

# AETA International Conference on Research in Design Science, Engineering, Information Technology, Communication & Internet of Things (RDEI)

Conference organized by:





Association of Engineering Technology & Applied Sciences (AETA) aims to provide a forum for researchers, practitioners, and professionals from the industry, academia and government to discourse on research and development, professional practice in engineering technology and applied sciences..

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AETA is an organization aims to provide a platform to innovative academicians and researchers around the globe. The organization also encourages research activities by organizing research training workshops, conferences and publishing high quality research manuscripts in reputable international journals.

AETA is a dedicated platform to promote and encourage the latest advancements in Science, Engineering Technology & Applied Sciences for the betterment of human development.

We are passionate about discovering new ways to create value for our members and society. Driven by intellectual curiosity, we promote a culture of invention among all our delegates.

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# AETA International Conference on Research in Design Science, Engineering, Information Technology, Communication & Internet of Things (RDEI)

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# Welcome Message

AETA International Conference on Research in Design Science, Engineering, Information Technology, Communication & Internet of Things (RDEI)

We are happy you decided to join your colleagues from around the world to explore innovative technologies, pioneering pedagogical strategies, and a sampling of international collaborations that are being used to engage and retain students, researchers and Scholars in the new millennium.



### **Scientific Committee**

Prof. Kaninda Musumbu, LaBRI, Universite Bordeaux 1, France

Prof. Figueira, F. M. Monteiro, ULHT - Universidade Lusofona, Portugal

Dr. Ahmad Fairuz Bin Omar, School of Physics, University Science Malaysia, Malaysia

Dr. Le Hoang Son, Hanoi University of Science, Viet Nam National University, Vietnam

Dr. Emil Pricop, Petroleum-Gas University of Ploiesti, Romania

Prof. Viacheslav Pshikhopov, Southern Federal University, Russian

Prof. Chomtip Pornpanomchai, Faculty of Information and Communication Technology, Mahidol University, Thailand

Prof. Anjaiah Devineni, Manipal University, India

Prof. Dong-Chul Park, Myong Ji University, KoreaProf. Mohamed Ben Haj Frej, POST University, USA

Abdulrhman.A.A.Emhemed, Assistant Professor, College of Technical Sciences-Bani walid, Libya

### Acknowledgements

The organizing committee would like to thank all those people who were involved in making the conference a success. A great amount of planning and organizing is required to hold a successful conference, so we are indebted to those who volunteered their time and energy.

We want to thank all the members of the Association of Engineering Technology & Applied Sciences who volunteered their time to help organize the conference.



### **Engineering & Technology Studies**

Acoustical engineering Agricultural engineering Aquacultural engineering Aquatic and environmental engineering Architectural engineering Army engineering maintenance Atomic engineering Aviation engineering B Biological interface engineering Biomechanical engineering Bioresource engineering Broadcast engineering Building services engineering C Ceramic engineering Chemical engineering Civil engineering Civionics Climate engineering Cloud engineering Collaborative engineering Computer engineering Computer-aided production engineering Construction engineering Control engineering Cost engineering D Detailed engineering E Earthquake engineering Ecological engineering Electrical engineering Electronic engineering.

### **Accounting**

Accounting Practices, Financial Modeling, Financial Analysis, Financial Statistics, Future Markets, Risk, New Trends for Accounting and Finance, Research for Accounting, Tax Theories and Practices, Tax Avoidance, Invasion and Extraction from Tax Invasion, Corporate Finance, Finance Theories, Money, Credit and Banking, Stock, Currency and Bonds, Commodity

### **Computational Engineering**

omputational science and engineering (CSE) is a relatively new discipline that deals with the development and application of computational models and simulations, often coupled with high-performance computing, to solve complex physical problems arising in engineering analysis and design (computational engineering) as well as natural phenomena (computational science). CSE has been described as the "third mode of discovery" (next to theory and experimentation).[1] In many fields, computer simulation is integral and therefore essential to business and research. Computer simulation provides the capability to enter fields that are either inaccessible to traditional experimentation or where carrying out traditional empirical inquiries is prohibitively expensive. CSE should neither be confused with pure computer science, nor with computer engineering, although a wide domain in the former is used in CSE (e.g., certain algorithms, data structures, parallel programming, high performance computing) and some problems in the latter can be modeled and solved with CSE methods (as an application area). A Agent-based computational economics Algorithmic art Artificial intelligence Astroinformatics Author profiling B Biodiversity informatics Biological computation C Cellular automaton Chaos theory Cheminformatics Code stylometry Community informatics Computable topology Computational aeroacoustics Computational archaeology Computational astrophysics Computational auditory scene analysis Computational biology Computational chemistry Computational cognition Computational complexity theory Computational creativity Computational criminology Computational economics Computational electromagnetics Computational epigenetics Computational epistemology

### **Interdisciplinary**

Children and Youth, Communications and Media, Complex Systems, Conflict resolution, Creativity, Culture, Disaster Management, Discourse, Film studies, Gender studies, Globalization, HIV/AIDS, Human Rights, Identity, LGBT Studies, Leadership, Memory, Multidisciplinary Studies, Poverty, Public Policy, Security, Sexuality and eroticism, Spirituality, Sport science, Sustainable development, Urban studies, Violence Women's studies

# General Economics, Economic Development, Technological Change and Growth

Microeconomics, Household Behavior and Family Economics, Economic Development, Sustainable Development, Eco-Development, Production and Organizations, Welfare Economics, Macroeconomics and Monetary Economics, International Economics, Public Economics, Analyses of Economic Development, Agriculture; Natural Resources; Energy; Environment; Other Primary Products, Human Resources; Human Development; Income Distribution; Migration, Economic Development: Financial Markets; Savings and Capital Investment; Corporate Finance and Governance, Regional, Urban, and Rural Analyses, International Linkages to Development; Role of International Organizations, Fiscal and Monetary Policy in Development, Trade Policy; Factor Movement Policy; Foreign Exchange, Innovation and Invention: Processes and Incentives, Management of Technological Innovation and Research and Development



# **IT Business**

Business for AI and Deep Learning, Technological Forecasting and Social Change, Business for Big Data, Internet of Things and Cloud Computing, Business for IT-driven Services, Information Systems and Informatics, ICT for Business, ICT for Education, Healthcare, Finance and Other Sectors, Large Scale Surveys and Analysis, HCI and Computers Human Behavior, Computers In Industry



### **Conference Schedule**

# **AETA International Conference on Research in Design Science, Engineering, Information Technology, Communication & Internet of Things (RDEI)**

Rome, Italy September 25-26, 2019

09: 00 am 09: 30 am
Registration and Reception
Introduction of Participants
O9: 40 am - 09:50 am
Inauguration and Opening address
O9: 50 am - 10:00 am
Grand Networking Session
Tea Break



# **AETA International Conference on Research in Design Science, Engineering, Information Technology, Communication & Internet of Things (RDEI)**

Day 01: Wednesday September 25, 2019

Session 01: 10:15 am - 12:00 pm

#### Track A: Business Management, Economics, Social Sciences & Humanities

Presenter Name: Xiaoheng Shen Reference ID: ABMSE-SEP-10

Paper Title: Human Capital and Innovation in China: Relationship and Regional Heterogeneity

Presenter Name: Xiaokun He Reference ID: ABMSE-SEP-11

Paper Title: R&D Expenditure, Intellectual Property Protection and Enterprise Performance in China

Presenter Name: Jose Stalin Rojas Amaya MSc

Reference ID: ABMSE-SEP-13

Paper Title: Spaces of Value for the Model of Traditional Taxis Applying the Theory of Constrains

Presenter Name: Resul AYDEMIR Reference ID: RMS-499-101

Paper Title: Macro Stress Testing the Conventional and Participation Banks Using Semi-Parametric Quantile Regression

Analysis: Evidence from Turkish Banking Industry

Presenter Name: Dr Jaswina Bihari-Elahi

Reference ID: SHAE-09-105

Paper Title: Strengthening Resilience of Youth on the Labor Market Industry

Presenter Name: Dr Leila Mohajer Reference ID: SHAE-09-107

Paper Title: Gender or status? Power Demonstration in Doctor-patient Interaction in the Malaysia Context

Presenter Name: Itsarate Dolphen Reference ID: SHAE-09-111

Paper Title: The Strategies for Addressing Main Characters In Isan Literature: A Case Study Of Khulu-Nang Ua

Session 02: 12:00 am - 12:30 pm

#### Track B: Engineering Technology & Applied Sciences

Presenter Name: Michael J Bryant

Reference ID: RDEI-09-P1

Paper Title: User Acceptance of Downloaded Mobile Services

Presenter Name: Majid Sarrafzadeh

Reference ID: RDEI-09-P5

Paper Title: Smart Insole: Pedometer and Toe Walk Detection Platform For Remote Monitoring of Walking Patterns

Closing Ceremony & Lunch (12:30 pm - 01:30 pm)



### **Conference Attendees**

The following scholars/practitioners/educationist who don't have any paper presentation, however they will attend the conference as delegates & observers.

Participant Name: Irena Miletic

Reference ID: RDEI-09-P3

Country: Faculty of Humanities and Social Sciences, University of Rijeka, Department of Psychology Sveucilisna avenija 4

51000 Rijeka Croatia

Participant Name: Barbara Baker

Reference ID: ABMSE-SEP-01

Country: Department of Art & Design, Faculty of Arts, University of Alberta

Participant Name: Simon J Wilde

Reference ID: RDEI-09-P6

Country: School of Business and Tourism, Southern Cross University, Australia



# **AETA International Conference on Research in Design Science, Engineering, Information Technology, Communication & Internet of Things (RDEI)**

Day 02: Thursday September 26, 2019

Conference second day is reserved for participants own tourism activities.



# **Conference Abstracts**

Track A: Business Management, Economics, Social Sciences & Humanities



# **Human Capital and Innovation in China: Relationship and Regional Heterogeneity**

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This paper tries to analysis the relationship of human capital and regional innovation ability in China. We employ 31 provincial panel data ranged from 2000 to 2017 in China to analysis this relationship, after controlled local economic development, industry structure, fiscal condition, enterprise development etc., the two-way fixed effect model reveals that human capital indeed improves regional innovation, every 1% increase in human capital is positively associated with 8.9% increase in local patent application, this relationship is robust with additional control variables that may affect both human capital and innovation are included in the model. We further discuss the heterogeneity of this relationship across china. By dividing 31 provinces into West, Middle, and East area, we find that human capital is most significant in West areas, which implicates that human capital is essentially important for less developed regions. Our study has provided macro evidence that human capital is one of the most important factors that stimulate innovation thus economic growth, and related policy should consider the heterogeneity across regions.

Index Terms: Expenditure on education, Human Capital, Regional Innovation



# **R&D** Expenditure, Intellectual Property Protection and Enterprise Performance in China

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This paper explores the effect of Research and Development (R & D) input and intellectual property protection on the profitability of Chinese enterprises. We employ provincially panel data in China ranged from 2009 to 2016, and constructed two-way fixed effects econometric model to estimate, the OLS results show that regional expenditure in R& D significantly improves the performance of Chinese enterprises, every percentage increase in R & D expenditure is associated with 0.24% increase in enterprises profitability, we further discuss the heterogeneity of this relationship by split our sample into eastern, central and western areas, the regression results show that the relationship of R&D expenditure and enterprise performance is driven by eastern area. Meanwhile, we jointly explore the effect of R&D expenditure and intellectual property on enterprise profitability by adding interaction term to the model, we find that the intellectual property protection also stimulates enterprises performance, and the effect of R & D expenditure on profitability depends on the initial value of intellectual property protection. Our results help us to understand about policies that can be used to stimulate enterprise profitability in China.

Index Terms: China, Fixed Effect Model, Intellectual Property Protection, Profitability, Research and Development



# **Spaces of Value for the Model of Traditional Taxis Applying the Theory of Constrains**

Jose Stalin Rojas Amaya MSc \*

Professor/Director of Master's Degree in Administration and Researcher, Mobility and Logistics Observatory of the Universidad Nacional de Colombia

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The Theory of constrains - TOC uses the concept of limitation to explain why companies cannot achieve the goal of generating maximum profit. By using the TOC categories to the taxi operating model, it is possible to identify several limitations: The affiliation system, the prices applied to the user in each trip per meter, the time of use of the car, the working schedule of the drivers and recently, it is considered as constrain the perceptions of comfort and insecurity for the user regarding the transport service through applications (STAPPs - uber and similar). Bogota (Colombia), has about 7 million inhabitants and 5.5% of the population uses taxis, there are 52,390 taxis and travel times average is about 36 minutes. Considering the above context, the following question arises: Is it possible to increase taxi incomes with the aforementioned constrains? On the other hand, the market research companies model offers its services of product testing or perception surveys based on people's answers, offering a minimum compensation to those who answer or participate in such surveys, all of this under statistical representativeness parameters. Interpreting this business model with the conceptual categories of the TOC, the main constrain is the statistical representativeness in order to make the answers reliable. Finally, the document proposes that based on the TOC model, the market research business model can be incorporated into the operating model of traditional taxis in order to economically exploit the travel times of taxi users.

**Index Terms:** Theory of Constrains (TOC), Uber, Taxis.



### **Strengthening Resilience of Youth on the Labor Market**

Dr. Jaswina Bihari-Elahi \*

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Youngsters with a migrant background from deprived areas often have to overcome systematically rejections on the labormarket caused by different excluding mechanisms such as discrimination, lack of the right competences or language deficiency. In order to avoid these group dropping out of the labor market, it is important to strengthen their resilience, so they can overcome the setbacks on the labor market. Though there is a lot written about resilience, there is a big gap in literature and a lack of methods when it comes to resilience for the labormarket and strengthening of this kind of resilience. The central question in this research therefore is how resilience among jobseekers can be strengthened by professionals. In order to answer the central question, a practice-oriented study was carried out, consisting of a preliminary research among young adults from the deprived area Molenwijk (in The Hague, The Netherlands) who succeeded in gaining a position on the labor market despite exclusion mechanisms. Followed by an action research in the form of a labor market trajectory for unemployed young people. The findings shows that resilience on the labor market is specific and can be strengthened by an intensive training.

Index Terms: Resilience, Youth, Labor Market, Excluding Mechanism



# Gender or status? Power Demonstration in Doctor-patient Interaction in the Malaysia Context

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This study investigates the ways in which gender and status of doctors and patients create power among them. In order to conduct this research and observe power relations, we look at the interruption patterns in doctor-patient interaction because interruption provides an opportunity for interactants to dominate the conversation which can have negative effects on the treatment and consultation process. The data consists of 480 minutes of recorded conversations between doctors and patients of both genders during 160 consultation visits. We have used both quantitative and qualitative methods to analyse our data; however, qualitative method is more prominent. Conversation analysis has also been used to evaluate the interruption elements in their talk. The findings indicate that the gender of the interactants in a determining factor in number and the type of the interruptions that they make. It appears that male interactants in this study, regardless of their status as a doctor or patient, make more intrusive interruptions than female interactants. In addition, the status of the interactants influence the interruption process. Doctors, holding a higher status compared to the patients at the time of consultation, made more intrusive interruptions and patients made more cooperative interruptions while it was not the case when the doctor was a female. Based on our findings, listening skills and communication training for both female and male doctors can minimize miscommunication during consultation visits and enhance healthcare quality.

Index Terms: Doctor-Patient Conversation, Gender, Status, Interruptions



# The Strategies for Addressing Main Characters in Isan Literature: A Case Study Of Khulu-Nang Ua

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Khulu-Nang Ua is one of the most famous Isan literature in Northeast Thailand. This literature belongs to a tradition of tragic romances as Romeo and Juliet but in Isan version. The plot is based on an Isan folktale written in verse without any evidence of the writer but revised by Preecha Phinthong (1981). Besides having good plot and using beautiful words to compose this tragic story, the strategies the writer used to address the main characters, Khulu and Nang Ua, are remarkable. Therefore, this paper aims at exploring the strategies for addressing main characters in the Northeastern Thai literature of Khulu-Nang Ua. Only the main characters, Khula (the hero) and Nang Ua (the heroine) are explored. The content analysis is applied for the methodology of this study. The findings reveal that there are two main strategies for addressing main characters in Khula-Nang Ua which are 1) direct address and 2) indirect address. For the direct address, there are four sub-strategies to be used as follows: 1) name, 2) name title + name, 3) name title + name + modifier, and 4) name + modifier. As for the indirect address, there are four sub-strategies as well that the writer used them to address main characters in this story as follows: 1) metaphorical words, 2) pronouns, 3) name title, and 4) name title + modifier. It was found that the metaphorical words was often used as the main strategies to address the characters, especially for Nang Ua. This is because many metaphorical words were found and used diversely.

Index Terms: Strategies, Address Term, Main Characters, Isan literature, Khulu-Nang Ua



# Macro Stress Testing the Conventional and Participation Banks Using Semi-Parametric Quantile Regression Analysis: Evidence from Turkish Banking Industry

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We examine the resilience of conventional and participation banks in Turkey against risk shocks for the period 2005M1-2018M12. We employ time series based aggregate semiparametric quantile regression approach due to its superiority over other techniques used in current stress tests. It can capture potential nonlinear relationship between dependent and independent variables which is a challenge in stress testing. Moreover, it provides more flexibility than linear regression models that require more restrictive assumptions. We also contribute to the literature by specifying scenario analyses that differ from earlier studies. Rather than using random simulations based on autoregressive models, we utilize distributions such as logistic and extreme value as they are more appropriate for modelling financial crisis. We conduct several robustness checks for the soundness of the analysis. The results shed light on issues that are critical for banking industry and regulators in Turkey

Index Terms: Macro Stress Tests, Participation Banking, Semi Parametric Quantile ,Regression, Credit Risk



# **Conference Abstracts**

Track B: Engineering Technology & Applied Sciences



### **User Acceptance of Downloaded Mobile Services**

Michael J Bryant (PhD) <sup>1\*</sup>, Simon J Wilde <sup>2</sup> <sup>1,2</sup>School of Business and Tourism, Southern Cross University, Australia **Corresponding email:** m.bryant.20@student.scu.edu.au

The ubiquitous adoption of Information Communication Technology (ICT) smartphone devices has been driven by user demands for features, and functionality eclipsing basic mobile phone technology. One core utility feature developed for smartphones, is the ability to easily access, and use Location Based Services (LBS) applications (apps). Expanding upon prior Technology Acceptance for Mobile Services (TAMM) research, this study investigates core influences of user acceptance on LBS weather apps using smartphone devices. Utilising Exploratory Factor Analysis (EFA) in this research context, four key factors of user acceptance were identified as: Ease of Use, Trust, Value, and Ease of Adoption. Moreover, results from this research showed elevated responses to Ease of Use, and Ease of Adoption scale items from the 178 survey respondents who downloaded a weather app for use on their smartphone mobile device. Given the increase in development of LBS apps, future enquiry could engage in a broader research scope by investigating the influencing effects of TAMM constructs on user acceptance of various LBS classifications, across an expanded array of ICT mobile devices.

Index Terms: TAMM, Location Based Services, Downloaded Apps, Information Systems



# **Smart Insole: Pedometer and Toe Walk Detection Platform For Remote Monitoring of Walking Patterns**

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1,2,3,4,5,6 Computer Science Department University of California Los Angeles, USA

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Toe walking is a pattern of walking where an individual strolls on the balls of their feet rather than with their heels touching the ground. Toe walking can cause stiff calf muscles and reduced ankle motion. We propose Smart Insole, a platform for real-time monitoring which counts different patterns of walking and provides the biofeedbacks to adjust the toe walks. Our data acquisition framework captures data from two force sensors embedded in the insole where the ball of the foot and heel is posed. After data analysis in a gait cycle and detecting the type of activity, insole vibrates if consecutive toe walks are observed. Furthermore, a connected android application transmits sensor values and activity recognition to the database in real-time. We evaluated the accuracy of our activity recognition algorithm in a study with three women. Our proposed activity recognition algorithm can detect toe or normal (heel to toe) walking, sitting, and standing with the mean accuracy of 79varying between subjects and different paces of walking. Smart Insole provides precise and high standard guidelines for orthopedic experts and patients to monitor activity patterns and outgrow toe walking.

Index Terms: Embedded, Pedometer, Platform



# **Upcoming Events**

https://association-eta.com/esab-oct-19/
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