate students and professionals in related fields and hosted participants from a number of industries such as healthcare, aviation, psychology and interior design in addition to graduate students.

Paper Presentation



Ms. Taramol K. G. presented a Research Paper on “Effectiveness of Reflective Thinking Strategy of Teaching in Secondary Education” in the International conference on Education organized by The United Arab Emirates University (UAEU), Al Ain, on 21-23rd February 2017. The conference theme was “Creativity, Innovation, and Research for Excellence in Education”. This conference had brought together academics, researchers, practitioners and research students from around the globe to share and discuss creative and innovative practices that promote student learning, development and pedagogical practices. Almost 200 participants from all over the world were attended the conference. Besides the presentations, a wide range of interactive demonstrations revealed useful and exciting tools, projects and resources for teaching.



Keynote Session



Ms. Taramol K. G. gave a Keynote Session on the topic of The Educational Management System ‘A Study of the Educational Management System of Secondary Level Schools in India’ in the 24th International Conference on Social Science and Humanities at Dubai on 9-10th October 2017, organized by the Global Association for Humanities and Social Science Research (GAHSSR). The conference included 3 plenary sessions, 25 parallel sessions and 3 workshops. As well as the formal agenda, the convivial and friendly atmosphere lent itself well to supporting informal networking.







HIGHLIGHTS OF STUDENTS & STAFF ACHIEVEMENTS

Middlesex MBA Student Research Wins Parasuraman Service Excellence Award at the Innovation Arabia Conference



The Parasuraman Service Excellence award, was awarded during the 'Innovation Arabia' conference to Ms Lakshmi Nair, who did her MBA at Middlesex University in Dubai. This award recognizes and rewards original theoretical and empirical research

focusing on dimensions of service excellence. The award is named after Professor A. Parasuraman, voted in 1988 as one of the ten most influential figures in quality by the editorial board of 'The Quality Review'. Ms Nair's research looked at "Work-life integration" and a new concept called "Leaveism" which is about

employees taking annual leave or flexi time-off while being sick; or staff utilising their personal time to do office work mainly due to workload.

This personal time can vary from working at home after office hours on a weekday or weekends; to working during annual leave or vacation. Prior studies in UK on Leaveism have established that such behaviours can impact employee well-being, health and ultimately organisational performance. According to CIPD and SHRM, there are evidences in UK and US of excessive work pressure and many are seen to work via phones and laptops even when they go on leave.



BITS Pilani, Dubai Campus Received an Award for Strongest Faculty Engagement in EXPO Live University Innovation Program



Expo Live team witnessed an impassioned participation from the faculty of BITS Pilani, Dubai Campus as academic evaluators, and recognized the Institute for its strongest faculty engagement in EXPO Live University Innovation Program held on 26 November 2017.

The event EXPO Live University Innovation Program-final pitch, as part of Dubai Expo 2020 had 4 participating teams from BITS Pilani, Dubai Campus amongst the 21 teams from several other universities. Over 280 proposals were submitted to the EXPO Live University Innovation Program by students from 33 universities in the UAE.

These proposals were assessed equally by an evaluation body consisting of university professors and experts from Expo 2020 Dubai.

It is indeed a proud moment for BITS Pilani, Dubai Campus faculty to have been recognized for their effort and contribution to this prestigious event.



Mechatronics Engineering Students of Manipal Academy of Higher Education Dubai win DEWA ROBOTICS CHALLENGE - 2017



Students of 3rd year Mechatronics Engineering Mr. Syed Habeeb and Mr. Pratik Vyavahare, have won the DEWA ROBOTICS CHALLENGE-2017 in the University Level Category, under the Theme “Technology and Artificial Intelligence”. The project was supervised by Prof. Roysou Dsouza.

scene is described as a narrative to the user through earphones within 2 seconds. This technology is a complete assistant for visually impaired people to become independent during crossing roads, traffic signals, currency notes and several other applications.

The final judging and award ceremony was held in Baniyas Ballroom at Grand Hyatt Dubai on November 14th 2017. In the final round, over 42 Schools and Universities from 7 Emirates presented around 100 technological projects in the challenge. The Prize includes Trophy, Certificate of Appreciation along with the cash prize of AED 10,000/-.

This project was one of the first projects started under Manipal Centre of Robotics Excellence (MCORE) in the year 2017.

The project was named “SMART TALKING CAP”, which uses Artificial Intelligence and Machine Learning to assist the visually impaired people. The talking Cap takes the pictures of the user surroundings, processes and analyzes it using computer vision. The



IMechE (Institution of Mechanical Engineers) Design Challenge 2017



Institution of Mechanical Engineers organized “IMechE Design Challenge 2017” in University of Bolton, Ras Al Khaimah on 27th April 2017. I Year B.Tech. (MAE, S&AE) students participated and won special award for the excellent design category.



Mechatronics Engineering Students of Manipal Academy of Higher Education win “Best Presentation Award” in ICMERE 2017, France.



Research paper entitled “Effect of Flexural Hinges in the design of a 2 DOF Compliant Microgripper” presented by final year Mechatronics engineering students Mr. Afeef Usman Mohamed, Mr. Arjun Mini and Mr. Oommen Philip Tharakan has won the “Best Presentation Award” at the 3rd International Conference on Mechatronics and Robotics Engineering-SPRINGER (ICMERE 2017). Prof. Royson D’Souza, Faculty member of School of Engineering & IT is the first author of the paper. The conference was held in Paris, France from 8 – 12 February 2017.

Won ExpoLive Grant as a part of University Innovation Programme Organized by EXPO 2020 Team, Dubai Title of the project: Electro-Magnetic Induction based Roads (EMIR)



Theme of the programme: Sustainability, Mobility & Opportunity

Sustainability is a rapidly growing concern that has been gaining worldwide traction. However, despite the efforts made, the popularity of electric cars has only seen a very gradual improvement over the years. Considering the impact fuel-run vehicles have on the environment, we believe it is best to move faster towards this goal of going “all-electric”.

As our aim is to make electric cars a more viable option for the average commuter, we looked into various methods/aspects to improve in its concept. Ideally this idea should not only improve efficiency say, but thematically fit with the design of the future, that is, Smart Cities. Finally, through much probing, we found our solution: Wireless Charging of Electric Vehicle called as “EMIR (Electro-Magnetic Induction-based Roads)”.

EMIR is the integration of a reliable, continuous and wireless recharging of electric vehicles on the road with an automatic toll-collection system. It conveniently eliminates the need to stop for recharging, and promotes the use of electric cars.



Team Members: (All from 3rd Semester, B.Tech Electrical & Electronics Engineering)

1. Bilal Sultan
2. Kimberly Crasto
3. Navan Malhotra
4. Vedashruthi Manjunath

Team Mentor: Dr. Ramaprasad Poojary



BITS Pilani, Dubai Campus Teams Victorious at Startup Weekend Dubai Edition



Team Avenue Inc., co-founded by Karthik Bharadwaj, a Mechanical Engineering student of BITS Pilani, Dubai Campus clinched the top Prize at Startup Weekend Dubai Edition held during 16-18 November 2017. The team received a cash prize of Dollars 12,000 IBM Credit in addition to one year working space and mentorship from The Bureau Dubai, and qualified for Global Startup Weekend.



Another BITS Pilani, Dubai Campus team 'ProfileUp' consisting of Rachit Mishra, Shehab Abdul, Abhishek Das, Padma Priya, Sultan Morbiwala, Burhanuddin won the Consolation Prize and free mentorship.

Startup Weekend is a global movement of active and empowered entrepreneurs who are learning the basics of founding startups and launching successful ventures. It is one of the largest community of passionate entrepreneurs with over 1800 past events in 120 countries around the world. The 54-hour event brings together like minded entrepreneurs to share ideas, form teams, build products, and most importantly, launch startups.

BITS Pilani, Dubai Campus Wins Second Prize at RTA Dubai Taxi Hackathon



BITS Pilani Dubai Campus students Sarthak Sethi, Nilanchal Nilamadhab, Shivam Mishra, Mridul Bhandari, Rishabh Kaushik, Hrishikesh Uralath won



second prize at RTA Dubai Taxi Hackathon held during 23 - 25 November 2017. The key objective behind Recoding Mobility Hackathon was to ensure that customers would experience an efficient, tranquil, informed and innovative journey. The 48-hour competition required the participants to present their creative yet technical thoughts in enhancing the transportation journey offered to the customers.

The Institute team won a cash prize of AED 15,000 for their project 'ClickRavel', which is a smart taxi order button POS, which can be used to instantly order a taxi by just a tap. There's no need of a mobile phone with the customer. It has smart authentication via the 3 line "MRZ" code on Passport and Emirates ID of the customer. It can be installed in places like hotels, restaurants, bus stops, metro stations etc.

BITS Pilani, Dubai Campus Triumphed at EXPO Live University Innovation Programme



BITS Pilani, Dubai Campus celebrated a number of victories this week, clinching 4 awards at the very prestigious EXPO Live University Innovation Programme.

The event EXPO Live University Innovation Program-finale pitch, as part of Dubai Expo 2020 had 4 participating teams from BITS Pilani, Dubai Campus amongst the 21 teams from several other universities. All 4 participating teams from the Institute emerged victorious in this final round to qualify for the grant. Over 280 proposals were submitted to the EXPO Live University Innovation Program by students from 33 universities in the UAE. These proposals were assessed equally by an evaluation body consisting of 130 university professors and 24 experts from Expo 2020 Dubai. It is noteworthy that BITS Pilani, Dubai Campus had the maximum number of teams for the finale pitch of EXPO Live University Innovation Program. The teams were divided into 3 groups based on the commonality of the problem they were solving, and were invited to present to a set of 9 experts in their respective fields. Kudos to the BITS teams for getting through the finale and for being selected to get the grant for their projects.

The winning teams from the Institute were:

IORTA - Anchit B Pandey (3rd yr, Computer Science), Vaidya Satyarth Samir (3rd yr, Computer Science), Sejal Chopra (3rd yr, Computer Science), Patil Vrushali Bhausheb (2nd yr, Electronics and Communications Engineering), Sultan Morbiwala (3rd yr, Mechanical Engineering) and Dr R Udayakumar (Mechanical Engineering)

Aurora - Anketha Kannan (4th year, Chemical Engineering), Avani Mehta (4th year, Electronics and Instrumentation Engineering) & Belinda Sharon (4th year, Electronics and Instrumentation Engineering) and Dr. Shashank Khurana (Mechanical Engineering)

BITS EEE1 - Shivani Chelliah (4th year, Electronics and Communications Engineering), Bushra Mahmood (4th year, Electronics and Communications Engineering) & Nelli Sukumar Sonavi (4th year, Electronics and Communications Engineering) and Dr. Abdul Razak (Electrical & Electronics Engineering)

Vim Pulveres - Hamza Khan, Archit Agnihotri, Nishrin Gafoor and Rishika Ravikanth (all 4th year Biotechnology), Dr Trupti Gokhale (Biotechnology) and Dr Neeru Sood (Biotechnology)



Won ExpoLive Grant as a part of University Innovation Programme Organized by EXPO 2020 Team, Dubai

Title of the project: Smart and Safety Car



Theme of the programme: Sustainability, Mobility & Opportunity

Vehicles have become an essential part of everyone's life in today world especially in UAE where about 3.2 million vehicles are registered for the respective population averaging top 10 countries for the most number of vehicles travelling every day. Smart Cars have been a real leap in the automobile industry. The number of accidents per year are around 10,000 accidents which result in about nearly 2.7 fatalities per day about 90% of these accidents are due to Human errors. The issue of heat in cars in Dubai in parking lots is something that is unavoidable. Heat gets trapped inside by a great measure which is very injurious. There are a lot of infant fatalities that occur due to this greenhouse effect.

The technologies being implemented by us like the Vehicle to Vehicle communication, thin sheet batteries, heart beat sensor, thermoelectric cooling are already available but the problem is the cost. The use of thin sheet batteries effectively reduce the weight of the car by 15%. The issue of heat in cars in Dubai in parking lots is something that is unavoidable, the use of Thermoelectric cooling can help in reducing the heat trapped inside by a great measure. Thermoelectric cooling is a way to remove thermal energy from a medium, device or component by applying a voltage of constant polarity to a junction between dissimilar electrical conductors or semiconductors. Combining this with our thin sheet batteries and solar energy we can create a sustainable cycle to keep the car cool. The next application implemented is the use of heart beat sensor combined with the SOS V2V communication

allows us monitor an individual's heart beat and prevent him from falling asleep by giving him an alert. All the smart cars will be fitted with a SOS distress signal button. In case of an accident and there is no cell reception or access to internet, a distress signal will be given by the car using satellite communication and the authorities will be immediately alerted and the GPS position will also be sent. This can be the difference between life and death.

Our main focus is to reduce the number of road accidents by encouraging technology through to all the levels of society. It gives a cheaper alternatives and provides semi-autonomous driving to all.

Team Members: (All from 7th Semester, B.Tech Electronics and Communication Engineering)

1. Prashant Girirajan
2. Satyam Mishra
3. Mohammed Saad

Team Mentor: Dr. Ravishankar Dudhe



Best Presentation Award



Dr Bhakti More, Associate Professor, School of Design & Architecture, Manipal University, India received the Session's Best Presentation Award under the theme of 'Hospitality Management' for her paper 'Barrier Free Tourism – A New Paradigm for Inclusive Hotel Design & Planning in India' co-authored with Dr Senthilkumaran P and Mr Partho Seal, Faculty, Welcome Group Graduate School of Hotel Administration, Manipal University, India. The International Conference on Hospitality and Tourism Management (ICOHT 2017) was held from 17th – 18th Oct in Colombo, SriLanka on the theme, "Tourism & Hospitality around the World: Industry- Academia Collaborations, Innovations and the Future" and was attended by delegates from various countries.



American Society of Civil Engineers Competitions 2017



Civil Engineering students of MAHE Dubai participated in the UAE level competition organized by the American Society of Civil Engineers (ASCE) at American University of Sharjah (AUS). ASCE organized four events and our Civil engineering students has won First prize in “Water Rocket Launch” and “Q-TIP Dome” Competition. The team was runner up in “Spaghetti Bridge Competition” and secure third position in “Concrete Cube Crushing Competition”.



RTA Award: Dubai Award for Sustainable Transport - DAST 2017



School of Engineering & IT Final year Mechanical Engineering student Mr. Ramiz Umar Capstone project won the RTA Award (Dubai Award for Sustainable Transport - DAST 2017) for the best student research project Titled “ Design and Fabrication for Dual Source Automotive Air Condition Refrigeration System using SOLAR System” The Ceremony was held in Dubai World Trade Center

on 20th February 2017, in the presence of HH Sheikh Ahmed bin Mohammed bin Rashid Al Maktoum, President of the National Olympic Committee and Chairman of Mohammad Bin Rashid Foundation. The objective of the project is to reduce the carbon emission produced and fuel consumed, it is achieved by the dual compressor in the



same car. One is powered by SOLAR Energy while the other is powered by Engine. One compressor is used at a time depends on the battery charge. SOEIT Congratulate Mr.Ramiz Umar , Final Year Mechanical Student of class 2016 and Dr.Rajiv Selvam , Prof. Ganesan Subramanian for their Achievements.



Book Publication: Basic Electrical Engineering

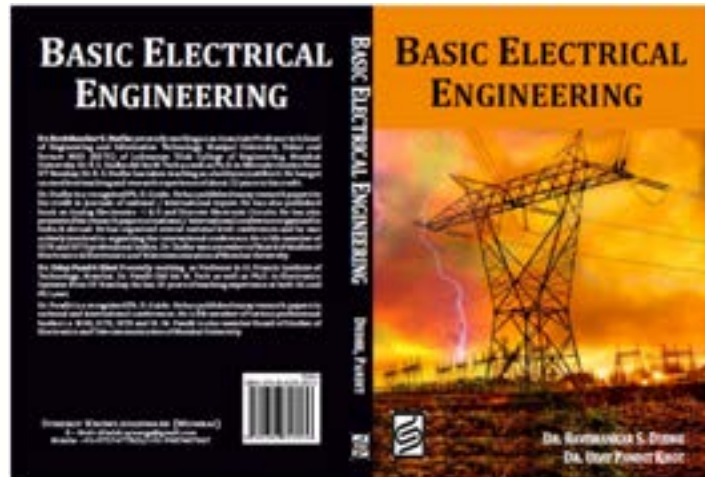


Authors: Dr. Ravishankar S. Dudhe & Dr. Uday Pandit Khot

The aim of this book is to give a clear and concise insight about the basics related with the electrical engineering fundamentals. It should prove useful both to engineers who have worked in other fields of telecommunications and to students.

The main aim of the book is to provide the complete basics of electrical in one volume.

This book starts with the fundamentals required for the electrical engineering where readers are made friendly with the basics of electrical fundamentals. This book covers DC networks, various laws and theorems useful to solve all DC networks. AC fundamentals and AC circuits are discussed in detailed. Series and Parallel resonance is integral part of the book. Basics of transformer and DC machines are also covered to allow reader to understand the fundamental concepts useful in electrical engineering.



Middlesex University Dubai Student Wins First Place in the Management Category at Abu Dhabi University's 5th Annual Undergraduate Student Research Competition in Abu Dhabi



On March 8th, 2017, 11 undergraduate students from Middlesex University Dubai competed at the 5th Annual Undergraduate Student Research Competition in Abu Dhabi University. This event has grown substantially since its inception and this year it attracted 454 submissions from 1,036 students from universities across the UAE. Following the early submission stage, a select number of students were chosen to present their research findings. The competition was fierce this year, with approximately

250 student research projects presented to the judging panels throughout the day. All our students presented their research expertly, and were commended for their skills by the judges. Our 3rd year Tourism student, Rachel Simmons (supervised by Dr. Cody Paris) was awarded first place in the Management category, and was presented with a cheque for 5,000AED. Congratulations to Rachel and Cody on this fantastic achievement!



VISION 2050

VISION 2050 is a competition organized by the ASCE student chapter, MAHE, Dubai on 9th November 2017. The competition showcased the student's imagination of the future of Civil Engineering through infographics. The First prize was bagged by the team, "M2050". The Second prize was won by the team "HEAL THE EARTH".

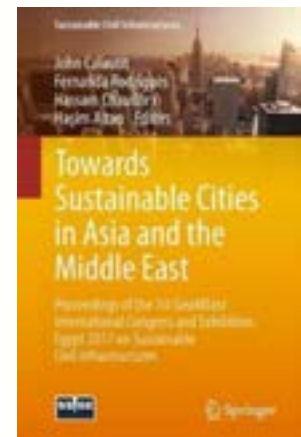


Book Title: Towards Sustainable Cities in Asia and the Middle East



Editors: Calautit, J., Rodrigues, F., Chaudhry, H., Altan, H.

Abstract: This volume presents innovative work on methods, tools and practices aimed at supporting the transition of Asian and Middle Eastern cities and regions moving towards a more smart and sustainable dimension. The role of the built and urban environment are becoming more pronounced in Asia and Middle East as the regions continues to experience rapid increase in population and urbanisation, which have only led to an increase in environmental degradation but also rise in energy consumption and emissions. Individual chapters covers timely topics such as sustainable infrastructure, transportation, renewable energy, water and methods supporting an innovative and sustainable development of urban areas. Real-world examples are presented to highlight recent developments and advancements in design, construction and transportation infrastructures. Dr Hassam Chaudhry, Director of Studies (Dubai) Architectural Engineering, School of Energy, Geoscience, Infrastructure and Society, Heriot-Watt University Dubai Campus is a member of the editorial team for this volume, which is part of the proceedings of the 1st GeoMEast International Congress and Exhibition on Sustainable Civil Infrastructures, which has held in Egypt in July, 2017.



Received the Excellent Paper Award at International Conference on Innovative Research in Science, Technology and Management



Dr . Ravishankar Dudhe & Prof. Sumathi Ayyalusami
SOEIT, Manipal Academy of Higher Education, Dubai Campus

Paper Title: Microfluidics based Blood protein separation and behavior modelling implemented using COMSOL Multiphysics

Abstract: Present and future point of care in biomedical area delves the essentiality and sustenance role of flexibility in microfluidics design. Proteins are vital in understanding complex

biological systems through metabolic processes, and influences DNA and RNA. Portable device, to identify proteins in real time, combined with isolation, as separated proteins offers understanding of specified biological activity in altered dimension. Existing methods sometimes takes chances to denature proteins chemically. This paper discusses separation behavior and focal points for blood protein sample, in response to ampholytes, temperatures and potentials influencing the microfluidic device design with application of isoelectric focusing. This study aids in predefining the condition for designers offering economic advantage in reducing fabrication cycle.



The Influence of Organisational Identification on Employee Attitudes and Behaviours in Multinational Higher Education Institutions.



Wilkins, S. Butt, M.M. & Annabi C.A. (2017)
The influence of organisational identification on employee attitudes and behaviours in multinational higher education institutions. Journal of Higher Education Policy and Management, <https://doi.org/10.1080/1360080X.2017.1411060>

In order to operate effectively and efficiently, most higher education institutions depend on employees performing extra-role behaviours and being committed to staying with the organisation. This study assesses the extent to which organisational identification and employee satisfaction are antecedents of these two important behaviours. Key objectives of the research were to identify possible antecedents of organisational identification and to discover whether the consequences of

organisational identification vary among the employees of multinational universities at home and foreign campuses. We developed a model that was tested using structural equation modelling, which assesses the influences of organisational identification on employee satisfaction, extra-role behaviours and turnover intentions. All of the paths in our model were significant, but employee identification, satisfaction and extra-role behaviours were lower at foreign branches than at the home campuses of universities, and turnover intentions were higher. These results suggest that higher education institutions need to implement different human resource strategies at home and foreign branches, with a focus on improving organisational identification at the foreign subsidiaries.

Book of Abstracts by Professor Ashok Iyer



The Chairperson of The School of Design and Architecture, Professor Ashok Iyer's ongoing PhD research has been published in the RIBA President's Awards for Research 2017 - Book of Abstracts, ©RIBA 2017 (ISBN: 9781859468500, Edited by Dr Kat Martindale and Dylan Dixon). Entitled, "Approaches to Learning in Architectural Design

- A Classification," this abstract has been listed under the theme History and Theory in the edited compilation. Prof. Ashok is currently pursuing his PhD Studies at Welsh School of Architecture (2011). His research is looking at the classification of the approaches to learning adopted by students in their design coursework through the five years of the architecture program. An architect by profession, he has pursued his architectural studies at Sir J.J. College of Architecture, Mumbai; India (Master in Architecture, 2004) and at Pillais' College of Architecture, Navi Mumbai; India (Bachelor of Architecture, 1997). He was a faculty at Sir J.J. College (2002-04) & Rizvi College of Architecture (1999-2002), Mumbai; India before establishing interior design & architecture programs at SoDA – Dubai. His other research interests include urban studies & historic architectural developments from the construct of Pattern Language, issues of sustainability in contemporary architecture; fine arts & architecture heritage. His hobbies include philately & numismatics; fountain pens & sketching.



RIT Dubai Receive Siemens' Software Grant under the Patronage of UAE Ministry of Education



RIT Dubai chosen as one of five universities to receive the grant worth 100m euros in total as part of the Year of Giving.

Rochester Institute of Technology Dubai (RIT Dubai) have recently been chosen as one of five prestigious universities from across the UAE to be awarded with a substantial grant by Siemens. The grant, valued at 100m euros in total, will give students and researchers at the university access to a range of the technology giant's computational packages, including Siemens' Product Lifestyle Management (PLM) software, a uniquely valuable and extremely sophisticated design and simulation tool that has been a key component of globally significant projects including the Mars Rove Curiosity, the Maserati Ghibli car and the Solar Impulse aircraft which flew around the world without using any fuel.

Undergraduate, graduate, faculty and researchers from RIT Dubai's multiple mechanical engineering programs are set to benefit from the grant which will aid research in computational mechanics and computer aided design and manufacturing.

The grant was offered by the UAE Ministry of Education and Siemens in a bid to advance digital skills in the country to support its economic diversification goals and underscores Siemens' contribution to the Year of Giving in 2017. The license handover was made this week during a signing ceremony in Abu Dhabi, attended by His Excellency Dr. Ahmed Belhoual Al Falasi, the UAE's Minister of State for Higher Education and Advanced Skills, and Joe Kaeser, President and CEO of Siemens AG.



"As the UAE transitions to a competitive, knowledge economy, building the skills of the future among UAE nationals is a top priority. The software grant from Siemens is a significant contribution to enhancing local digital skills, as they become increasingly essential for the development of this country and the jobs of tomorrow," said His Excellency during the signing. "We extend our gratitude to Siemens,

a trusted private sector partner of the Ministry of Education, for their generosity and commitment during the Year of Giving."

RIT Dubai won the grant on the back of an open call for submissions of compelling ideas that illustrated how they would use the software.

Dr. Wael A. Samad, Assistant Professor of Mechanical Engineering at RIT Dubai, who co-authored the University's proposal commented: "I am greatly looking forward to using the software during both my graduate and undergraduate classes for a better transition to industry 4.0. The proper integration of the software within our course curricula will give our students an excellent opportunity to be exposed to the latest computational tools out there and a tremendous edge in the job market."

Dr. Salman Pervaiz, Professor of Mechanical Engineering at RIT Dubai and proposal co-author added: "In the search for more sustainable and environmentally friendly production, every phase of the production cycle needs to be examined properly and digitalized to maximize profitability and efficiency. Digitalization using Siemens' PLM software can integrate business models, product development and manufacturing simultaneously throughout the whole life cycle. It will be an enormous asset to RIT Dubai."

Dr. Yousef Al Assaf, President of RIT Dubai, concluded: "As the only non-public university to win this prestigious scholarship, I have no doubt that it will make a huge difference to numerous learning and research initiatives at RIT Dubai. I would like to thank Dr. Salman Pervaiz and Dr. Wael Samad for their hard work and dedication in preparing an excellent

proposal which highly impressed the evaluating team of both the Ministry of Education and Siemens evaluators."

RIT Dubai was awarded the grant alongside UAE University, Zayed University, Higher Colleges of Technology and Khalifa University of Science and Technology.



ICE Real World Engineers Challenge



Institute of Civil Engineers organized a real world engineer's challenge for undergraduate civil engineering students in universities across UAE. This is an engineering design and construction challenge the purpose of which is to instill innovation, problem solving and adaptability in the Civil Engineers of tomorrow. Participants form an emergency relief team that is transported to a remote island where a recent natural disaster has taken place. Students are presented with a real-life problem and are required to develop practical design solutions, present them (incorporating potential language barrier) and then build it full scale. These built structures are tested under extreme environmental conditions for final results.

When the students of all participating universities arrived at the Dutco Beaty Training Center, they were given a HSE induction by Mr. Angelo Manesero, Senior Engineer at Dutco. Then Mr. Haider Abbas, President of ICE Graduate and Student Committee, introduced the students to the first stage of the competition. The first stage of the competition, students were tasked to provide two viable solutions



for the task at hand. Each university was given a different task. The students were given one and half hours to prepare the two solutions and were given five minutes to present the same. The mode of presentation was only visual and the students presented their solutions to the judges inside the building through a window.

After completion of the first stage, the students were tasked to build a life-sized model of a structure that could withstand an earthquake of magnitude 5 and torrential rain. Time allotted for this stage was four hours. The students of MUD built a tent like raft to resist the stated conditions.



Testing was conducted on all structures for earthquake and toppling effect by using a fork-lift and torrential rain was tested by a water hose. The structure constructed by the students of MAHE Dubai was successful in resisting all three conditions. The students of MUD won second place in this challenge and were awarded a shield along with one month internship at DUTCO BALFOUR BEATTY.

ICE Emerging Engineers Award



Organized by Institute of Civil Engineers, the Emerging Engineers Award (formerly known as the Graduate and Students Paper Competition) celebrates the best work in research, innovation, and its presentation, of Student and Graduate members in the UAE and from around the world. The competition is open to all ICE graduate and student members with papers on any area of engineering design, research or practice. Two out of three abstracts sent by MAHE Dubai students were shortlisted as top five entries and Mohammed Usman Baig, student of civil engineering department, won the second prize.



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