Contents

Section 1 : Keynotes, Invited Talks and Tutorials

KEYNOTE SPEAKERS

Thomas Sterling - The Paradigm Shift beyond Exascale Computing 39
Indiana University

Fahim Kawsar - Network Intelligence Driven Behavior Modeling for a Connected World 40
Director, Internet of Things Research, Bell Laboratories, Alcatel-Lucent

Karlheinz Meier - Neuromorphic Computing in the Human Brain Project 41
Heidelberg University

Muriel Médard - Stormy Clouds - security in distributed cloud systems 42
MIT - Massachusetts Institute of Technology

Geyong Min - Analytical Modelling and Quality-of-Service in Wireless Multimedia Networks 43
University of Exeter

KNOWLEDGE TALKS

Paul Galwas - Smart City opportunity: privacy-preserving citizen mobility services 44
Security Architect, Digital Catapult

Bob Crooks - Green ICT matters 45
Department for the Environment Food and Rural Affairs (Defra), UK Government & British Computer Society

Andrea Feltrin - Funding disruptive technologies for European competitiveness and growth 46
European Commission - Future and Emerging Technologies (FET)

Peter Stollenmayer - EUREKA and Celtic-Plus - Opportunities for Collaboration in R&D 47
Celtic Office Strategy Director of the Celtic-Plus, EUREKA

Peter Whale - The Future of Wireless will be nothing like the past 48
Board member, Cambridge Wireless & Director of Product Marketing, Iotic-Labs

TUTORIAL

Kohei Arai - Rescue system with vital sign monitoring of sensor network 49
Saga University, Japan

INDUSTRIAL TALK

Theo Priestley - The Future of Work: How 100 children see technology improve their Working Life 50
Technology Speaker

Section 2 : Paper Presentations

TECHNOLOGY TRENDS

Does Virtual-Reality Training on Orthopaedic Simulators Improve Performance in the Operating Room? *Authors: Neil Vaughan, Venketesh N. Dubey, Thomas W. Wainwright, Robert G. Middleton*	51-54
PBStoHTCondor System for Campus Grids *Authors: Violeta Holmes, John Brennan, Ibad Kureshi, Stephen Bonner*	55-61
Computing with Virtual Cellular Automata Collider *Authors: Genaro J. Martinez, Andrew Adamatzky, Harold V. McIntosh*	62-68
Personalizing Learning Materials for Students with Multiple Disabilities in Virtual Learning Environments *Authors: Julius T. Nganji, Mike Brayshaw*	69-76
Let's Vote to Classify Authentic and Manipulative Online Reviews: The Role of Comprehensibility, Informativeness and Writing Style *Authors: Snehasish Banerjee, Alton Y. K. Chua, Jung-Jae Kim*	77-83
Code Generation and Parallel Code Execution from Business UML Models: A Case Study for an Algorithmic Trading System *Authors: Gaetan Hains, Chong Li, Daniel Atkinson, Jarrod Redly, Nicholas Wilkinson, Youry Khmelevsky*	84-93
A Multicriteria Analysis Approach for Benchmarking Smart Transport Cities *Authors: Santoso Wibowo, Srimannarayana Grandhi*	94-101
Swapping Algorithm and Meta-heuristic Solutions for Combinatorial Optimization n-Queens Problem *Authors: Neil Vaughan*	102-104
Can Virtual-Reality Simulators Assess Experience and Skill Level of Orthopaedic Surgeons? *Authors: Neil Vaughan, Venketesh N. Dubey, Thomas W. Wainwright, Robert G. Middleton*	105-108
Sociomaterial Configurations of Human and Non-Human Actors: Re-Inventing Family Trip Planning Through Imbrication of Services *Authors: George Ktistakis, Demosthenes Akoumianakis, Nik Bessis*	109-118
Information - Returning Power to the Masses *Authors: Christian Bernardt*	119-123
"Railway as a Thing" New Railway Control System in Egypt using IoT *Authors: Osama Oransa, Mostafa Abdel-Azim*	124-133
Analyzing Traffic Problem Model with Graph Theory Algorithms *Authors: Yong Tan*	134-140
Object Event Visibility for Anti-Counterfeiting in RFID-Enabled Product Supply Chains *Authors: Xiaoming Yao, Xiaoyi Zhou, Jixin Ma*	141-150

Users' Performance in Lab and Non-Lab Enviornmnets through Online Usability Testing *Authors: Abeer Alharbi, Pam Mayhew*	151-161
Software as a Service: Understanding Security Issues *Authors: Pushpinder Kaur Chouhan, Feng Yao, Sakir Sezer*	162-170
Consumer Centric Dynamic Business Process Customization of Web Service using Ontology *Authors: PRASAD R, LOKESH KUMAR K, SUNDAR PAUL S, SURYA PRABHA U S*	171-174
Virtual Currency Concept its implementation, impacts and legislation *Authors: Saleh Alghamdi, Natalia Beloff*	175-183
Paranasal Sinusitis Detection using Thermal Imaging *Authors: Ajat Shatru Arora, Jaspreet Singh*	184-188
"Software Requirement Engineering", A New Leave Towards the Silver Bullet *Authors: Hafiza Tehmina Kanwal, Fahim Arif, Ather Mohsin Zaidi*	189-198
Predictive Capacity of Meteorological Data - Will it rain tomorrow? *Authors: Bilal Ahmed*	199-205
Usability Concerns of Android Casual Game Applications:Analysis and Improvements *Authors: Jawaria Sarwar Khan, Fahim Arif, Athar Mohsin*	206-216
Framework for Integrating Outcome-Based Assessment in Online Assessment *Authors: Abdulsalam K. Alhazmi, Hasnain Zafar, Fatima Al-Hammadi*	217-221
Metaheuristic Algorithms for Feature Selection in Sentiment Analysis *Authors: Siti Rohaidah Ahmad, Azuraliza Abu Bakar, Mohd Ridzwan Yaakub*	222-226
Minecraft Computer Game Performance Analysis and Network Traffic Emulation by a Custom Bot *Authors: Trevor Alstad, J. Riley Duncan, Simon Detlor, Brad French, Heath Caswell, Zane Ouimet, Gaetan Hains, Rob Bartlett, Alex Needham, Youry Khmelevsky*	227-236
To Notify or Not to Notify: That is the Question *Authors: Irina Astrova, Carsten Kleiner, Arne Koschel, Stefan Nitz*	237-246
DroidSearch: A Tool for Scaling Android App Triage to Real-World App Stores *Authors: Siegfried Rasthofer, Steven Arzt, Max Kohlhagen, Brian Pfretzschner, Stephan Huber, Eric Bodden, Philipp Richter*	247-256
Social Commerce: A Literature Review *Authors: Luca Salvatori, Fausto Marcantoni*	257-262
Personalizing Your Social Computing World: A Case Study Using Twitter *Authors: Natasha Mounota, Mike Brayshaw*	263-268

Achieving Internet of Things Security via Providing Topological Sustainability *Authors: Dmitry Zegzhda, Tatiana Stepanova*	269-276
Successful or Unsuccessful Open Source Software Projects: What is the key? *Authors: Xiaohong Chen, David Probert, Yuan Zhou, Jun Su*	277-282
Application System Design of Competence Model for Large Enterprise *Authors: Weibao Chang*	283-287
Sentiment Analysis Techniques in Recent Works *Authors: Zohreh Madhoushi, Abdul Razak Hamdan, Suhaila Zainudin*	288-291
Automatic Detection of Malignant Neoplasm from Mammograms *Authors: Asim Ali Khan, Mister Khan, Ajat Shatru Arora*	292-297
Virtual Slides and Instant Sharing of Medical Diagnosis: Emerging Telepathology Practices at King Fahd Hospital *Authors: Farzana Shafique, Dalal Al-Tamimi, Haitham Kussaibi*	298-304
Where is Information Society, it is Lost in the Knowledge Society: Survival Issues for Developing Countries in the Knowledge Society and Need of Knowledge Management Initiatives in the Education Sector *Authors: Farzana Shafique*	305-310
An Antiferromagnetic Spin-1 Chain as an Element of an Information Storage in Quantum Computer *Authors: Elena V. Orlenko, Fedor E. Orlenko*	311-314
Time-Dependent Exchange Perturbation Theory *Authors: Elena V. Orlenko, Fedor E. Orlenko*	315-320
Design of a Business Architecture in a Medium Metal Mechanic Firm *Authors: Alicia Valdez, Griselda Cortes, Orlando Arzola, Sergio Castaneda, Alejandro Luna*	321-325
Lexical Normalisation of Twitter Data *Authors: Bilal Ahmed*	326-328

INTELLIGENT SYSTEMS

Scoring of Alternative Routes Using Implicit Building Topologies *Authors: Sebastian Feld*	329-336
A Fast Noise Resilient Anomaly Detection using GMM-Based Collective Labelling *Authors: Elnaz Bigdeli, Mahdi Mohammadi, Bijan Raahemi, Stan Matwin*	337-344
Identity maps and their extensions on parameter spaces: Applications to anomaly detection in video *Authors: Kun Wang, Josh Thompson, Chris Peterson, Michael Kirby*	345-351
Extracting Sentiment from Healthcare Survey Data: An Evaluation of Sentiment Analysis Tools *Authors: Despo Georgiou, Andrew MacFarlane, Tony Russell-Rose*	352-361
Artificial Neural Networks in Diabetes Control *Authors: Filipe Fernandes, Henrique Vicente, António Abelha, José Machado, Paulo Novais, José Neves*	362-370
Twitter Mining for Traffic Events Detection *Authors: Carlos Gutiérrez, Paulo Figuerias, Pedro Oliveira, Ruben Costa, Ricardo Jardim-Goncalves*	371-378
Affective Analysis of Musical Chords *Authors: Madhur Kukreti*	379-385
A Framework for Clustering Dental Patients' Records Using Unsupervised Learning Techniques *Authors: Syed Mohtashim Abbas Bokhari, Iqra Basharat, Shoab Ahmad Khan, Ali Waqar Qureshi, Bilal Ahmed*	386-394
Fuzzy Assessment Model for Operative Groups in Virtual Educational Forums *Authors: Ilan Chamovitz, Marcos da Fonseca Elia, Carlos Alberto Nunes Cosenza*	395-405
Healthcare Navigation System *Authors: PINAR KIRCI, Uğur ALAN, Vahap BIYIK, Zeynel A. SAMAK*	406-409
Mobile Technology in Children Education: Analyzing Parents' Attitude Towards Mobile Technology for Children *Authors: Rabail Tahir, Fahim Arif*	410-420
Options of the Extended Editor of GPSS World for Creating Demonstration Models in Operating Systems *Authors: Svetlana Vasileva, Alina Culciar*	421-425
Decision Support for Occupational Risk Overcome in Maintenance Activities *Authors: Maryam GALLAB, Hafida BOULOIZ, Mohamed TKIOUAT*	426-434
High-Frequency Trading Strategies using Wavelet-transformed Order Book Information and Dynamic Bayesian Networks *Authors: Javier Sandoval, German Hernandez*	435-442

Toward a Knowledge-Based Model for Real-Time Business Intelligence *Authors: Lulwah AlSuwaidan, Nesrien Zemirli*	443-446
Multi Ant LA: An Adaptive Multi Agent Resource Discovery for Peer to Peer Grid Systems *Authors: Moses Olaifa, Temitope Mapayi, Ronell Van Der Merwe*	447-451
An Integrated Framework of Business Intelligence and Analytic with Performance Management System: A Conceptual Framework *Authors: Nur Hani Zulkifli Abai, Jamaiah H. Yahaya, Aziz Deraman*	452-456
Exploiting Faculty Evaluation Forms to Improve Teaching Quality: An Analytical Review *Authors: Thuy -Van T.Duong, Thuc-Doan Do, Ngoc-Phien Nguyen*	457-462
Dynamic Fuzzy System Design for Modeling and Control of Nonlinear Dynamical Processes *Authors: Sevcan Yilmaz, Yusuf Oysal*	463-467
Automatic Grapheme-to-Phoneme Conversion of Arabic Text *Authors: Belal Al-Daradkah, Bashir Al-Diri*	468-473
A Machine-Learning Based Approach To Model User Occupancy And Activity Patterns For Energy Saving In Buildings *Authors: José Luis Gómez Ortega, Liangxiu Han, Nicholas Bowring, Nick Whittaker*	474-482
Detection of Current Research Directions Based on Full-Text Clustering *Authors: Alexander Shvets, Dmitry Devyatkin, Ilya Sochenkov, Ilya Tikhomirov, Konstantin Popov, Konstantin Yarygin*	483-488
Selection of Fitness Function in Genetic Programming for Binary Classification *Authors: Muhammad Waqar Aslam*	489-493
Identifying Best Feature Subset for Cardiac Arrhythmia Classification *Authors: Khalid Ahmed Khan Niazi, Shoab Ahmed Khan, Arslan Shaukat, Mahmood Akhtar*	494-499
A Simulation-based Optimization Approach for Healthcare Facility Location Allocation Decision *Authors: Sahar K. ElKady, Hisham M. Abdelsalam*	500-505
Time Frame Optimization using PSO to Guarantee QoS in IEEE 802.16 Networks *Authors: Eden Ricardo Dosciatti, Augusto Foronda*	506-513
Control of Single Axis Magnetic Levitation System Using Fuzzy Logic Control *Authors: Abdollha Benomair, Mohamed Tokhi*	514-518
Investigating the Effects of Conveyor Speed and Product Orientation on the Performance of Wireless RFID System in Production Line Using Factorial Design *Authors: Samihah Abdullah, Widad Ismail, Zaini Abdul Halim, Zalina Abdul Aziz, Vimal Priyashman, Mastika Yaacob*	519-524
User Interface to Automate the Collection and Processing of Data for Discrete Event Simulation Projects *Authors: Carlos Rodriguez*	525-532

A Modified Simple Logistic Chaotic Map Through Exponential Controller in Nonlinear Term *Authors: Jeerana Noymanee, Wimol San-Um*	533-537
Decoding, Hacking, and Optimizing Societies: Exploring Potential Applications of Human Data Analytics in Sociological Engineering, both Internally and as Offensive Weapons *Authors: Gregory Maus*	538-547
Toward an Optimal Use of Artificial Intelligence Techniques within a Clinical Decision Support System *Authors: Ahmed J. Aljaaf, Dhiya Al-Jumeily, Abir J. Hussain, Paul Fergus, Mohammed Al-Jumaily, Khaled Abdel-Aziz*	548-554
Contrast Enhancement Algorithm for Colour Images *Authors: John Adedapo Ojo, Ifeoluwa Solomon, Solomon Adeniran*	555-559
Measuring InfoVis' Decision Support Effectiveness: From Theory to Practice *Authors: Semiu A. Akanmu, Zulikha Jamaludin*	560-564
Incorporating Semantics in Pattern-Based Scientific Workflow Recommender Systems *Authors: Kamran Soomro, Kamran Munir, Richard McClatchey*	565-571
Pattern Discovery Algorithm for Weather Prediction Problem *Authors: Almahdi Alshareef, Azuraliza Abu Bakar, Abdul Razak Hamdan, Sharifah Mastura Syed Abdullah, Othman Jaafar*	572-577
A New Perspective on Recommender Systems: a Class Path Information Model *Authors: Roberto Saia, Ludovico Boratto, Salvatore Carta*	578-585
Mining Survey Data on University Students to Determine Trends in the Selection of Majors *Authors: Almahdi Alshareef, Salem Ahmida, Azuraliza Abu Bakar, Abdul Razak Hamdan, Mohammed Alweshah*	586-590
Neuro-fuzzy Classification of Transcranial Doppler Signals with Chaotic Meaures and Spectral Parameters *Authors: Ali Ozturk, Ahmet Arslan*	591-596
Ontology Based Clinical Decision Support System for Diabetes Diagnostic *Authors: Reham Faisal Alharbi, Jawad Berri, Samir El-Masri*	597-602
Theory of Diffusion of Innovation for Analysis in Information Systems Studies *Authors: Phathutshedzo Nemutanzhela, Tiko Iyamu*	603-608
A Survey on How to Cross-Reference Web Information Sources *Authors: Joe Raad, Aurelie Bertaux, Christophe Cruz*	609-618
An Optimal Defuzzification Method for Interval Type-2 Fuzzy Logic Control Scheme *Authors: Ziyad T. Allawi, Turki Y. Abdalla*	619-627

MACHINE VISION

Robust Feature Matching in the Wild *Authors: Craig Henderson, Ebroul Izquierdo*	628-637
A Novel Computer Vision-based Approach to Automatic Detection and Severity Assessment of Crop Diseases *Authors: Liangxiu Han, Muhammad Salman Haleem, Moray Taylor*	638-644
A Measurement Method for the Mismatch Between the Image Target and Salient Points as a Metric for Image Complexity *Authors: Juan Huo*	645-649
Modelling of Pressure Ulcer (PU) Risk Prediction System *Authors: Mahbub C Mishu, Jan Walter Schroeder*	650-656
Inducing Targeted Brain States Utilizing Merged Reality Systems *Authors: Ralph Moseley*	657-663
A Quantum-Based Image Fidelity Metric *Authors: Abdullah M. Iliyasu, Fei Yan, Khaled A. Abuhasel*	664-671
Towards Real-Time Obstacle Detection Using Stereo Images *Authors: Nadia Baha, Mouslim Tolba*	672-679
Recognition of Fish Based on Generalized Color Fourier Descriptor *Authors: Wong Poh Lee, Mohd Azam Osman, Abdullah Zawawi Talib, Khairun Yahya, Jean-Christophe Burie, Jean-Marc Ogier, José Mennesson*	680-686
Quantifying Retinal Blood Vessels' Tortuosity –Review *Authors: Mowda Abdalla, Bashir Al-Diri, Andrew Hunter*	687-693
Improved Occlusion Handling for Human Detection from Mobile Robot *Authors: H.S. Hadi, M. Rosbi, U.U. Sheikh, S.H.M. Amin*	694-698
Massively Parallel Ray Tracing Algorithm Using GPU *Authors: Yutong Qin, Jianbiao Lin, Xiang Huang*	699-703
A Generalized Segmentation Approach for Texture Analysis and Matching *Authors: Elkhalil Betrouni, Samy Melaine, Saliha Aouat*	704-708
Retinal Vascular Geometry: Examination of the Changes between the Early Stages of Diabetes and First Year of Diabetic Retinopathy *Authors: Georgios Leontidis, Bashir Al-Diri, Andrew Hunter*	709-713
Biologically Inspired Vine-Like and Tendril-Like Robots *Authors: Ian D. Walker*	714-720

Neuromorphic Visual Object Detection for Enhanced Driving Safety *Authors: W. S. Han, I. S. Han*	721-726
Signature Automation of UMLS Concepts: An Un-Supervised Named Entity Recognition Framework for Classification of DNA and RNA in Biological Text *Authors: Muhammad Ashraf Khan Niazi, Abdul Wahab Muzaffar, Muhammad Latif, Usman Qamar*	727-733
Development of Moving Target Detection Based on Image Processing Techniques *Authors: Md Saiful Islam, Jung-Chul Lee, Kabju Hwang, Uipil Chong*	734-738
An Investigation into Physiological Responses in Driving Simulators: An Objective Measurement of Presence *Authors: Christophe Deniaud, Vincent Honnet, Benoit Jeanne, Daniel Mestre*	739-748
Comparative Methods of Spike Detection in Epilepsy *Authors: Ousmane Khouma, Mamadou Lamine Ndiaye, Sidi Mohamed Farsi, Jean-jacques Montois, Idy Diop, Birahime Diouf*	749-755
Can Immersive Type of Virtual Reality Bring EMG Pattern Changes Post Facial Palsy? *Authors: Uvais Qidwai, M. S. Ajimsha*	756-760
Natural Disaster Detection Using Wavelet and Artificial Neural Network *Authors: Albertus Joko Santoso, Findra Kartika Sari Dewi, Thomas Adi Purnomo Sidhi*	761-764

E-LEARNING

The Effects of Teaching Primary School Children the Islamic Prayer in a Virtual Environment *Authors: Mohammed Farsi, Malcolm Munro, Ahmed Al-Thobaiti*	765-769
Reflexive Games in e-University *Authors: Andrew Schumann*	770-775
Dyslexia Adaptive e-Learning System Based on Multi-Layer Architecture *Authors: Aisha Alsobhi, Nawaz Khan, Harjinder Rahanu*	776-780
Flexible and Extended IWS (Item Writing System) as a Part of INT-Test Design Software *Authors: Volkova E.V., Nilopets M. N.*	781-785
An Evaluation Framework for Mobile Health Education Software *Authors: Tareq Aljaber, Neil Gordon, Chandrasekhar Kambhampati, Mike Brayshaw*	786-790
The Effects of Video Lecture Delivery Formats on Student Engagement *Authors: Marco Gilardi, Patrick Holroyd, Paul Newbury, Phil Watten*	791-796
Enhancing Student's Learning Experience at Middle East College by using Blended Learning *Authors: Raza Hasan, Syed Imran Ali, M. Sohail Hayat*	797-800
Enhancement of Interactivity using a New Lecturing System(IELS) *Authors: Ahmed Althobaiti, Malcolm Munro*	801-806

CLOUD COMPUTING

Re-Appraising Instance Seeking in Public Clouds *Authors: John O'Loughlin, Lee Gillam*	807-815
Performance and Price analysis for Cloud Service Providers *Authors: Bassem El Zant, Maurice Gagnaire*	816-822
Semantic Description of Cloud Service Agreements *Authors: Richard Greenwell, Xiaodong Liu, Kevin Chalmers*	823-831
Adaptive Scheduling in the Cloud - SLA for Hadoop Job Scheduling *Authors: Deveeshree Nayak, Venkata Swamy Martha, David Threm, Srini Ramaswamy, Summer Prince, Günter Fahrnberger*	832-837
Protecting Data in Personal Cloud Storage with Security Classifications *Authors: Fara Yahya, Robert J Walters, Gary B Wills*	838-843
A Framework for Providing a Hybrid Fault Tolerance in Cloud Computing *Authors: Mohammed Amoon*	844-849
Reinterpreting the Principles of SOA Through the Cybernetic Concepts of VSM to Design the ESB as iPaaS in the Cloud *Authors: Nizami Jafarov, Edward Lewis*	850-858

SOFTWARE ENGINEERING

Object Oriented Eco-Simulator System as Predictor & Exploratory System to Track Impact of Human Induced Activities on Environmental Resource *Authors: Hooshang Eivazy, Elham Karkhaneh*	859-869
CMMI-DEV Process Areas Modeled on a Process for Critical Embedded Systems Development *Authors: Magda A. Silvério Miyashiro, Maurício G. V. Ferreira, Nilson Sant'Anna*	870-878
Identifying Complex Functions By Investigating Various Aspects of Code Complexity *Authors: Vard Antinyan, Miroslaw Staron, Jesper Derehag, Mattias Runsten, Erik Wikström, Wilhelm Meding, Anders Henriksson, Jörgen Hansson*	879-888
Requirements Elicitation Issues and Project Performance: A Test of a Contingency Model *Authors: Neetu Kumari. S, Anitha. S Pillai*	889-896
The Time Profit Obtained by Parallelization of Quicksort Algorithm Used for Numerical Sorting *Authors: Valma Prifti, Redis Bala, Igli Tafaj, Denis Saatciu, Julian Fejzaj*	897-901
Analyzing Test Case Quality with Mutation Testing Approach *Authors: Zainab Nayyar, Nazish Rafique, Nousheen Hashmi, Nadia Rashid, Saba Awan*	902-905
Optimized Web Design in the Saudi Culture *Authors: Habib Ullah Khan, Amani Alhusseini*	906-915
Model Based Virtual Engineering Approach to Remanufacturing Design *Authors: Olatunde Banjo, Atul Jain, Feng Chen*	916-920
Enhanced HGS Algorithm (EHGSA) for Cost Reduction Regression Testing *Authors: Mohamed Alaa El-Din, Ismail Abd El-Hamid Taha, Hesham El-Deeb*	921-927
Evaluating the Effectiveness of Problem Solving Techniques and Tools in Programming *Authors: Seyyed Meisam Taheri, Minoru Sasaki, Harrison Thuku Ngetha*	928-932
Identifying the Challenges for Managing Component-Based Development in Global Software Development: Preliminary Results *Authors: Sajjad Mahmood, Mahmood Niazi, Akhtar Hussain*	933-938
A Framework for Modelling Population Registration and National Identification System in Uganda *Authors: Ssegawa Andrew Kiggundu, Ezekiel Uzor Okike*	939-945
How Final is Java's final? *Authors: Barilee Baridam*	946-948
Lesson Learned Knowledge in Project Management *Authors: Mehran Sepehri*	949-953

Model-Driven Web Applications *Authors: José Luis Herrero Agustin*	954-964
Ontological Approach to the Formal Specification of the Standard Life Cycle *Authors: Ekaterina Lavrishcheva*	965-972

COMMUNICATIONS

Estimation of the Noise Immunity of Troposphere Communication Systems with OFDM Signals and Available Ways to Increase Ones Bit Error Ratio *Authors: Eugene Rychkov, Victor Patyukov*	973-977
Wavelet Transforms Detection of Spectrum Sensing in the Space Network *Authors: Haiyue Li, Jing Li*	978-984
Improve the Capacity of the OFDMA-based Systems *Authors: Ndiaye Abdourahmane, Ouya Samuel, Mendy Gervais*	985-988
A New Channel Coding Network Coding Scheme for Two-Way Relay *Authors: William Liu*	989-996
A Routing Algorithm Satisfied Ground Station Distribution Constraint for Satellite Constellation Network *Authors: Jing Li, Gang-qiang Ye, Jiang Zhang, Tian-jiao Zhang, Liang-jun Ke*	997-1002
Mobility Prediction Based on Collective Movement Behaviors in Public WLANs *Authors: Thuy -Van T.Duong, Dinh Que Tran*	1003-1010
QoS Framework for Mobile-to-Mobile Multimedia Streaming Applications *Authors: Muzzamil Aziz, Usman Akram, Khaled Rashed, Matthias Jarke*	1011-1017
Enhanced Controller of Mobility for a New Generation of Mobile Laboratory *Authors: Ousmane Sadio, Ibrahima Ngom, Claude Lishou, Hamadou Saliah-Hassane*	1018-1027
Performance Evaluation of OnehopMANET *Authors: Mohammad Al Mojamed, Mario Kolberg*	1028-1032
An Advanced Wireless Medium Access Backoff Algorithm for MANETs *Authors: Y. Neeraja, V.Sumalatha*	1033-1036
Evolving Clustering Algorithms for Wireless Sensor Networks with Various Radiation Patterns to Reduce Energy Consumption *Authors: Alaa F. Sheta, Basma Solaiman*	1037-1045
Density and Mobility Impact on MANET Routing Protocols in a Maritime Environment *Authors: Rabab J. Mohsin, John Wood, Mohammed Q. Shawkat*	1046-1051
Variable-Polarization Optical Feedback Induced High-Quality Polarization-Resolved Chaos Synchronization in VCSEL *Authors: S. Nazhan, Z. Ghassemlooy, K. Busawon, A.Gholami*	1052-1055
Nonlinearity Mitigation of Optical Fast-OFDM Signals Using a Wiener-Hammerstein Electrical Equalizer *Authors: Bechir Nsiri, Sofien Mhatli, Nasreddine Mallouki, Mohammad Ghanbarisabagh, Elias Giacoumidis, Mahmoud Ammar, Ammar Bouallegue, Rabah Attia*	1056-1061

A 100Gbps Data Link Layer with a Frame Segmentation and Hybrid Automatic Repeat Request *Authors: Lukasz Lopacinski, Marcin Brzozowski, Rolf Kraemer*	1062-1069
Evolutionary Algorithms for Cluster Heads Election in Wireless Sensor Networks: Performance Comparison *Authors: Riham S. Elhabyan, Mustapha C.E. Yagoub*	1070-1076
Analysis of Wiener-Hammerstein Equalizer for Downlink LTE System *Authors: Nasreddine Mallouki, Bechir Nsiri, Sofiene Mhatli, Mohammad Ghanbarisabagh, Walid Hakimi, Mahmoud Ammar, Elias Giacoumidis, Rabah Attia*	1077-1082
Voice Over Internet Protocol: A Collaborative Tool to Advance Communication Processes for Elderly People *Authors: Mapundu Zamikhaya, JS Van Der Walt, Thierry Simonnet*	1083-1088
Improving Frequency Band of Ultra Wide Band Antenna with Metamaterial *Authors: Jamal Mohammed Rasool*	1089-1092
Load Balancing Enhancement in WMNs with New Routing Metric *Authors: Naima EL Haoudar, Abdelilah MAACH*	1093-1097
A WDM Transmission Strategy and Node Architecture Suitable for Various Sizes IP Traffic in Ring MANs *Authors: Peristera A. Baziana*	1098-1103

ELECTRONICS

Incorporating FPGA-Based Labs within Digital Design Course–A Middle-Eastern Experience *Authors: Tariq Jamil*	1104-1107
Armchair Graphene Nanoribbon Photonics *Authors: Asif Hassan, Moinul Hossain, Syed A. Sobhan, M.Refatul Haq, Tanvir Ahamed Siddiquee*	1108-1112
Promote the Industry Standard of Smart Home in China by Intelligent Router Technology *Authors: Hui Lin, Ke Ji, Jingjie Wang, Guanghua Zou, Yueqiu He*	1113-1117
An 1 V - 1 nW Source Follower ISFET Readout Circuit For Biomedical Applications *Authors: Surachoke Thanapitak*	1118-1121
A personal medical device for multi-sensor, remote vital signs collection in the elderly *Authors: Robert Munnoch, Ping Jiang*	1122-1131
Pulse Width Modulation (PWM) Method for Power Components Estimation Under Harmonic Distortion Conditions *Authors: Anastasios G. Bakaoukas, Kanakis Triantafyllos*	1132-1139
Energy-Efficient Adaptive MIMO Decoders *Authors: Basel Halak, Mohammed El-Hajjar, Qiongda Hu ,Yue Lu, Qingqiang Li, Yang Qiang*	1140-1143
Return Loss Prediction for Category 8 Cable using Pseudorandom Impedance Generation *Authors: Olusegun Ogundapo, Alistair Duffy, Charles Nche, John Gow*	1144-1148
Assistive Infrared Sensor Based Smart Stick for Blind People *Authors: Ayat A. Nada, Mahmoud A. Fakhr, Ahmed F. Seddik*	1149-1154
FPGA Implementation of Satellite Image Fusion Using Wavelet Substitution Method *Authors: G. Mamatha, M.V. Lakshmaiah, V. Sumalatha*	1155-1159
Implementation of HEVC Intra 4x4 Prediction on FPGA *Authors: Abdellah Skoudarli, Youcef Sekkal, Lamine Djelouat*	1160-1164
Design of Low Power Single Stage CMOS Complementary Regulated Cascode Distributed Amplifier Based on Inuductive Coupling Technique *Authors: Kittipong Tripetch, Nobuhiko Nakano*	1165-1169
A Proposal to Estimate Seismic Risk on Buildings Using WSN *Authors: Laura Margarita Rodríguez Peralta, Eduardo Ismael-Hernández*	1170-1177
Power Balanced Circuits for Leakage-Power-Attacks Resilient Design *Authors: Basel Halak, Julian Murphy, Alex Yakovlev*	1178-1183

Digital Sound Processing using Arduino and MATLAB
Authors: Sérgio Silva, Salviano Soares, António Valente, Sylvain T. Marcelino

1184-1191

SECURITY

Analysis and Combination of Positive Aspects of Threshold RG based VSS schemes *Authors: Saurabh Bora, Aparajita Ojha*	1192-1200
A Novel Approach to Worm Detection Systems *Authors: Yazed B. Al-Saawy, Antonio Cau, Francois Siewe*	1201-1205
Improved N-gram Approach for Cross-site Scripting Detection in Online Social Network *Authors: Rui Wang, Xiaoqi Jia, Qinlei Li, Daojuan Zhang*	1206-1212
A Model for Secure Mobile Computing *Authors: Jaco du Toit, Ian Ellefsen*	1213-1221
An Integrated Approach to Fingerprint Indexing Using Spectral Clustering Based on Minutiae Points *Authors: Ntethelelo A. Mngenge, Linda Mthembu, Fulufhelo V. Nelwamondo, Cynthia H. Ngejane*	1222-1229
Practical Polar Coding Method to Minimize the Embedding Impact in Steganography *Authors: Birahime Diouf, Idy Diop, Sidi Mohamed Farssi, Ousmane Khouma*	1230-1235
Android Malware Detection: An Eigenspace Analysis Approach *Authors: Suleiman Y. Yerima, Sakir Sezer, Igor Muttik*	1236-1242
Enhancing Cyber Safety Awareness among School Children in South Africa through Gaming *Authors: Elmarie Kritzinger*	1243-1248
Efficient Key Management Scheme to Enhance Security-Throughput Trade-off Performance in Wireless Networks *Authors: Michael Ekonde Sone*	1249-1256
Efficiency of Network Event logs as Admissible Digital Evidence *Authors: Aadil Al-Mahrouqi, Sameh Abdalla, Tahar Kechadi*	1257-1265
Long-Term Enhancement of the Operational Security of the Kosovo Power System by Applying the Augmented Deterministic Methodology *Authors: Gazmend Pula, Kadri Kadriu, Gazmend Kabashi, Valon Sadiku*	1266-1271
Security Evaluation of Embedded Hardware Implementation *Authors: Ledina Karter, Linda Ferhati, Igli Tafa, Denis Saatciu, Julian Fejzaj*	1272-1276
Towards Middleware Security Framework for Next Generation Data Centers Connectivity *Authors: Samar Raza Talpur, Sameh Abdalla, Tahar Kechadi*	1277-1283
Preservation of Digital Evidence: Application in Criminal Investigation *Authors: Fernando Molina Granja, Glen D. Rodriguez Rafael*	1284-1292

A Study of Usability-Aware Network Trace Anonymization *Authors: Kato Mivule, Blake Anderson*	1293-1304
A Cost-Effective True Random Bit Generator Using a Pair of Robust Signum-Based Chaotic Maps *Authors: Wimol San-Um, Patinya Ketthong, Winai Chankasame, Jeerana Noymanee*	1305-1310
Touchscreen Patterns Based Authentication Approach for Smart Phones *Authors: Dina ElMenshawy*	1311-1315
A Maturity Model for Part of the African Union Convention on Cyber Security *Authors: SH (Basie) von Solms*	1316-1320
Online Phishing Detection Toolbar for Transactions *Authors: P.A. Barraclough, G. Sexton, N. Aslam*	1321-1328
Safe Haven in the Cloud: Secure Access Controlled File Encryption (SAFE) System *Authors: Farrukh Shahzad*	1329-1334
Foreniscs Analysis of Cloud Computing Services *Authors: Ahmad Ghafarian*	1335-1339
Role of the Institutional Theory for Implementation Information Technology to Enhance Safety Management in Shipping Companies *Authors: Taha Lebbadi*	1340-1351
A New Vision for Intrusion Detection System in Information Systems *Authors: Ouarda Lounis, Bourenane Malika*	1352-1356
A Chaos-Based Keyed Hash Function for Secure Protocol and Messege Authentication in Mobile Ad Hoc Wireless Networks *Authors: Winai Chankasame, Wimol San-Um*	1357-1364
A Secure e-Government's e-Voting System *Authors: Mohammad Hosam Sedky,Essam M. Ramzy Hamed*	1365-1373
Delegation Enabled Provenance-Based Access Control Model *Authors: Noha Nagy Mohy, Hoda M. O. Mokhtar, Mohamed E. El-Sharkawi*	1374-1379
Biometric linkage between identity document card and its holder based on real-time facial recognition *Authors: Wojciech Wodo, Sebastian Zientek*	1380-1383

Section 3: Poster Presentations

Phishing Website Detection Fuzzy System Modelling *Authors: Phoebe Barraclough, Graham Sexton*	1384-1386
MCIP: High Configurable 8-bit Microcontroller IP-Core *Authors: Ibrahim Mezzah, Hamimi Chemali, Samia Mezzah, Omar Kermia, Omar Abdelmalek*	1387-1390
Design, Simulation and Realization of a Parametrizable, Configurable and Modular Asynchronous FIFO *Authors: Haytham Ashour*	1391-1395
Unbiased FIR Smoother for Discrete Time-Variant Systems with Backward Structure *Authors: Shunyi Zhao, Fei Liu, Yuriy S. Shmaliy*	1396-1400
QoSBF: QoS Bootstrapping Framework *Authors: Zainab M. Aljazzaf*	1401-1402
Distribution of Accurate Time Over Fiber Data Network *Authors: Josef Vojtech, Vladimir Smotlacha, Jan Radil*	1403-1405
The Need of a New Computing Curricula, A Kuwait Case Study *Authors: Eiman Tamah Al-Shammari*	1406-1407
A Comparison of Relay Selection and Repetition Coding for Free-Space Optical Communication *Authors: Niyazi Odabasioglu, Sayed Hasan Hariq, Yasin Celik*	1408-1411
Multi-Agent System for a Reliable Routing in WSN *Authors: Mostefa Bendjima, Mohammed Feham*	1412-1419
Algorithmic Innovations in Extended Unbiased FIR Filtering of Nonlinear Models *Authors: Moises Granados-Cruz, Yuriy S. Shmaliy, Choon Ki Ahn, Shunyi Zhao*	1420-1423
Evaluation of Effects of Audio and Video of Mother on Sense of Security and Communicative Action of Children Staying at Home *Authors: Madoka Suzuki, Tomoaki Ohtsuki*	1424-1426
The Novel Rule Induction Approach to Dynamic Big Data in Green Energy *Authors: Chun-Che Huang, Tzu-Liang (Bill) Tseng, Ming-Xuan Zhou*	1427-1432
The Activity and Web Service of National Agricultural Biotechnology Information Center (NABIC) in Korea *Authors: Chang-Kug Kim, Young-Joo Seol, Tae-Ho Lee, Dong-Suk Park, Dong-Jun Lee, Jae-Hee Lee, Do-Wan Kim, Jae-Hyeon Oh*	1433-1434
The Propagation Parameters on RFID- Localization Accuracy *Authors: Rashid Ahmed, John N. Avaritsiotis*	1435-1439
Using Gradient Model to Compare Between Treatment Samples and Non-Treatment Samples *Authors: Mohamed Ashabrawy*	1440-1449

Keynote Speakers

Thomas Sterling

Indiana University

Keynote Talk - July 28, 2015 | 9:00 AM

Dr. Thomas Sterling holds the position of Professor of Informatics and Computing at the Indiana University (IU) School of Informatics and Computing as well as serves as Chief Scientist and Executive Associate Director of the Center for Research in Extreme Scale Technologies (CREST). Since receiving his Ph.D from MIT in 1984 as a Hertz Fellow Dr. Sterling has engaged in applied research in fields associated with parallel computing system structures, semantics, and operation in industry, government labs, and academia. Dr. Sterling is best known as the "father of Beowulf" for his pioneering research in commodity/Linux cluster computing. He was awarded the Gordon Bell Prize in 1997 with his collaborators for this work. He was the PI of the HTMT Project sponsored by NSF, DARPA, NSA, and NASA to explore advanced technologies and their implication for high-end system architectures. Other research projects included the DARPA DIVA PIM architecture project with USC-ISI, the Cray Cascade Petaflops architecture project sponsored by the DARPA HPCS Program, and the Gilgamesh high-density computing project at NASA JPL. Thomas Sterling is currently engaged in research associated with the innovative ParalleX execution model for extreme scale computing to establish the foundation principles to guide the co-design for the development of future generation Exascale computing systems by the end of this decade. ParalleX is currently the conceptual centerpiece of the XPRESS project as part of the DOE X-stack program and has been demonstrated in proof-of-concept in the HPX runtime system software. Dr. Sterling is the co-author of six books and holds six patents. He was the recipient of the 2013 Vanguard Award.

The Paradigm Shift beyond Exascale Computing

Abstract: The struggle to exploit near nano-scale semiconductor technologies to sustain exponential performance gain of the last two decades and more is forcing innovations in architecture, programming models, and supporting system software beyond the scope of conventional techniques even as legacy codes demand continuity. Contention, sometimes severe, between two strategies has forced a schism in the exascale research community: 1) the evolutionary incremental approach seeks to build on conventional practices in support of legacy codes and retained skill sets while address challenges of scalability; 2) the pathfinding strategy breaks with tradition to devise a revolutionary methods of exploiting the opportunities and addressing the myriad challenges of the new technologies driving the promise of computing forward. This Keynote presentation will summarize this period of paradigm shift between evolutionary and pathfinding strategies and provide a detailed description of early research results in pursuit of the latter. Specifically, the experimental ParalleX execution model will be described and justified in terms of the SLOWER performance model and experimental results using the HPX-5 runtime system that implements ParalleX will be presented. This system embodies the principles of global address space, multi-threading, message-driven computation, futures synchronization, and introspective scheduling and resource management. Tentative conclusions concerning the potential of dynamic adaptive runtime methods will be discussed based on results from a number of applications including adaptive mesh refinement and fast multipole methods among others. Questions from the participants are welcome throughout the presentation.

Fahim Kawsar

Director, Internet of Things Research, Bell Laboratories, Alcatel-Lucent

Keynote Talk - July 28, 2015 | 10:00 AM

Dr. Fahim Kawsar leads the Internet of Things research activity at Bell Labs. His current work focuses on building human centred software architectures, applications and interaction tools with awareness technologies (sensor-actuator-perception algorithm) in the cross-section of Ubiquitous Computing and Human Computer Interaction. He has a keen interest in understanding what aspects of system infrastructure can be part of the user experience and what design and interaction rationales lead to such system. Fahim's work has been published widely in international books and journals, presented at conferences across the world and has had projects commissioned. Fahim has a PhD in Computer Science from Waseda University, has worked before at Nokia Research, and Lancaster University.

Network Intelligence Driven Behavior Modeling for a Connected World

Abstract: In this talk I will challenge the massive sensorised approach for personal IoT applications drawing upon the failure of commercializing smart home research of last 15 years. I will argue that for wide scale adoption, and market penetration of personalized IoT services, existing network infrastructure should play the key role for sensing and learning, by eliminating the cost of deployment and management of many sensors. I will then zoom into Bell Labs' opportunistic network sensing approach that transforms quantified noises into social signals by discussing a number of case studies, that uses mobile network, home network and travel network signals instead of dedicated sensing infrastructure to extract rich and valuable contextual knowledge about personal and community behavior in multiple application domains including Enterprise, Urban City, and Lifestyle.

Karlheinz Meier

Heidelberg University

Keynote Talk - July 29, 2015 | 9:00 AM

Karlheinz Meier is a professor of experimental physics at Heidelberg University in Germany. He received his PhD in 1984 from Hamburg University. For more than 30 years he worked in experimental particle physics, contributing to several experiments at the CERN and DESY laboratories. He designed and implemented a large-scale data selection system for an LHC experiment at CERN: Since 2005 he has shifted his interest towards custom hardware implementations of neural circuits. He has initiated and led 2 major European initiatives in the field (FACETS and BrainScaleS) and is currently co-director of the Human Brain Project.

Neuromorphic Computing in the Human Brain Project

Abstract: The brain is characterized by extreme power efficiency, fault tolerance, compactness and the ability to develop and to learn. It can make predictions from noisy and unexpected input data. Any artificial system implementing all or some of those features is likely to have a large impact on the way we process information. With the increasingly detailed data from neuroscience and the availability of advanced VLSI process nodes the dream of building physical models of neural circuits on a meaningful scale of complexity is coming closer to realization. Such models deviate strongly from classical processor-memory based numerical machines as the two functions merge into a massively parallel network of almost identical cells. The lecture will introduce current projects worldwide and the approach proposed by the EU Human Brain Project to establish a systematic path from biological data, simulations on supercomputers and systematic reduction of cell complexity to derived neuromorphic hardware implementations with a very high degree of configurability.

Muriel Médard

MIT - Massachusetts Institute of Technology

Keynote Talk - July 30, 2015 | 9:00 AM

Muriel Médard is the Cecil E. Green Professor of the Electrical Engineering and Computer Science Department at MIT. Professor Médard received B.S. degrees in EECS and in Mathematics in 1989, a B.S. degree in Humanities in 1990, a M.S. degree in EE 1991, and a Sc D. degree in EE in 1995, all from MIT. Her research interests are in the areas of network coding and reliable communications, particularly for optical and wireless networks. She was awarded the IEEE Leon K. Kirchmayer Prize (2002), the IEEE Communication Society and Information Theory Society Joint Paper Award (2009), and the IEEE William R. Bennett Prize (2009). She received the 2004 MIT Harold E. Edgerton Faculty Achievement Award. She was named a Gilbreth Lecturer by the NAE in 2007. She is a Fellow of IEEE, and past President of the IEEE Information Theory Society.

Stormy Clouds - security in distributed cloud systems

Abstract: As massively distributed storage becomes the norm in cloud networks, they contend with new vulnerabilities imputed by the presence of data in different, possibly untrusted nodes. In this talk, we consider two such types of vulnerabilities. The first one is the risk posed to data stored at nodes that are untrusted. We show that coding alone can be substituted to encryption, with coded portions of data in trusted nodes acting as keys for coded data in untrusted ones. In general, we may interpret keys as representing the size of the list over which an adversary would need to generate guesses in order to recover the plaintext, leading to a natural connection between list decoding and secrecy. Under such a model, we show that algebraic block maximum distance separable (MDS) codes can be constructed so that lists satisfy certain secrecy criteria, which we define to generalize common perfect secrecy and weak secrecy notions. The second type of vulnerability concerns the risk of passwords' being guessed over some nodes storing data, as illustrated by recent cloud attacks. In this domain, the use of guesswork as metric shows that the dominant effect on vulnerability is not necessarily from a single node, but that it varies in time according to the number of guesses issued. We also introduce the notion of inscrutability, as the growth rate of the average number of probes that an attacker has to make, one at a time, using his best strategy, until he can correctly guess one or more secret strings from multiple randomly chosen strings.

Geyong Min

University of Exeter

Keynote Talk - July 30, 2015 | 10:30 AM

Professor Geyong Min is a Chair in High Performance Computing and Networking with the Computer Science discipline in the College of Engineering, Mathematics and Physical Sciences at the University of Exeter, UK. His recent research has been supported by European FP6/FP7, UK EPSRC, Royal Academy of Engineering, Royal Society, and industrial partners including Motorola, IBM, Huawei Technologies, INMARSAT, and InforSense Ltd. Prof. Prof. Min is the Co-ordinator of two recently funded FP7 projects: 1) Quality-of-Experience Improvement for Mobile Multimedia across Heterogeneous Wireless Networks (QUICK); and 2) Cross-Layer Investigation and Integration of Computing and Networking Aspects of Mobile Social Networks (CLIMBER). As a key team member and participant, he has made significant contributions to several EU projects, such as 1) Design and Engineering of the Future Generation Internet (NoE-FGi), 2) Enabling Convergence of IP Multimedia Services over Next Generation Networks Technology (VITAL), and 3) Design and Engineering of the Next Generation Internet: Towards the Convergence of Multi-Service Heterogeneous Networks (NoE-NGi).

Analytical Modelling and Quality-of-Service in Wireless Multimedia Networks

Abstract: With rapid innovation in sophisticated wireless communication technologies, the past years have witnessed a dramatic growth of mobile multimedia applications, for example, Live Mobile Video, 3D Video Stream, VoIP, Mobile TV, and so on. These content-rich and resource-hungry multimedia applications generate complex traffic patterns and have high demands of Quality-of-Service (QoS). However, the inherent features of wireless communications, such as scarce bandwidth, limited transmission range, error-prone channels, and heterogeneous access technologies, lead to a high level of dynamics of available communication resources and pose great challenges on multimedia applications over wireless networks. In this talk, heterogeneous stochastic models will be firstly presented to capture the traffic characteristics (e.g., burstiness, self-similarity and large-lag correlation) of multimedia applications. An analytical performance model will then be presented for a hybrid traffic scheduling mechanism that integrates the fundamental scheduling schemes in a hierarchical manner and serves as a promising strategy for QoS differentiation in wireless multimedia network. The accuracy of the model is validated through extensive comparison between the analytical results and those obtained from simulation experiments of the actual system subject to the real-world multimedia applications. The model is then used as a cost-effective performance optimization tool for resource allocation and management in wireless multimedia networks. Finally, the related emerging issues and future directions will be presented and discussed.

Knowledge Talks

Paul Galwas

Security Architect, Digital Catapult
Knowledge Talk - July 28, 2015 | 11:30 AM

Paul Galwas is the Digital Catapult's Security Architect. He has 15+ years' experience in security R&D. At nCipher, Secerno and Cellcrypt, he worked on security protocols, secure identity, digital asset protection and secure payment systems, and with UK and US Governments on classified mobile security. He was an early member of Open Group Jericho Forum, and the Trusted Computer Group. At Computervision, Telxon and Prime, Paul developed early Wi-Fi technologies and mobile handheld systems, after spearheading 3D modelling and realistic imaging. He holds a PhD and MA in science from Cambridge University.

Smart City opportunity: privacy-preserving citizen mobility services

Abstract: Data is the lifeblood of "Smart" cities. We are keenly interested in our and our friends' mobility around the city. This offers exciting new market opportunities around people's spatio-temporal travel data. Yet data-linkage threatens our privacy, especially since our movements and interactions are so predictable, and there are strong correlations between our social interactions and locations, which greatly compound the risks. So there is an opportunity to differentiate services by seeking to increase awareness, transparency and trust by leveraging new privacy-preserving technologies when processing spatio-temporal data.

Bob Crooks

Department for the Environment Food and Rural Affairs (Defra), UK Government & British Computer Society
Knowledge Talk - July 28, 2015 | 12:00 PM

Since obtaining his Masters (distinction) in the Analysis and Design of Information Management Systems at the London School of Economics in 1981, Bob has been involved in all aspects of the IT profession including project management, software development, systems analysis and design, and training, and successfully led the procurement and implementation of fishing vessel tracking and reporting systems for the UK Fisheries Departments through three implementations. He is currently working for the UK's Department for the Environment Food and Rural Affairs (Defra) where he is their lead for Sustainable and Innovative use of ICT. Bob is deputy chair of the UK Cabinet Office's Green ICT Delivery Unit (GDU) where he heads up a working group on Green ICT metrics. He has led annual assessments for the GDU, contributing analyses to all its 3 Annual reports. A fourth annual round of assessments is now underway across all UK 17 central UK government departments. Bob chairs the British Computer Society's (BCS) Green ICT Specialist Group which promotes Green ICT practices across its membership of some 1,400 ICT professionals. He is a member of the Association of Project Managers (APM) as well as a BCS Chartered ICT professional.

Green ICT matters …

Abstract: Green IT has become a hackneyed term for an area of information system impacts that is of increasing importance, both on the demand and supply side. With its consumption of scarce resources and energy supplies, and increasing demands for more capacity and provision (even in the UK, we don't all have smart phones), we need to ensure efficiency in our manufacture, operation and disposal of ICT assets as we supply more of them

With the increasing complexity of living on this planet, the continuing rise in global population and the finite resources we have available, we need ICT to be able to respond to the challenges and supply

- Reductions in the footprints of our lives, so we can "tread" more lightly on the planet
- The means for collecting, analysing and managing the data and information necessary to make the right decisions at the right time at all levels in our society
- Services that enable communities to work together in cities, cities to work together in countries and countries to work together around the globe

I will explore the range of concerns that sustainable green ICT covers from the manufacture of ICT assets, their use and operation to their ultimate disposal, and how that use is helping us sustain ourselves, our communities and lives on this planet

Andrea Feltrin

European Commission - Future and Emerging Technologies (FET)

Knowledge Talk - July 29, 2015 | 10:15 AM

Dr Andrea Feltrin holds a M.S. degree with honours in Physics from Trieste University in Italy. His early research interests focused on laser optics and he developed them in the field of semiconductor optoelectronics earning a PhD from the Swiss Federal Institute of Technology in 2004. He was awarded a research grant to work on semiconductor material engineering for space solar cell applications at the Texas Centre for Advanced Materials (NASA sponsored research lab in Houston, USA). In 2006 he returned to Switzerland to lead a team at the University of Neuchatel that pioneered thin film silicon solar energy technologies setting up and implementing R&D projects with European industry. In 2010 he joined Kaneka, a leading Japanese solar energy and chemical corporation, as Chief Senior Researcher developing high efficiency silicon solar cells and managing the R&D project portfolio with partners in Europe and worldwide. Since 2013 he is Project Officer at the European Commission in the Future and Emerging Technologies (FET) Unit, where he joined the team implementing the exascale challenge of the High Performance Computing (HPC) strategy in H2020.

Funding disruptive technologies for European competitiveness and growth

Abstract: Future and Emerging Technologies (FET) is a funding programme under the H2020 EU Framework Programme for Research and Innovation with the mission to turn Europe's excellent science base into a competitive advantage by uncovering radically new technological possibilities. It helps Europe to grasp leadership early on in new and emerging technology areas that promise to renew the basis for European competitiveness and growth and that will make a difference for society in the decades to come. It brings closer science, engineering and society and accelerate the transition from upstream research to technology development and transformational impact. FET actions help to create in Europe a fertile ground for responsible and dynamic multi-disciplinary collaborations on future and emerging technologies and for kick-starting new European research and innovation eco-systems around them. These will be the seeds for future industrial leadership and for tackling society's grand challenges in new ways.

Peter Stollenmayer

Celtic Office Strategy Director of the Celtic-Plus, EUREKA

Knowledge Talk - July 29, 2015 | 10:45 AM

Peter Stollenmayer has worked in telecommunications for more than 25 years. After he got his master's degree in electrical engineering from the University of Stuttgart in 1981, he worked with Deutsche Telekom (at that time "Deutsche Bundespost") in the areas of PABXs and ISDN standards. He was involved in standardizing ISDN-PABXs from the very early days. He was member of the ETSI Board and of the ETNO strategic group on standardization issues from 1996 to 1998. In 1997 he changed to Eurescom, where he has led many projects in the area of telecommunication users and markets. He was coordinator of the FP6 Integrated Projects NM2 (New Media for a New Millennium), TA2 (Together Anywhere, Together Anytime) and Vconect (Video Communication for Networked Communities). Since mid-2014 he has been strategic director of the Celtic Office, hosted by Eurescom.

EUREKA and Celtic-Plus - Opportunities for Collaboration in R&D

Abstract: EUREKA is an intergovernmental network launched in 1985, to support market-oriented R&D and innovation projects by industry, research centres and universities across all technological sectors. It is composed of 41 members, including the European Union represented by the Commission. With its flexible and decentralised network, EUREKA offers project partners rapid access to skills and expertise across Europe and national public and private funding schemes. Celtic-Plus is the industry-driven European research programme for implementing the vision of a Smart Connected World. It covers a broad range of areas in ICT, including communication infrastructures, services, applications and multimedia. The programme started in 2003 and is operated as an ICT Cluster under the umbrella of EUREKA, the intergovernmental network for market-driven industrial R&D. Participation through the regular project calls is open to any organization ready to contribute to the Smart Connected World vision. The collaborative Celtic-Plus research projects are financed through public and private funding. The presentation will introduce EUREKA and Celtic-Plus, explain how they work, what the benefits are, and how European organisations can participate in the programme. The EUREKA Smart City Initiative and the Celtic-Plus Programme will be described, and some selected high potential Celtic-Plus projects illuminated.

Peter Whale

Board member, Cambridge Wireless & Director of Product Marketing, Iotic-Labs
Knowledge Talk - July 29, 2015 | 11:30 AM

Peter is an accomplished leader in innovation and technology with a track record of conceiving and commercialising breakthrough technology-based products. Peter is Director of Product Marketing with Iotic Labs Ltd, a disruptive start-up with a vision to enable Things to interact on the Internet just like people do. Previously Director of Product Management with Qualcomm Technologies Incorporated, Peter was responsible for innovation and product commercialisation of IP in the field of machine learning into a portfolio of products that have benefited millions of users every day around the globe. Prior to Qualcomm, Peter was a key member of the leadership team at TTPCom, which played an early and pivotal role in the development of digital GSM and the emergence of Internet-enabled mobile phones. Peter developed and sold software solutions shipped in over 100 million handsets, and managed relationships with a number of blue chip customers. Peter has been a board member of CW (Cambridge Wireless) since 2009. Peter is a long-standing SIG Champion of the Future Devices SIG, and has conceived and delivered many innovative and successful events along with his fellow co-champions. Peter is co-author of Essentials of Mobile Handset Design, published by Cambridge University Press, a book that addresses the complex blend of design and technology factors needed to create great mobile devices.

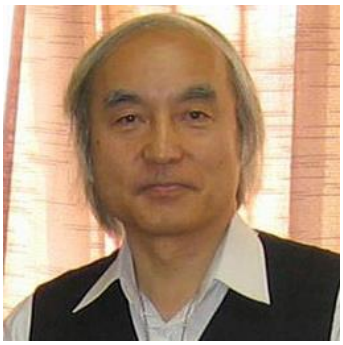
The Future of Wireless will be nothing like the past

Abstract: One thing seems certain: the future of wireless will be nothing like the past. Billions of "things" will be connected using networks quite unlike the ones we use today. Many new products, devices and appliances will be wirelessly connected, and opportunities to transform whole new industry sectors abound. Wireless is finding new application in the home, within government and businesses, in our hospitals, in our cars and in our cities. Major growth challenges exist too. Smartphone penetration will approach ubiquity, average revenue per user is declining, data usage is expanding rapidly. Value has moved to cloud providers with expertise in software and analytics providing innovative consumer services. There is not enough spectrum for future growth and agreement is lacking on potentially conflicting requirements for 5G. With change brings opportunity, new questions to ask and new problems to solve. The technology revolution has only just begun! This talk will briefly review the technical, social and business trends influencing the future of wireless, and then draw out some of the key areas of academic research likely to be of particular interest in the future to industry.

Tutorial

Kohei Arai

Saga University, Japan
Tutorial - July 30, 2015 | 11:30 AM



Dr Kohei Arai, a Scientist, Professor and Author. He is currently Professor at Saga University, Japan and Adjunct Prof. of the University of Arizona, USA since 1998. Dr Arai received PhD degree in Information Science from Nihon University in June 1982 and MS degree in Electronics Engineering from Nihon University in March 1974. His current research concerns are Satellite Remote Sensing, Radiative Transfer Equation, Human-Computer Interaction, Image Recognition and Understanding, Non-Linear Optimization Theory and Wavelet Analysis. Dr Arai holds 42 patents and received numerous awards, including the Patent Award of the Year. Dr Arai has been featured in Japan Times and Italian Newspapers for his work on Eyes only Computer System. He has worked on several global research collaboration projects during his career. He wrote 31 books and published 490 journal papers and 390 of conference papers.

Rescue system with vital sign monitoring of sensor network

Abstract: Method and system for human action detections with acceleration sensors for the proposed rescue system for disabled and elderly persons who need a help in evacuation from disaster areas is proposed. Not only vital signs (blood pressure, heart beat pulse rate, body temperature, bless and consciousness) but also, the location and attitude of the persons have to be monitored for the proposed rescue system. The attitude can be measured with acceleration sensors. In particular, it is better to discriminate the attitudes, sitting, standing up, and lying down. Also, action speed has to be detected. Experimental results show that these attitude monitoring can be done with acceleration sensors.

Industrial Talk

Theo Priestley

Technology Speaker
Industrial Talk - July 30, 2015 | 11:30 AM

Theo Priestley is an independent technology evangelist and has been providing industry analysis and advisory services, opinion and commentary on technology and software trends since 2007. A senior technologist and advisor to the C-level, he is able to articulate and shape the IT roadmap and strategic direction of clients to take advantage of industry trends. Theo is an authority on BPM (Business Process Management) and trusted industry thought leader on the business and consumer impacts of Big Data, Cloud, Mobile and Social, M2M, Internet of Things as well as understanding future disruptive technologies. Theo was Vice President and Software AG's global Chief Technology Evangelist and previously consulted on small and large scale business and technology transformation projects.

The Future of Work: How 100 Children See Technology Improve Their Working Life

Abstract: In 2014 I embarked on an interesting project: to survey 100 school children about how they see the work environment being shaped for them by the time they reach working age. Is it all spaceships and teleporters, or are our children more in tune with the future than we are ?