

# Advance Program



**FiCloud 2015**

**The 3<sup>rd</sup> International Conference on Future Internet of Things and Cloud**



**OBd 2015**

**The International Conference on Open and Big Data**

IEEE Computer Society, Technical Committee on the Internet (IEEE-CS TCI)



**MobiWis 2015**

**The 12th International Conference on Mobile Web and Intelligent Information Systems**

Lecture Notes in Computer (LNCS) Science, Springer

**Co-located Symposia/Workshops:**

BigDataR&I, MobiApps, PNECT, ICI, SNAMS, EMSICC, CNBuB, SP4SC, DSS

**24-26 August 2015, Rome, Italy**

With Support of

SAPIENZA Università di Roma, Italy

University of Bradford, United Kingdom

Oxford Brookes University, United Kingdom



## **KEYNOTE TALKS**

### **David Wallom**

Oxford e-Research Centre  
University of Oxford  
Oxford, UK

### **Riccardo Rosati**

Dipartimento di Ingegneria Informatica,  
Automatica e Gestionale (DIAG)  
Sapienza Università di Roma  
Rome, Italy

### **Avigdor Gal**

Faculty of Industrial Engineering & Management  
Technion - Israel Institute of Technology, Israel

### **Marco Lisi**

European Space Agency - ESTEC  
(Former Special Advisor of the European Commission)

## **KEYNOTE TALK**

### **Creating a Widely Distributed Production Federated Cloud System to Support Multiple User Communities in Research**

David Wallom  
Oxford eResearch Centre  
University of Oxford, UK

#### **Abstract:**

The EGI federated cloud, which has been in development for the past 3 years has now been in production for over a year. Building on the tried and trusted EGI core services we added federated IaaS compute and storage services, utilising open standards to support 10 pilot communities at launch. Since then the number of supported communities has grown over seven fold. We will discuss the development of the model of federation, the different application design models of user communities we support and why cloud will be a success when compared with grid due to this inherent flexibility.

#### **Biography:**

David Wallom is Associate Professor and Associate Director of the Oxford e-Research Centre at the University of Oxford, UK. He has been there since the centres foundation building advanced e-infrastructure systems, initially with grid computing models and more recently with cloud services. Until April he chaired the Federated Cloud activities within the EGI activity having been one of its founding architects. He has a background in distributed systems research having worked in the UK eScience program for over 12 years.

## **KEYNOTE TALK**

### **Ontology-based Data Access**

Riccardo Rosati

Department of Computer, Control, and Management Engineering  
Sapienza University of Rome, Italy

#### **Abstract:**

Ontology-based data access (OBDA) has recently become a hot research topic in knowledge representation and data management. The basic idea underlying OBDA is to superimpose an ontology (conceptual layer) to a set of data sources (data layer), and use the ontology as a virtual schema for querying the data sources. The ontology and the data sources are connected through declarative mappings that provide the semantic relationship between the two layers.

This talk will introduce ontology-based data access and will overview the most important results obtained in this area. The existing technology for query answering in OBDA will be presented, focusing in particular on the so-called query rewriting approach to query answering.

#### **Biography:**

Riccardo Rosati is Associate Professor at the Department of Computer, Control, and Management Engineering, Sapienza University of Rome, Italy. His main research interests are in the fields of Databases and Artificial Intelligence, and include knowledge representation, Description Logics, ontologies, Semantic Web, databases, and nonmonotonic reasoning. He is the author of more than 150 publications in international journals and conferences. He is member of the editorial board of the Artificial Intelligence Journal. He is member of the steering committees of the Description Logics workshop, the Nonmonotonic Reasoning workshop, and the International Conference on Web Reasoning and Rule Systems.

## **KEYNOTE TALK**

### **Big Data Integration: The Big Promise of Data Integration**

Avigdor Gal

Faculty of Industrial Engineering & Management  
Technion - Israel Institute of Technology, Israel

#### **Abstract:**

Data integration has been the focus of research for many years now. At the meta-data level, schema matching and mapping and ontology matching and alignment identify ontological relationships between structured data descriptions. At the data level, entity resolution (also known as record deduplication) aims at "cleaning" a database by identifying tuples representing the same entity. The need for data integration stems from data heterogeneity (arriving from multiple sources), the lack of sufficient semantics to fully understand the meaning of data, and errors that may stem from incorrect data insertion and modifications (e.g., typos and eliminations). The evolution of data accumulation, management, analytics, and visualization that has recently led to coining the term big data provides an exciting arena for new and challenging research agenda for data integration. In the light of these landscape changes we analyze the impact of big data on data integration, that is big data integration. Some of the topics to be covered are: modeling uncertainty in big data integration, evaluating data integration tasks in the presence of big data.

#### **Biography:**

Avigdor Gal is a faculty member at the Technion -- Israel Institute of Technology. His research focuses on effective methods of integrating data from multiple and diverse sources, which affect the way businesses and consumers seek information over the Internet. He has published more than 100 papers in leading professional journals, conferences, and books. He authored the book Uncertain schema Matching in 2011, serves in various editorial capacities for periodicals and has helped organize professional workshops and conferences (e.g., BPM, CoopIS, and DEBS) nearly every year since 1998.

## **KEYNOTE TALK**

### **Security in Large, Strategic and Complex Systems: Challenges and Solutions**

Marco Lisi

GNSS SERVICES ENGINEERING MANAGER  
European Space Agency - ESTEC  
Former Special Advisor of the European Commission

#### **Biography:**

Dr. ing. Marco Lisi is presently GNSS Services Engineering Manager at the European Space Agency, in the Directorate of Galileo Program and Navigation Related Activities. In this position he is responsible for the engineering and exploitation of services based on the European navigation infrastructures, Galileo and EGNOS, advising on these matters the Executive Director of the European GNSS Agency (GSA). He was previously responsible for the systems engineering, operations and security activities of the Galileo project.

In October 2012, he was appointed Special Advisor of the European Commission on European space policies and he served in this position until October 2014.

After getting a "summa cum laude" doctorate in engineering in 1980, he has worked for more than thirty years in the aerospace and telecommunications sectors, covering managerial positions in R&D, engineering and programs, both in industry and in institutional organizations. During his professional career, he was directly involved in a number of major satellite programs: Italsat, Olympus, Artemis, Meteosat Operational, Meteosat Second Generation, Sicral 1A, Globalstar, Cosmo-Skymed, Galileo.

Dr. ing. Lisi is Senior Member of IEEE ("Institute of Electrical and Electronics Engineers") and of AIAA ("American Institute of Aeronautics and Astronautics"), Member of ION ("Institute of Navigations. He is also Fellow Member of the British Interplanetary Society and "Honorary Life President" of the Italian chapter of INCOSE (International Council on Systems Engineering"), that he founded in 2008.

Dr. ing. Lisi holds five international patents and authored more than one hundred and eighty technical papers in international reviews or conferences.

## **MONDAY 24 AUGUST 2015**

08:00 am Registration

9:00-9:30 Conference Opening (Room: Leonardo A)

**09:30-10:30**

**Plenary Session: Keynote I**

Creating a Widely Distributed Production Federated Cloud System to Support Multiple User Communities in Research

*David Wallom, Oxford eResearch Centre, University of Oxford, UK*

Session Chair: Helen Karatza, Aristotle University of Thessaloniki, Greece

Room: Leonardo A

**10:30-11:00**

**Coffee Break**

**11:00-12:30**

**Parallel Sessions**

### **FiCloud Session 1: Software Architecture and Middleware**

Session Chair: Stephan Reiff-Marganiec, University of Leicester, UK

Room: Leonardo A

Impact of Critical Infrastructure Requirements on Service Migration Guidelines to the Cloud

*Christian Wagner, Aleksandar Hudic, Silia Maksuti, Markus Tauber and Frank Pallas*

Cross-Domain Internet of Things Application Development: M3 Framework and Evaluation

*Amelie Gyrard, Soumya Kanti Datta, Christian Bonnet and Karima Boudaoud*

Towards Semantic Monitoring Data Collection and Representation in Federated Infrastructures

*Yahya Al-Hazmi and Thomas Magedanz*

Designing a Smart City Internet of Things Platform with Microservice Architecture

*Alexandr Krylovskiy, Marco Jahn and Edoardo Patti*

Dynamic Cloud Resources Allocation on Multidomain/Multiphysics Problems

*Niki Sfika, Aigli Korfiati, Christos Alexakos, Spiros Likothanassis, Konstantis Daloukas and Panagiota Tsompanopoulou*

### **FiCloud Session 2: Data and Knowledge Management**

Session Chair: Ruben Casado, TreeLogic, Spain  
Room: Raffaello A

Gatica: Linked Sensed Data Enrichment and Analytics Middleware for IoT Gateways

*Soheil Qanbari, Negar Behinaein, Rabea Rahimzadeh and Schahram Dustdar*

SensorScript: a Business-Oriented Domain-Specific Language for Sensor Networks

*Alexandre Garnier, Jean-Marc Menaud and Rémy Pottier*

A Cloud-based IoT Data Gathering and Processing Platform

*Vincent C. Emeakaroha, Neil Cafferkey, Philip Healy and John P. Morrison*

Toward an Anonymous Process Mining

*Andrea Burattin, Mauro Conti and Daniele Turato*

Opportunity to Leverage Information-as-an-Asset in the IoT - The road ahead

*Sylvain Kubler, Min-Jung Yoo, Cyril Cassagnes, Kary Främling, Dimitris Kiritsis and Mark Skilton*

### **MobiWis Session 1: Mobile Services and Applications**

Session Chair: Stephan Böhm, University of Applied Sciences, Germany  
Room: Raffaello B

Automatic Evacuation Guiding Scheme Using Trajectories of Mobile Nodes

*Nobuhisa Komatsu, Masahiro Sasabe, Jun Kawahara, and Shoji Kasahara*

TREKIE - Ubiquitous Indoor Localization with Trajectory REconstruction based on Knowledge Inferred from Environment

*Attila Torok, Andras Nagy and Imre Kalomista*

Strong Authentication for Web services with Mobile Universal Identity

*Do van Thanh, Ivar Jørstad, and Do van Thuan*

Optimization of 3D Rendering in Mobile Devices

*Tomas Marek and Ondrej Krejcar*

**12:30-14:00**

**Lunch**

**14.00-15:00**

**Plenary Session: Keynote II**

Big Data Integration: The Big Promise of Data Integration

*Avigdor Gal, Technion - Israel Institute of Technology, Israel*

Session Chair: *Massimo Mecella, SAPIENZA Università di Roma, Italy*



Room: Leonardo A

15:00-15:30

Coffee Break

15:30-17:00

Parallel Sessions

### **FiCloud Session 3: Context-awareness and Location-awareness**

Session Chair: Rubem Pereira, Liverpool John Moores University, UK

Room: Leonardo A

Formalizing Over Design and Under Design of Value Engineering for Context-Aware Cloud Service Development

*Yucong Duan, Qiang Duan, Abdelrahman Osman Elfakiz and Chengxiang Ren*

A Game-Theoretic Analysis on Context-Aware Resource Allocation for Device-to-Device Communications in Cloud-Centric Internet of Things

*Jun Huang, Ying Yin, Qiang Duan and Huifang Yan*

Semantic features for context organization

*Mário Antuns, Diogo Gomes and Rui Aguiar*

Binary Context Tree Based Middleware for Next Generation Context Aware Networks

*Tuğçe Bilen and Berk Canberk*

oneM2M Architecture based User Centric IoT Application Development

*Soumya Kanti Datta, Amelie Gyrard, Christian Bonnet and Karima Boudaoud*

### **FiCloud Session 4: Networking and Communication Protocols**

Session Chair: Helen Karatza, Aristotle University of Thessaloniki, Greece

Room: Raffaello A

Predictive Congestion Avoidance in Wireless Mesh Network

*Fawaz A. Khasawneh, Abderrahmane BenMimoune, Michel Kadoch and Mohammed A. Khasawneh*

User Association for HetNet Small Cell Networks

*Abderrahmane BenMimoune, Fawaz A. Khasawneh and Michel Kadoch*

CoAP over BP for a Delay-Tolerant Internet of Things

*Maël Auzias, Yves Mahéo and Frédéric Raimbault*

Pre-emptive Flow Installation for Internet of Things Devices within Software Defined Networks

*Peter Bull, Ron Austin and Mak Sharma*

A Novel Multicasting Innovation with Optical Burst Switching  
*Pinar Kirci and A. Halim Zaim*

**MobiWis Session 2: Usability and Visualization**

Session Chair: Tor-Morten Grønli, Westerdals - Oslo School of Arts, Communication and Technology, Norway

Room: Raffaello B

Principles of Usability in Human-Computer Interaction Driven by an Evaluation Framework of User Actions

*Tomas Hustak, Ondrej Krejcar, Ali Selamat, Reza Mashinchi and Kamil Kuca*

A Study on User Perception of Mobile Commerce for Android and iOS Device Users

*Perin Ünal, Tuğba Taşkaya Temizel, and P. Erhan Eren*

Toward Knowledge Management Approach to Enhance the Mobile Learning Management Systems

*Hatoon S. AlSagri and Nesrine Zemirli*

Visualization Approaches in Augmented Reality Applications

*Markus Aleksy and Elina Vartiainen*

17:00-18:30

Parallel Sessions

**FiCloud Session 5: Security, Privacy and Trust**

Session Chair: Francesco Benedetto, University of ROMA TRE, Italy

Room: Leonardo A

E-GRANT: Enforcing Encrypted Dynamic Security Constraints in the Cloud

*Muhammad Rizwan Asghar, Giovanni Russello and Bruno Crispo*

A Defense-Centric Model for Multi-Step Attack Damage Cost Evaluation

*Alireza Shameli-Sendi, Habib Louafi, Wenbo He and Mohamed Cheriet*

Information Security Theory for the Future Internet

*Anatoly Malyuk and Natalia Miloslavskaya*

Access Control Mechanism Based On Entity Authentication With IPv6 Header Flow Label Field

*Melnikov Dmitry Anatolievich, Lavrukhin Juriy nikolaevich, Durakovskiy Anatoliy Petrovich, Gorbatov Victor Sergeevich and Petrov Vladislav Romanovich*

Measuring the Ranking Capability of SWA System

*Orabi Mahmoud Shurrah and Irfan Ullah Awan*

## **FiCloud Session 6: Intelligent Systems for Cloud and Services Computing**

Session Chair: Jamal Bentahar, Concordia University, Canada

Room: Raffaello A

Automatic Transformation of Cloud Computing Service Composition to Verifiable Models

*Ana Vazquez, Mohamed El Menshawy and Jamal Bentahar*

Misbehavior Detection Framework for Community-based Cloud Computing

*Omar Abdel Wahab, Jamal Bentahar, Hadi Otrok and Azzam Mourad*

SDDC: A Software Defined Datacenter Experimental Framework

*Alaa Drabseh, Mahmoud Al-Ayyoub, Yaser Jararweh, Elhadj Benkhelifa, Mladen Vouk and Andrew Rindos*

Analysis of Cloud TestBeds using OpenSource Solutions

*Bashir Mohammed and Mariam Kiran*

Stack4Things: an OpenStack-based framework for IoT

*Francesco Longo, Dario Bruneo, Salvatore Distefano, Giovanni Merlino and Antonio Puliafito*

## **BigR&I Session: Big Data Research and Innovation**

Session Chair: Ruben Casado, Treelogic, Spain

Room: Raffaello B

The Cost-Efficient Awareness for Cloud MapReduce

*Yuan-Chih Yu*

Analysis of Hypoexponential Computing Services for Big Data Processing

*Sergey Zapechnikov, Natalia Miloslavskaya, Alexander Tolstoy*

A Machine Learning Approach for Big Data in Oil and Gas Pipelines

*Mohamed Salah Hamdi, Sofiène Tahar*

A Real-Time Big Data Architecture for Glasses Detection Using Computer Vision Techniques

*Alberto Fernández, Rubén Casado, Rubén Usamentiaga*

19:30-21:30

Reception Party

## TUESDAY 25 AUGUST 2015

09:00-10:30

Plenary Session: Keynote III

Ontology-based Data Access

*Riccardo Rosati, Sapienza University of Rome, Italy*

Session Chair: Jamal Bentahar, Concordia University, Canada

Room: Leonardo A

10:30-11:00

Coffee Break

11:00-12:30

Parallel Sessions

### **FiCloud Session 7: Performance Evaluation and Modelling I**

Session Chair: Qiang Duan, The Pennsylvania State University, USA

Room: Leonardo A

Secure Multipath Routing Algorithm for Device-to-Device Communications for Public Safety over LTE Heterogeneous Networks

*Chafika Tata and Michel Kadoch*

Impact of Directional Antennas on Link Probability and Connectivity in Wireless Ad-Hoc Networks

*Gabriel Astudillo and Michel Kadoch*

Revenue optimizing SLA-based admission control for IaaS cloud networks

*Jacques Bou Abdo, Jacques Demerjian, Hakima Chaouchi and Talar Atechian*

A Cost-Effective and QoS-Aware Approach to Scheduling Real-Time Workflow Applications in PaaS and SaaS Clouds

*Georgios L. Stavrinides and Helen D. Karatza*

Performance Evaluation for Process Refinement Stage of SWA System

*Orabi Mahmoud Shurrah and Irfan Ullah Awan*

### **OBD Session 1: Open and Big Data**

Session Chair: Matthew Roughan, University of Adelaide, Australia

Room: Raffaello A

Open Government Data as a Service (GoDaaS): Big Data Platform for Mobile App Developers

*Soheil Qanbari, Navid Rekabsaz and Schahram Dustdar*

Quality Assessment and Evolution of Open Data Portals

*Jürgen Umbrich, Sebastian Neumaier and Axel Polleres*

An Open and Big Data Platform for Cumulative Environmental Analysis and Management

*Paulo Alencar, Donald Cowan, Fred McGarry and R. Mark Palmer*

Challenges and Solutions in Big Data Management - An Overview

*Sravanthi Kanchi, Shubhrika Sandilya, Shashank Ramkrishna, Siddhesh Manjrekar and Akshata Vhadgar*

### **MobiWis Session 3: Mobile Networks and Applications**

Session Chair: Masahiro Sasabe, Nara Institute of Science and Technology, Japan

Room: Raffaello B

A Bandwidth Allocation Method Based on Psychological Factors Considering QoE of Users

*Huong Pham-Thi and Takumi Miyoshi*

Piecewise Linear Formulations for Downlink Wireless OFDMA Networks

*Pablo Adasme and Abdel Lisser*

Reconfigurable Packet FEC Architecture for Mobile Networks

*Wael M El-Medany*

Strategies and Techniques for Relay Node Placement in Multi-hop Wireless Networks

*Abeer AlSanad, Lulwah AlSuwaidan and Mohammed Alnuem*

**12:30-13:30**

**Lunch**

**13.30-15:00**

**Parallel Sessions**

**SNAMS Keynote Session 1:** Security and Privacy for IoT

*Bhavani Thuraisingham, The University of Texas at Dallas, USA*

Session Chair: Rehab Duwairi, Jordan University of Science and Technology, Jordan

Room: Leonardo A

### **OBD Session 2: Big Data and Graphs**

Session Chair: Jürgen Umbrich, Vienna University of Economics and Business, Austria

Room: Raffaello A

Lossy Compression of Dynamic, Weighted Graphs

*Wilko Henecka and Matthew Roughan*

The Hitchhikers Guide to Sharing Graph Data

*Matthew Roughan and Jonathan Tuke*

Structural Analyses of Malaysian Web and Host Graphs

*Jason Yong-Jin Tee, Lay-Ki Soon and Choo-Yee Ting*

Scalable Property Aggregation for Linked Data Recommender Systems  
*Lisa Wenige and Johannes Ruhland*

Unification of Graph Data Models for Heterogeneous Security Information Resources Integration  
*Sergey Stupnikov, Natalia Miloslavskaya and Vladimir Budzko*

#### **MobiWis Session 4: Mobile and Data Services**

Session Chair: Markus Aleksy, ABB AG Corporate Research Center, Germany  
Room: Raffaello B

A Framework for Transactional Service Selection based on Crowdsourcing  
*Rafael Angarita, Maude Manouvrier, and Marta Rukoz*

Mobile e-Services and Open Data in e-Government Processes - Concept and Design  
*Dan Johansson, Josen Lassinantti, and Mikael Wiberg*

Data Analysis as a Service: an Infrastructure for Storing and Analyzing the Internet of Things  
*Martin Lehmann, Andreas Biørn-Hansen, Gheorghita Ghinea, Tor-Morten Grønli and Muhammad Younas*

Storage and processing of data and software outside the company in cloud computing model  
*Aneta Poniszewska-Maranda and Michal Grzywacz*

15:00-15:30

Coffee Break

15:30-17:00

Parallel Sessions

#### **SNAMS Session 2: Social Networks I**

Session Chair: Rehab Duwairi, Jordan University of Science and Technology, Jordan  
Room: Raffaello A

New centrality measure in Social Networks based on Independent Cascade (IC) model  
*Ibrahima Gaye, Gervais Mendy, Samuel Ouya and Diaraf Seck*

Improved Burst Based Real-time Event Detection using Location Dependent Corpora  
*Jürgen Nützel and Frank Zimmermann*

Different Models to Visualise Geolocated City Data from Social Networks  
*Taras Agryzkov, Francisco Álvarez, Leticia Serrano-Estrada, Leandro Tortosa and José F. Vicent*

Social Opinion Mining : An Approach for Italian Language  
*Vito Santarcangelo, Giuseppe Oddo, Maria Pilato, Fabrizio Valenti and Claudio Fornaro*

Graph Summarization for Hashtag Recommendation  
*Mohammed Al-Dhelaan and Hadel Alhawasi*

Using a Rich Context Model for People-to-People Recommendation  
*Alisa Sotsenko, Marc Jansen and Marcelo Milrad*

**SP4SC Keynote Session 1: Security in Large, Strategic and Complex Systems: Challenges and Solutions**

*Marco Lisi, European Space Agency - ESTEC*

Session Chairs: A. Wacker (Universität Kassel, Germany) and F. Benedetto (University of Roma Tre, Rome, Italy)

Room: Leonardo A

**MobiWis Session 5: Smart Phones and Mobile Commerce Applications**

Session Chair: Ondrej Krejcar, University of Hradec Kralove, Czech Republic  
Room: Raffaello B

Mobile Payments in Austria – is Mobile Banking Paving the Way for Mobile Payments?

*Katerina Markoska, Irene Ivanochko and Michal Greguš*

Impact of the Mobile Operating System on Smartphone Buying Decisions: A Conjoint-based Empirical Analysis

*Stephan Böhm, Fabian Adam, and Wendy Colleen Farrell*

SandMash: An Approach for Mashups Techniques on Smartphones

*Raed Ali and Kalman Graffi*

In Need of a Domain-Specific Language Modeling Notation for Smartphone Applications with Portable Capability

*Hamza Ghandorh, Luiz Fernando Capretz, and Ali Bou Nassif*

**17:00-18:30**

**Parallel Sessions**

**SNAMS Session 3: Social Networks II**

Session Chair: Muhannad Quwaider, Jordan University of Science and Technology, Jordan

Room: Raffaello A

RUM Extractor: A Facebook Extractor for Data Analysis

*Rehab M Duwairi and Mosab AlFaqeeh*

Visualizing Social Network Data: a comparative study of Asian-American student conferences

*Roberto Palmieri and Carlo Giglio*

Reliability of the closed-chain-fan social network

*Hajar Sahbani and Mohamed El Marraki*

Human Annotated Arabic Dataset of Book Reviews for Aspect Based Sentiment Analysis

*Mohammad AL-Smadi, Omar Qawasmeh, Bashar Talafha and Muhannad Quwaider*

Negation-aware Framework for Sentiment Analysis in Arabic Reviews

*Rehab M. Duwairi and Mohammad A. Alshboul*

Ontology-Based Approach for Temporal Semantic Modelling of Social Networks

*Souâad Boudebza, Fiaçal Azouaou and Omar Nouali*

## **SP4SC Session 2: Signal Processing for Secure Communications**

Session Chairs: A. Liguori (University of Roma Tre, Rome, Italy) and N. Kopals (Universität Kassel, Germany)

Room: Leonardo A

Simulating Cheated Results Dissemination for Volunteer Computing

*Nils Kopal, Olga Kieselmann and Arno Wacker*

Statistically-enhanced Fine-Grained Diagnosis of Packet Losses

*Daniele Midi, Antonio Tedeschi, Francesco Benedetto and Elisa Bertino*

SoftGap: a Multi Independent Levels of Security Cross-Domain Solution

*Angelo Liguori, Nils Kopal, Arno Wacker, Francesco Benedetto and Gaetano Giunta*

Novel Soft Decoding Algorithm of RLL Codes for Secure Physical-Layer Visible Light Communications

*He Wang and Sunghwan Kim*

Efficient Transmission of Reversible Data Hiding in Encryption Images by Using Reed-Solomon Codes

*Taesoo Kim and Sunghwan Kim*

## **FiCloud Session 8: Performance Evaluation and Modelling II**

Session Chair: Michel Kadoch, ÉTS, Canada

Room: Raffaello B

cCluster: A Core Clustering Mechanism for Workload-Aware Virtual Machine Scheduling

*Mostafa Dehsangi, Esmail Asyabi, Mohsen Sharifi and Seyed Vahid Azhari*



Detection, Mitigation and Quantitative Security Risk Assessment of Invisible Attacks at Enterprise Network

*Rashid Munir, Muhammad Rafiq Mufti, Irfan Awan, Yim Fun Hu and Jules Pagna Disso*

Aggregated Sensor Payload Submission Model for Token-Based Access Control in the Web of Things

*Mohammad Amir, Prashant Pillai and Yim-Fun Hu*

Using Agent-based VM Placement Policy

*Ashraf Al-Ou'n, Mariam Kiran and Demetres D Kouvatsos*

iTREE: Intelligent Traffic and Resource Elastic Energy Scheme for Cloud-RAN

*Tshiamo Sigwele, Prashant Pillai and Yim Fun Hu*

Mathematical Modeling of Association Attempt with the Base Station for Maximum Number of Customer Premise Equipments in the IEEE 802.22 Network

*Humaira Afzal, Irfan Awan and Muhammad Rafiq Mufti*

20:00-23:00

Dinner Party

## WEDNESDAY 26 AUGUST 2015

09:00-10:30

Parallel Sessions

### **FiCloud Session 9: Smart Environment**

Session Chair: Fulvio Corno, Politecnico di Torino, Italy

Room: Leonardo A

IoT Meets Exhibition Areas: a Modular Architecture to Improve Proximity Interactions

*Fulvio Corno, Luigi De Russis, Teodoro Montanaro and Pino Castrogiovanni*

Autonomous and self controlling smart objects for the future internet

*Marco Eric Pérez Hernández and Stephan Reiff-Marganiec*

ALMANAC: Internet of Things for Smart Cities

*Dario Bonino, Maria Teresa Delgado Alizo, Alexandre Alapetite, Thomas Gilbert, Mathias Axling, Helene Udsen, Jose Angel Carvajal Soto and Maurizio Spirito*

Electricity-Metering in a Connected World: Virtual Sensors for Estimating the Electricity Consumption of IoT Appliances

*Frank Englert, Patrick Lieser, Alaa Alhamoud, Doreen Boehnstedt and Ralf Steinmetz*

The advantages of IoT and Cloud applied to Smart Cities

*Ciro Formisano, Daniele Pavia, Levent Gurgen, Takuro Yonezawa, José Antonio Galache, Keiko Doguchi and Isabel Matranga*

### **OBD Session 3: Big Data Analysis**

Session Chair: Jürgen Nützel, 4FriendsOnly.com Internet Technologies AG, Germany

Room: Raffaello A

Location Inference of Social Media Posts at Hyper-Local Scale

*Brian D. McClanahan and Swapna S. Gokhale*

Analysis of Structural Social Capital in Online Social Networks

*Huda Alhazmi and Swapna S. Gokhale*

GeoBI and Big VGI for Crime Analysis and Report

*Federico Herrera, Raquel Sosa and Tatiana Delgado*

Statistical Modeling and Visualizing Open Big Data Using a Terrorism Case Study

*Narasimha Rao Vajjhala, Kenneth David Strang and Zhaohao Sun*

### **EMSICC Session: Energy Management for Sustainable IoT and Cloud**

Session Chair: Selma Boumerdassi, INRIA, France

Room: Raffaello B

Energy Consumption of Networked Embedded Systems

*Nadir Cherifi, Gilles Grimaud, Thomas Vantroys and Alexandre Boe*

Using green KPIs for Large IT Infrastructures' Energy and Cost Optimization

*Boban Celebic and Ruth Breu*

Energy-Aware DPSO Algorithm for workflow Scheduling on Computational Grids

*Karima Oukfif, Lyes Bouali, Samia Bouzefrane and Fatima Boumghar*

Characterizing servers workload in Cloud Datacenters

*Fréjus Gbaguidi, Selma Boumerdassi, Eric Renault and Eugène Ezin*

10:30-11:00

Coffee Break

11:00-12:30

Parallel Sessions

### **FiCloud Session 10: Energy Efficiency**

Session Chair: Ella Pereira, Edge Hill University, UK

Room: Leonardo A

Energy Consumption and Latency in BLE Devices under Mutual Interference:  
An Experimental Study

*Jan Jaap Treurniet, Chayan Sarkar, R. Venkatesha Prasad and Willem de Boer*

A Virtual Cluster Head Election Scheme for Energy-Efficient Routing in  
Wireless Sensor Networks

*Ming-Yu Tsai and Yaw-Chung Chen*

Energy-Aware Offloading Technique for Mobile Cloud Computing

*Maram Akram and Amal EINahas*

Video encoding and streaming mechanisms in IoT Low Power Networks

*Ella Pereira and Rubem Pereira*

Leveraging Low-power Devices for Cloud Services in Community Networks

*Nuno Apolonia, Roshan Sedar, Felix Freitag and Leandro Navarro*

### **OBD Session 4: Big Data QoS and Applications**

Session Chair: Mehrdad Oveisi, Simon Fraser University, Canada

Room: Raffaello A

Redundancy in linked data partitioning for efficient query evaluation

*Eleftherios Kalogeros, Manolis Gergatsoulis and Matthew Damigos*

Using Echo Sounder Technology for Detecting and Predicting Local Sea State

*Mehrdad Oveisi, Fred Popowich, Saida Harle and Maia Hoeberechts*

Improved Burst Based Real-time Event Detection using Adaptive Reference Corpora

*Jürgen Nützel and Frank Zimmermann*

A Traffic Padding to Limit Packet Size Covert Channels

*Anna Epishkina and Konstantin Kogos*

### **CNBuB Session: Community Networks and Bottom-up-Broadband**

Session Chair: Bart Braem - iMinds / University of Antwerp, Belgium

Room: Raffaello B

Experimental Evaluation of BMX6 Routing Metrics in a 802.11an Wireless-Community Mesh Network

*Llorenç Cerdà-Alabern, Axel Neumann and Leonardo Maccari*

Federation tools: An Island Connectivity Experiment with Community-Lab

*Gerard Marin, Leandro Navarro, Bart Braem and Chris Blondia*

Multicast Performance Comparison of SMF and ODMRP using the CONFINE Testbed

*Jonathan Kirchhoff, Julia Niewiejska, Christoph Fuchs, Christoph Barz and Henning Rogge*

Comparing Community Networks to the Internet: an empirical Study of BGP Behaviour

*Bart Braem, Johan Bergs and Chris Blondia*

Tracking and Predicting End-to-End Quality in Wireless Community Networks

*Pere Millan, Carlos Molina, Emmanouil Dimogerontakis Leandro Navarro, Roc Meseguer, Bart Braem and Chris Blondia*

Stream Processing in Community Network Clouds

*Ken Danniswara, Hooman Peiro Sajjad, Ahmad Al-Shishtawy and Vladimir Vlassov*

**12:30-13:30**

**Lunch**

**13:30-15:00**

**Parallel Sessions**

### **FiCloud Session 11: Cloud and IoT Applications**

Session Chair: Mak Sharma, Birmingham City University, UK

Room: Leonardo A

Extensible Disease Diagnosis Cloud Platform with Medical Sensors and IoT Devices

*Hyun Jung La, Han Ter Jung and Soo Dong Kim*

Containers and Clusters for Edge Cloud Architectures - a Technology Review  
*Claus Pahl and Brian Lee*

Success Factors For the Implementation of a Private Government Cloud in Saudi Arabia  
*Amal Alkhlewi, Robert Walters and Gary Wills*

The Future of Cloud Computing - A SWOT Analysis and Predictions of Development  
*Daniel Penzel, Natalia Kryvinska, Christine Strauss and Michal Gregus*

### **ICI Session: Cloud and IoT**

Session Chair: Lo'ai Ali Tawalbeh, Umm AlQura University, Saudi Arabia  
Room: Raffaello A

A Lightweight Platform Implementation for Internet of Things  
*Young Ju Heo, Sung Min Oh, Won Sang Chin, Ju Wook Jang*

Clouds and Interclouds in the Real Estate Sector  
*Andreas Mladenow, Niina Maarit Novak, Christine Strauss, Michal Gregus*

Classification and positioning of Cloud Definitions and Use Case scenarios for portability and interoperability  
*Beniamino Di Martino, Giuseppina Cretella, Antonio Esposito*

Evaluating the Quality of e-Learning Trend Used at AOU based on Participants' Satisfaction  
*Bayan Abu Shawar*

Factors Affecting an Organisation's Decision to Adopt Cloud Services in Saudi Arabia  
*Nouf Alkhater, Gary Wills, Robert Walters*

### **MobiApps Session 1: Mobile Applications I**

Session Chair: Wael M El-Medany, University of Bahrain, Bahrain  
Room: Raffaello B

Mobile Edutainment System - National Palace Museum as an Example  
*Yao-Nan Lien*

Moisture Content Evaluation for Road Surfaces Monitoring by GPR Image and Data Processing  
*Francesco Benedetto and Antonio Tedeschi*

PV Panel Modeling: a mobile application for modeling photovoltaic panels using datasheets information  
*Antonio Tedeschi, Francesco Riganti Fulginei and Antonino Laudani*

Understanding DDoS Attacks From Mobile Devices  
*Paolo Farina, Enrico Cambiaso, Gianluca Papaleo and Maurizio Aiello*

15:00-15:30

Coffee Break

15:30-17:30

Parallel Sessions

### **DSS Session: Data-driven Self-regulating Systems**

Session Chairs: Evangelos Pournaras and Izabela Moise, ETH Zurich, Switzerland

Room: Leonardo A

Learn by Examples how to Link the Internet of Things and the Cloud Computing Paradigms: a Fully Working Proof of Concept

*Antonio Marsico, Attilio Broglio, Massimo Vecchio and Federico Michele Facca*

Privacy Preservation in Ubiquitous Network

*Swarnali Hazra and S.K.Setua*

Design and Development of Integrated, Secured and Intelligent Architecture for Internet of Things and Cloud Computing

*T. Daisy Premila Bai and S. Albert Rabara*

Distributed Cloud Bursting Model Based on Peer-To-Peer Overlay

*Andrii Zhygmanovskyi and Norihiko Yoshida*

### **ICI/PMECT Session: Network Models and Protocols**

Session Chair: Peter Bull, Birmingham City University, UK

Room: Raffaello A

BLEmesh: A Wireless Mesh Network Protocol for Bluetooth Low Energy Devices

*Hyun-soo Kim, JungYub Lee and Ju Wook Jang*

Performance Optimization of a Data Center Using Virtualization Technology: A case study utilizing DEMATEL method

*Arun Shivashankarappa, Sharath Basavanna and Ramalingam Dharmalingam*

Performance analysis of OpenAirInterface system emulation

*Antonio Viridis, Niccolò Iardella, Giovanni Stea and Dario Sabella*

Power Optimization of Large Scale Mobile Cloud Computing Systems

*Mahmoud Al-Ayyoub, Yaser Jararweh, Lo'Al Tawalbeh, Elhadj Benkhelifa and Anas Basalamah*

### **MobiApps Session 2: Mobile Applications II**

Session Chair: Wael M El-Medany, University of Bahrain, Bahrain

Room: Raffaello B

Efficient Mobile Computation using the Cloud

*S. M. Azharul Karim and John J. Prevost*

Mobile-based Archival and Retrieval of Missing Objects using Image Matching

*Mohammed Ghazal, Fasila Haneefa, Samr Ali, Yasmina AlKhalil and Eman Rashed*

Mobile Porting and Multi-platform Runtime Performance Comparisons of Offline and Online BSS Algorithms

*Marvin Offiah and Markus Borschbach*