2013 Science and Information Conference

(SAI 2013)

London, United Kingdom
7-9 October 2013

IEEE

IEEE Catalog Number: CFP13SAA-POD
ISBN: 978-1-4799-1272-8

Contents

Section 1 : Keynotes, Invited Talks and Tutorials

KEYNOTE SPEAKER

Professor Kevin Warwick - The Disappearing Human-Machine Divide 16

INVITED TALKS

Tony Shan - Big Data in Practice 17

Cyriel Kortleven - Break, Burn or Ban the Box 17

Professor Frank Zhigang Wang - Towards 2020 Computing 18

Professor Yaroslav D. Sergeyev - Infinity Computer 18

Professor Mark Leeson - Nanoscale Communications 19

TUTORIALS

Dr. Peter Sapaty - Ruling Distributed Dynamic Worlds with Spatial Grasp Technology 20

Prof. Dorian Gorgan & Dr. Gregory GIULIANI - enviroGRIDS project 21

Section 2 : Paper Presentations

TECHNOLOGY TRENDS

Towards Effective Eye Pointing for Gaze-Enhanced Human-Computer Interaction 22
Authors: Enrico De Gaudenzi, Marco Porta

An accessible, adaptive and multimodal digital TV framework and corresponding development tool 28
Authors: Pradipta Biswas, Pat Langdon, Carlos Duarte, Jose Coelho, Tiago Guerreiro, Christoph Jung

Assessment Tools and Techniques for e-Learning Evaluation: Usage Analysis and Survey Sampling 38
Authors: Zoltán Balogh, Michal Munk, Milan Turčáni

Waiting Blocked-Tree Type Deadlock Detection 45
Authors: Takao Shimomura, Kenji Ikeda

Towards Ambient Intelligence in Assisted Living: The Creation of an Intelligent Home Care 51
Authors: Sherief Mowafey, Steve Gardner

Congressional Close Up: Automatically Exploring Anomalous Voting Behavior in the U.S. Congress 61
Authors: Lisa Gandy, Kristian Hammond

Achieving Scalability in a Distributed Electronic Health Record System 68
Authors: Xin Zhang, Tingting Zhang

Detecting Software Aging in Safety-Critical Infrastuctures 78
Authors: Mark E. G. Sabino, Madjid Merabti, David Llewellyn-Jones, Fayçal Bouhafs

Doctor's perspective for Use of EHR Visualization Systems in Public Hospitals 86
Authors: Muhammad Sheraz Arshad Malik, Suziah Sulaiman

Real Time Control of Multi-Agent Mobile Robots with Intelligent Collision Avoidance System 93
Authors: Aya Souliman, Abdulkader Joukhadar, Hamid Alturbeh, James F. Whidborne

Approximate Symbol Error Rate for M-ary Phase Shift Keying (M-PSK) using Maximum Ratio Combining (MRC) Technique over Fading Channels 99
Authors: Mahmoud A. Khodeir, Muteeah Jawarneh

Web Searching Behaviour for Academic Resources 104
Authors: Abeer Alharbi, Dan Smith, Pam Mayhew

Leveraging Smart Monitoring and Home Security Technology for Assisted Living Support 114
Authors: Besim Mustafa, Peter Matthew, Farrukh Naveed

Constructing hybrid architectures and dynamic services in Cloud BPM 124
Authors: José Martinez Garro, Patricia Bazán
Wearable Physical and Psychological Health Monitoring System 133
Authors: Kohei Arai
Software Project Management in Virtual Teams 139
Authors: Bakhtawar Seerat, Marriam Samad, Muhammad Abbas
Nonholonomic Control of a Planar Prismatic-Revolute Under-actuated Manipulator 144
Authors: Licheng Wu, Kuai Xinkai, Guosheng Yang
FPGA-based Reconfigurable Computer Systems 148
Authors: Igor A. Kalyaev, Ilya I. Levin, Alexey I. Dordopulo, Liubov M. Slasten
Wireless System for Detecting Human Temperature 156
Authors: T. Medjeldi, S. Guillemette
Software Ageing Measurement and Classification Using Goal Question Metric (GQM) Approach 160
Authors: Jamaiah H. Yahaya, Zaiha Nadiah Zainal Abidin, Noorazean Mohd Ali, Aziz Deraman
Optimization Design of Microchannel Heat Sink Based on Taguchi Method and Simulation 166
Authors: Harry Garg, V. Karar, Ravneet Kumar, A. K. Lall
Technology for Psychosocial Interventions for Individuals with Alzheimer's: Reminiscence Therapy and Monitoring Progressive Decline of Cognitive Abilities 171
Authors: Hailah AlMazrua, Areej Al-Wabil, Hala Al-Muhanna, Rawan Al-Wabil
Risks factors identification and assessment in Virtual Projects of Software Industry: A Survey Study 176
Authors: Iqra Basharat, Tayyaba Nafees, Dr Muhammad Abbas
Heterogeneous Parallel Facilities 182
Authors: John Sanders
HTM5-Trade Model for Relationship Based Trade Modelling in Multi Agent Systems 188
Authors: Vineet Nagrath, Olivier Morel, Aamir Saeed Malik, M Naufal B M Saad, Fabrice Meriaudeau
On the numerical analysis of contact stresses in a Total Knee Replacement (TKR) 197
Authors: Rodríguez-Martínez R., Urriolagoitia-Sosa G., Torres-San Miguel Ch. R., Hernández-Gómez L. H., Martínez-Sánchez I, Urriolagoitia –Calderón G.

SOFTWARE ENGINEERING

Challenges of Project Management in Global Software Development: Initial Results 202
Authors: Mahmood Niazi, Sajjad Mahmood, Mohammad Alshayeb, Mohammed Rehan Riaz, Kanaan Faisal, Narciso Cerpa
A Generic Framework for Automated Quality Assurance of Software Models - Application of an Abstract Syntax Tree 207
Authors: Darryl Owens, Dr Mark Anderson
Trials and Tribulations of BCI Control Applications 212
Authors: Najwa Al-Ghamdi, Ghada Al-Hudhud, Mai Alzamel, Areej Al-Wabil
Requirements Engineering Practices In Small and Medium Software Companies: An Empirical Study 218
Authors: Iqra Basharat, Memuna Fatima, Rozina Nisa, Rabia Hashim, Dr Assia Khanum
Risk Management System for ERP Software Project 223
Authors: Muhammad Zaman Fakhar, Dr. Muhammad Abbas, Madiha Waris
Factors Effecting Service Oriented Architecture Implementation 229
Authors: Madiha Waris, Dr. Shoab Ahmad Khan, Muhammad Zaman Fakhar
A Generic Framework for Evaluation Phase in Games Development Methodologies 237
Authors: Rula Al-Azawi, Aladdin Ayesh, Ian Kenny, Khalfan A AL-Masruri
Acclimations of Petri Net Theory in Real-Time System for Hybrid Plant 244
Authors: B. B Abu Bakar, M. S. Osman
Design of standard of real-time data acquisition from SMD devices and integration with ERP system 249
Authors: Maximilian Stremy, Andrej Elias
Reducing the gap between security audit and software engineering methods 255
Authors: Ikram EL RHAFFARI, Ounsa ROUDIES

An Ameliorated Methodology for the Abstraction of Usecases from Software Requirements Specification 263
Authors: Dr. Shivanand M. Handigund, A. M. Shivaram
An enhanced Use Case diagram to model Context Aware Systems 270
Authors: Saad Almutairi, Ala Abu-Samaha, Feng Chen
Abstract Conceptual Database Model Approach 275
Authors: Nergiz Ercil Çağıltay, Damla Topallı, Yusuf Evren Aykaç, Gül Tokdemir
Critical success factors assessment in Software Projects 282
Authors: Rabia Hashim, Dr. Muhammad Abbas, Muhhammad Hashim

SOCIAL COMPUTING

Developing a Theoretical Framework of Social Network Site (SNS) Appropriation in Family Context 288
Authors: Yuzi Mahmud, Nor Zairah Ab. Rahim, Suraya Miskon
Evaluating the Power of Homophily and Graph Properties in Social Network: Measuring the Flow of Inspiring Influence Using Evolutionary Dynamics 294
Authors: Hameed Al-Qaheri, Soumya Banerjee, Goldina Ghosh
Socio-materiality of online music ensembles: An analysis based on cultural artifacts & affordances 304
Authors: Demosthenes Akoumianakis
Evaluating community structure in the large network with random walks 315
Authors: Jiankou Li
Formulating Cohesive Digital Ecosystem of Micro Sourcing Business Process in Malaysia 321
Authors: Siti Salwa Salleh, Noor Habibah Arshad, Norazam Mastuki, Syaripah Ruzaini Syed Aris, Norjansalika Janom

SECURITY

Enhanced TSFS Algorithm for Secure Database Encryption 328
Authors: Hanan A. Al-Souly, Abeer S. Al-Sheddi, Heba A. Kurdi
Parliamentary Oversight of Cyber Security and Critical Information Infrastructures in Developing Countries 335
Authors: Prof SH (Basie) von Solms
Home User Security- from Thick Security-oriented Home Users to Thin Security- oriented Home Users 340
Authors: EKritzinger, SH (Basie) von Solms
A Complete Binary Tree Structure Block Cipher for real-time multimedia 346
Authors: N. Radha Aathithan, Venkatesulu. M
Informed Symmetric Encryption Algorithm for DICOM Medical Image based on N-grams 353
Authors: Lamri Laouamer, Muath Al Shaikh, Laurent T. Nana, Anca C. Pascu
A Blue Print Practical Implementation of PKI using Open PGP at University of Tabuk 358
Authors: Mohannad Najjar
Toward Assessing the Impact of Mobile Security Issues in Pedagogical Delivery: A Mobile Learning Case Study 363
Authors: Aaron Bere
Formal Specification of CA-UCON model using CCA 369
Authors: Abdulgader Almutairi, François Siewe
Autonomous Synergy with Biometric Security and Liveness Detection 376
Authors: Peter Matthew
Universal Representation of Service Performing Environment in SOA Systems 383
Authors: Dariusz Mikulowski, Grzegorz Terlikowski
Measuring of Reliability of Network Anomalies Detection Using Methods of Discrete Wavelet Analysis 393
Authors: Oleg I. Sheluhin, Aleksandr V. Pankrushin
Time variant approach towards Symmetric Key 398
Authors: Shaligram Prajapat, D. Rajput, Dr. Ramjeevan Singh Thakur
A Combined Approach to Prevent SQL Injection Attacks 406
Authors: Evans Dogbe, Richard Millham, Prenitha Singh

MACHINE VISION

A new segmentation architecture for texture matching using the LBP method 411
Authors : Izem Hamouchene, Saliha Aouat, Hadjer Lacheheb

Solving the perspective Shape From Shading problem Using a new integration method 416
Authors: Lyes Abada, Saliha Aouat

Mobile Augmented Reality Applications to Discover New Environments 423
Authors: Nehla Ghouaiel, Jean-Marc Cieutat, Jean-Pierre Jessel

An exploratory study of detecting emotion states using eye-tracking technology 428
Authors: Majdah Alshehri, Sharifa Alghowinem

Fingerprint Matching by Neighbourhood Characteristics 434
Authors: Iwasokun Gabriel Babatunde, Akinyokun Oluwole Charles, Angaye Cleopas Officer

An Improved System for Detecting Natural Gas Leaks 443
Authors: Cicero F F Costa Filho, Roberlanio de O. Melo, Marly Guimarães Fernandes Costa

FPGA Implementation for Stereo Matching Algorithm 448
Authors: Nadia Baha, Hakim Touzene, Slimane Larabi

Coloring of Grayscale Images using Prioritized Source Propagation Method 455
Authors: Ambika Kalia

Zernike Moment Feature Extraction for Handwritten Devanagari Compound Character Recognition 459
Authors: Karbhari V. Kale, Prapti D. Deshmukh, Shriniwas V. Chavan, Majharoddin M. Kazi, Yogesh S. Rode

INTELLIGENT SYSTEMS

Hemispheric Brainwave Activity of Violinists Performing with Music Notation and without Music Notation 467
Authors: Valerie Ross, Zaini Mohd-Zain, Zunairah Haji Murat, Norlida Buniyamin, Sahrim Lias

Polarized Score Distributions in Music Ratings and the Emergence of Popular Artists 472
Authors: Tianqi Cai, H. J. Cai, Yuanyuan Zhang, Ke Huang, Zhengquan Xu

Utilisation of On-line Machine Learning for SCADA System Alarms Forecasting 477
Authors: Tomas Skripcak, Pavol Tanuska

A Novel Conformance Testing Technique For Agent Interaction Protocols 485
Authors: Farid Mokhati, Mourad Badri, Salim Zerrougui

Incremental Support Vector Machines for Monitoring Systems in Intensive Care Unit 496
Authors: Fahmi Ben Rejab, Kaouther Nouira, Abdelwahed Trabelsi

Introducing Adaptive Artificial Bee Colony Algorithm and Using It in Solving Traveling Salesman Problem 502
Authors: Amr Rekaby, A. A.Youssif, A. Sharaf Eldin

A Fuzzy Logic Based Approach to Bandwidth Allocation in Network Virtualization 507
Authors: Julija Asmuss, Gunars Lauks

Adaptive Geometric Angle-based Algorithm with IndependentObjective Biasing for Pruning Pareto-Optimal Solutions 514
Authors: Sufian Sudeng, Naruemon Wattanapongsakorn

Recognition of Normal Forms with Tree Automata for Inductive Theorem Proving 524
Authors: Haruhiko Sato, Masahito Kurihara

Fuzzy Data Management on Pores Arrangementfor Tropical Wood Species Recognition System 529
Authors: Rubiyah Yusof, Marzuki Khalid, Anis Salwa Mohd Khairuddin

Application of Neuromorphic Visual Processing in Pedestrian Detection Technology 536
Authors: Il Song Han, Woo-Sup Han

Finding Relevant Dimensions in Application Service Management Control: a Features Selection Approach 542
Authors: Tomasz D. Sikora, George D. Magoulas

Challenges in Baseline Detection of Cursive Script Languages 551
Authors: Saeeda Naz, Khizar Hayat, Muhammad Imran Razzak, Muhammad Waqas Anwar, Habib Akbar

Concept of Fuzzy Planar Graphs 557
Authors: Anita Pal, Sovan Samanta, Madhumangal Pal
Use of Sampling and Ant Colony Optimization for predicting support in Recommender System 564
Authors: Preeti Paranjape-Voditel, Abhijeet Thakare
Fuzzy k-Competition Graphs 572
Authors: Madhumangal Pal, Sovan Samanta, Anita Pal
Towards an Organizational Model for Real Time Multi-Agent System Specification 577
Authors: Mohamed Amin Laouadi, Farid Mokhati, Hassina Seridi-Bouchelaghem
An Efficient Classification Using Support Vector Machines 585
Authors: Ning Ruan, Yi Chen, David Yang Gao
Pathology of Knowledge Managementin Universities 590
Authors: Abbas Toloie-Eshlaghy, Alireza Poorebrahimi, Ebrahim Nazari Farokhi
Comparative study on Different Adaptation Approaches Concerning a Sip and Puff Controller for a Powered Wheelchair 597
Authors: Imad Mougharbel, Racha El-Hajj, Houda Ghamlouch, Eric Monacelli
Alternate Biological Sequence Clustering Using Symbol Table 604
Authors: Barile´e Baridam
An Analytical Study of Clustered File Space Properties 609
Authors: Issam A. R. Moghrabi
Spinup-Capture Dynamics of Multi-Rotor Nanosatellites and Somersaulting Robots 613
Authors: Anton V. Doroshin
Intelligent Provisioning using Ontology for Ubiquitous Computing 618
Authors: Hana Do, Changbok Jang, Hoon Jeong, Euiin Choi
A Novel Feature Selection based on information gain using WordNet 625
Authors: Mrs. Leena. H. Patil, Dr. Mohammed Atique
State Based Testing Using Swarm Intelligence 630
Authors: Fozia Mehboob, Atif Aftab Ahmed Jilani, Dr M. Abbass
Implementing Just-In-Time (J.I.T) methodologies within a Libyan cement factory 636
Authors: Elbahlul M. Abogrean
Development of a Network-based Intrusion Prevention System using a Data Mining Approach 641
Authors: Prof. Dr. Alaa Hussein Al-Hamami, Dr. Ghossoon M. Waleed Al-Saadoon

ELECTRONICS

An Efficient Service Discovery Protocol for 6LoWPANs 645
Authors: Badis Djamaa, Rob Witty
A tool to reduce the undercut/over-etch error in a Switched Capacitor filter: Design, Implementation and Verification 653
Authors: Kaushal J. Doshi
Developing of an Industrial Manufacturing Process Plan, Mathematical Modeling of Process Plan and Its Convex Constraint Analysis 659
Authors: Umer Asgher, Dr. Riaz Ahmad
Analytical Characterization of Cut-Wire and Thin-Wire Structures for Metamaterial Applications 665
Authors: Subal Kar, Tapashree Roy, Promit Gangooly, Souvik Pal
Metamaterial Plane-Slab Focusing and Sub-wavelength Imaging--The Concept, Analysis and Characterization 670
Authors: Madhuja Ghosh, Subal Kar
Simulation based characterization of negative permeability plasmonic structures at X band 675
Authors: Amitesh Kumar, Arijit Majumder, Shantanu Das, SubalKar
Adaptive waveform design for target classification 680
Authors: Lulu Wang, Hongqiang Wang, Yuliang Qin, Yongqiang Cheng, Paul V. Brennan
Programmable Ion Counter 685
Authors: V.N. Patil, Dr. N.D. Shimpi, Dr. B.P. Patil, Piyusha S. Bembalkar
Managing the Challenges of E-Waste Recycling in Nigeria 689
Authors: Egwali Annie O., Imouokhome F. A.

E-LEARNING

Virtual and Augmented Reality Based Assembly Design System for Personalized Learning 696
Authors: Husam A. Adas, Sachin Shetty, S. Keith Hargrove
Development of Learning Object from IP-Based Television Programme 703
Authors: Sanaz Fallahkhair
The Shift towards an Innovation-based Model of Learning 708
Authors: Ming Hui Shoon
Mining Fuzzy Motivation Indicator in Learning environment through Human Computer Interaction 712
Authors: Asmaa DAROUICH, Faddoul KHOUKHI, Khadija DOUZI
Selection of Touch Gestures for Children's Applications 721
Authors: Nor Azah Abdul Aziz, Firat Batmaz, Roger Stone, Paul Wai Hing Chung
Use of Semantic Wiki as a Capturing Tool for Lessons Learned in Project Management 727
Authors: Saleh Mesbah Elkaffas, Ahmed Sabry Wagih
Extending the TAM model to empirically investigate the students' behavioural intention to use e-learning in developing Countries 732
Authors: Ali Tarhini, Kate Hone, Xiaohui Liu
A Set of Interactions to Help Resolve 3D Geometry Problems 738
Authors: BERTOLO David, VIVIAN Robin, DINET Jérôme
Electronic Lecturing and Teaching Aid using Collaborative Smart Phones 744
Authors: Daniel Orford, Genovefa Kefalidou
Mode of Information Processing 751
Authors: Egwali Annie O., Imouokhome F. A.

E-BUSINESS

A Framework for Generating a Domain Specific Inspection Evaluation Method: A Comparative Study on Social Networking Websites 757
Authors: Roobaea S. AlRoobaea, Ali H. Al-Badi, Pam J. Mayhew
Micro Sourcing: The SWOT Analysis on The Demand, Supply and Platforms 768
Authors: Noor Habibah Arshad, Siti Salwa Salleh, Syaripah Ruzaini Syed Aris, Norjansalika Janom, Norazam Mastuki
GA Enabled Ontology for Platform Free Dynamic Semantic Web 774
Authors: Dr. P Marikkannu, Prasad P
Improved Technology Acceptance Model Applied to Study Enterprise Resource Planning Usage 782
Authors: Mudaly S., Singh P., Olugbara O.O.
How User Experience is Understood? 791
Authors: Helena Tokkonen, Pertti Saariluoma

COMMUNICATION

A Secure MAC Protocol for Cognitive Radio Networks (SMCRN) 796
Authors: Wajdi Alhakami, Ali Mansour, Ghazanfar A. Safdar, Salah Albermany
System Performance of Radio on Visible Light (RoVL) Communication System 804
Authors: Arnesh Vijay, Professor Roger. J. Green
Dynamic Adjustment of Weighting and Safety Factors in Playout Buffers for Enhancing VoIP Quality 810
Authors: Tazeen S. Syed, Gregory Epiphaniou, Ghazanfar A. Safdar
The World as an Integral Distributed Brain under Spatial Grasp Paradigm 816
Authors: Peter S. Sapaty
Improving multiple broadcasting of multimedia data traffic in wireless ad-hoc networks 822
Authors: Christos Chousidis, Rajagopal Nilavalan
Predicting mobile network bandwidth fluctuation to enhance video stream service quality 829
Authors: Amanda Peart, Andrew Lockett, Mo Adda
Modelling of Intrinsic Conducting Polymer for Wi-Fi Electromagnetic Interference Shielding 836
Authors: Whamid Al-Shabib, Dr. Stefan W. Lachowicz

Performance Analysis of Uplink Fractional Frequency Reuse using Worst Case Signal to Interference Ratio 839
Authors: Sherief Hashima, Hossam Shalaby, Said Elnoubi, Masoud Alghoniemy, Osamu Muta, Hiroshi Furukawa
Tracking Anomalies in Vehicle Movements using Mobile GIS 845
Authors: M. Saravanan, S. Aishwarya, L. N. Aravindan
Radiation Tests on a Bluetooth Based Front-End Electronic Device Towards a Subcutaneous Continuous Glucose Monitoring Sensor. 853
Authors: Sérgio Silva, Salviano Soares, António Valente, António Moreira
Data Collection in WSNs with a Mobile Sink for a supervision application 856
Authors: Yasmine DERDOUR, Bouabdellah Kechar, Fayçal Khelfi
A New Theory for Celestial Orbits 864
Authors: Necat Taşdelen
Performance Analysis of Ad-hoc Routing Protocols In Smart Metering Infrastructure 871
Authors: Hasan Farooq, Low Tang Jung
The Low Noise Amplifier Isolation and Linearity Measurement at Double Antenna LEO Satellite Ground Station 875
Authors: Shkelzen Cakaj

CLOUD COMPUTING

A case study analysis of risk, trust and control in cloud computing 879
Authors: Amir khosravani, Brian Nicholson, Trevor Wood-Harper
Using OpenStack To Improve Student Experience in an H.E. Environment 888
Authors: Stephen Bonner, Carl Pulley, Ibad Kureshi, Violeta Holmes, John Brennan, Yvonne James
Goal-Driven Social Business Process Management 894
Authors: Mohammad Ehson Rangiha, Bill Karakostas
The Standardisation of Cloud Computing:Trends in the State-of-the-Art and Management Issues for the Next Generation of Cloud 902
Authors: C. Peoples, G. Parr, A. Oredope, K. Moessner
Cloud Based Emails Boundaries and Vulnerabilities 912
Authors: Taiwo Ayodele, Dennis Adeegbe
A Generic Search Based Cloud Service Discovery Mechanism 915
Authors: V Sashi Kanth Nagireddi, Shakti Mishra
Mobile Cloud Framework Architecture for Education Institutions 924
Authors: Paduri Veerabhadram, Pieter Conradie
Deploying Cloud Services in Mobile Networks 928
Authors: A. Oredope and K. Moessner, C. Peoples, G. Parr
Effective Technique for Allocating Servers to Support Cloud using GPS and GIS 934
Authors: Ayad Ghany Ismaeel
Self-Management for Cloud Computing 940
Authors: Mariachiara Puviani, Regina Frei
An Integrated Framework for Evaluating Big-Data Storage Solutions – IDA Case Study 947
Authors: Ahmad B. Alnafoosi, Theresa Steinbach
Architecting Mobile Cloud Computing Applications by RM-ODP 957
Authors: Mostafa Jebbar, Abderrahim Sekkaki, Othman Benammar

Section 3: Poster Presentations

An Efficient Collaborative Infrastructure for Wide Area Surveillance Network 967
Authors: Soomi Yang
CMS Options For Creating Electronic Textbooks For Agronomical Subjects 969
Authors: Elena Nikolova Nikolova, Svetlana Zhelyazkova Vasileva, Ilko Tsonev Iliev

Collaborative experience teacher-students at the University of Alicante 974
Authors: Javier Ortiz, Irene Sentana
Diversity-enhanced particle swarm optimizer and its application to optimal flow control of sewer networks 977
Authors: Hyunwook Beak, Tae-Hyoung Kim, Jaena Ryu, Jeill Oh

Section 4: Project Demonstrations

Context Processing for Automotive Human-Machine Interfaces 979
Authors: Ljubo Mercep, Alois Knoll, Gernot Spiegelberg