

# ADVANCE PROGRAM



**FiCloud 2018**

**The IEEE 6<sup>th</sup> International Conference on Future Internet of Things and Cloud, IEEE-CS TCI**



**MobiWis 2018**

**The 15<sup>th</sup> International Conference on Mobile Web and Intelligent Information Systems, LNCS, Springer**



**Innovate-Data 2018**

**The 4<sup>th</sup> International Conference on Big Data Innovations and Applications, IEEE-CS TCI**

**6-8 August 2018, Barcelona, Spain**

With support of:  
**i2Cat Foundation, Spain**



## **SYMPOSIA and WORKSHOPS**

**ICI 2018:** The 5th International Symposium on Intercloud and IoT

**BigR&I-2018:** The 5th International Symposium on Big Data Research and Innovation

**EMSICC 2018:** The 5th International Workshop on Energy Management for Sustainable Internet-of-Things and Cloud Computing

**MobiApps 2018:** The 5th International Workshop on Mobile Applications

**SoNet 2018:** The International Symposium on Social Networks and Applications

**PMECT 2018:** The 12th International Symposium on Performance Modeling and Evaluation of Computer and Telecommunication Networks in Cloud & IoT

**DS4IDS 2018:** The 2nd International Workshop on Data Science for Intelligent Decision Support

**CSW 2018:** The 2nd International Workshop on Cyber Security

**WCG 2018:** The 1st International Workshop on Cloud Gamification

**AWMA 2018:** The 5th International Symposium on Advanced Web and Mobile Applications

## **KEYNOTE TALK I**

Cloud-First and Cloud-Everything: What will IoT do to Prices and Pricing?

Prof. Dr. Gottfried Vossen

University of Münster

Germany

### **Abstract:**

Due to the pervasiveness of the cloud today and due to the fact that data has become a commodity similar to electricity, we are nowadays confronted with new challenges: Companies are often interested in harvesting data even without a clear application in mind, while users happily exchange personal data for a “free” service. IoT contributes to this situation, since it allows to collect even more data about systems, appliances, and people, and comes with additional “freemium” offers. In this situation, the question arises of whether a dedicated price tag should be attached to personal and other data and, if so, what it should say. Conversely, the question is whether “price” as a single piece of information on the value or quality of an object or a service is outdated and should be replaced by relevant and context-specific data. In this talk, these questions are studied from various angles and areas, including electronic commerce, advertising, and automation. Special attention is paid to data-rich marketplaces where everybody can buy or sell data.

### **Biography:**

Gottfried Vossen is a Professor of Computer Science in the Department of Information Systems at the University of Muenster in Germany. He is a Fellow of the German Computer Science Society and an Honorary Professor at the University of Waikato Management School in Hamilton, New Zealand. He received his master’s and Ph.D. degrees as well as the German Habilitation from the Technical University of Aachen in Germany, and is an Editor-in-Chief of Elsevier's Information Systems - An International Journal. His current research interests include conceptual as well as application-oriented challenges concerning databases, information systems, business process modelling, Smart Web applications, cloud computing, and big data.

## **KEYNOTE TALK II**

From the Internet of Things to the Social Innovation  
and the Economy of Data

Pro. Luis Muñoz

University of Cantabria

Spain

### **Abstract:**

Worldwide, cities are one of the key stakeholders in the digital transformation fostered by the evolution of new technologies, new enablers and concepts such as Internet of Things (IoT) and Big Data. Due to this transformation, cities are able to improve their citizens' lives whilst increasing the efficiency of urban services. Aiming at conceiving an inclusive city overcoming the digital gap, city managers have to offer different platforms and tools which encourage citizen participation making the co-creation paradigm a reality. This brings a new dimension to the city and technology symbiosis offering citizens a plethora of possibilities in terms of thinking, designing, implementing and assessing new services which fulfil specific requirements raised by urban collectives and activists. Based on these premises, in this talk, the key experiences and decisions in transforming some legacy urban ecosystems into a smart city will be presented. The incremental approach followed in the digitalization of urban services (waste management, energy...) will be discussed. In addition, other main projects and actions currently being executed in terms of co-creation, holistic management and economy of the data will be explored in this talk.

### **Biography:**

Luis Muñoz is a Professor of Telematics Engineering at the University of Cantabria in Santander, Spain. His research focuses on advanced data transmission techniques, heterogeneous wireless multihop networks, Internet of Things, technologies and services in the context of smart cities and applied mathematical methods for telecommunications. He has participated in several National and European research projects belonging to the 4th, 5th, 6th and 7th and H2020 Framework Program in which he was technical manager of SmartSantander. He has published over 150 journal and conference papers. He serves as editor of several journals and he has been invited to participate in the Steering Committees and Technical Program Committees of the various international conferences. In parallel to this activity, he serves as a Consultant of the Spanish Government as well as for different companies in Europe and USA. He also has served as expert of the ETSI and European Commission.

## **MONDAY 6 AUGUST 2018**

08:00 am: Registration

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

### **09:30-10:30 Plenary Session: Keynote I**

Cloud-First and Cloud-Everything: What will IoT do to Prices and Pricing?  
*Prof. Dr. Gottfried Vossen, University of Münster, Germany*

Session Chair: Michel Kadoch, Ecole de Technologie Superieure, Canada  
Room: Barcelona A

### **10:30-11:00 Coffee Break**

### **11:00-12:30 Parallel Sessions**

#### **FiCloud Session 1: Complex Systems and Architectures**

Session Chair: Giuseppe Di Modica, University of Catania, Italy  
Room: Barcelona A

Multi-level Elastic Deployment of Containerized Applications in Geo-distributed Environments  
*Matteo Nardelli, Valeria Cardellini and Emiliano Casalicchio*

Implementation of a fault aware cloud service provisioning framework  
*Domenico Calcaterra, Vincenzo Cartelli, Giuseppe Di Modica and Orazio Tomarchio*

Economic Considerations for Integrating Massively Parallel Heterogeneous Devices into the Cloud  
*H. Drew Wilken, Joseph M. Myre, and Jason Sawin*

TE-based Machine Learning Techniques for Link Fault Localization in Complex Networks  
*Srinikethan Madapuzi Srinivasan, Tram Truong-Huu and Mohan Gurusamy*

#### **MobiWis Session 1: Mobile Web and Apps**

Session Chair: Sezer Goren, Yeditepe University, Turkey  
Room: Plaza 1

Towards Model-Driven Specification of Business Apps for Wearable Devices  
*Christoph Rieger and Herbert Kuchen*

Development of a Mobile News Reader Application Compatible with In-Vehicle Infotainment

*Başak Kurt and Sezer Gören*

Mobile Applications Used in Multiple Sclerosis

*Blanka Klimova*

Prototype of a Smart Google Glass Solution for Deaf (and Hearing Impaired) People

*Ales Berger and Filip Maly*

12:30-13:30

Lunch

13:30-15:00

Parallel Sessions

### **FiCloud Session 2: Performance Evaluation and Modelling**

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

Room: Barcelona A

Energy-Aware Scheduling of Real-Time Workflow Applications in Clouds Utilizing DVFS and Approximate Computations.

*Georgios L. Stavrinides and Helen D. Karatza*

Effectiveness of content spatial distribution analysis in securing IoT environments

*Fabrizio Angiulli, Luciano Argento and Angelo Furfaro*

Realizing Prioritized Scheduling Service in the Hadoop System

*Tsozen Yeh and Hsinyi Huang*

An Agent Based Model for Health Surveillance Systems and Early Biological Threat Detection

*Mohammad Al-Zinati, Qutaibah Al-Thebyan and Yaser Jararweh*

ReMot: Reputation and Resource-based Model to Estimate the Reliability of the Host Machines in Volunteer Cloud Environment

*Yousef Alsenani, Garth V. Crosby, Tomas Velasco and Abdulrahman Alahmadi*

### **MobiWis Session 2: Wireless Sensor Networks**

Session Chair: Marisa Catalan, i2Cat Foundation, Spain

Room: Plaza 1

Finding Degree Constrained k-Cardinality Minimum Spanning Trees for Wireless Sensor Networks

*Pablo Adasme, Ismael Soto and Fabian Segue*

I-RP: Interference aware Routing Protocol for WBAN

*Adnan Ahmed, Imtiaz Ali Halepoto, Umair Ali Khan, Sanjay Kumar and Ali Raza Bhangwar*

FDRA: Fault Detection and Recovery Algorithm for Wireless Sensor Networks

*Chafiq Titouna, Ado Adamou Abba Ari and Hamouma Moumen*

Modeling the Mobile Signal Transmission Network of Earth-moving and Construction Machines' Sensors

*Tatyana Golubeva, Bakhodyr Yakubov, Sergey Konshin and Boris Tshukin*

### **ICI Session 1: Intercloud and IoT I**

Session Chair: Amine Chemchem, CReSTIC, France

Room: Plaza 6

User Interface design method considering UI device in Internet of Things system

*Shohei Toyama and Masayuki Hirayama*

Cybersecurity in Microgrids

*Sebastian Cruz-Duarte, Paulo A. Gaona-Garcia and Elvis E. Gaona-Garcia*

Deep Learning and Data Mining Classification Through the Intelligent Agent Reasoning

*Amine Chemchem, Francois Alin and Michael Krajecki*

Study of Rule Placement Schemes for Minimizing TCAM Space and Effective Bandwidth Utilization in SDN

*Yen-Wen Chen and Yu-Hsuan Lin*

15:00-15:30

Coffee Break

15:30-17:00

Parallel Sessions

### **FiCloud Session 3: Cloud Services Models and SLA**

Session Chair: Angelo Furfaro, University of Calabria, Italy

Room: Barcelona A

A new SLA-aware Load Balancing Method in the Cloud using an Improved Parallel Task Scheduling Algorithm

*Mehran Ashourae, Seyed Nima Khezr, Rachid Benlamri and Nima Jafari Navimipour*

Multi-Objective Self-Adaptive Composite SaaS Using Feature Model

*Afaf Mousa, Jamal Bentahar and Omar Alam*

Efficient Cloud Auto-Scaling with SLA objective using Q-Learning.  
*Shay Horovitz and Yair Arian*

A Policy Based Application Deployment Method in Hybrid Cloud Environment  
*Hao Wei and Joaquin Salvachua Rodriguez*

### **SoNet Session: Social Networks and Applications**

Session Chair: Irfan Awan, University of Bradford, UK  
Room: Plaza 1

Computing Len for Exploring the Historical People's Social Network  
*Junjie Huang and Tiejian Luo*

Comparative Evaluation of Cyber Migration Factors in the Current Social Media Landscape  
*Xiangyu Xiao and Nicholas Caporuss*

Social engineering: Application of psychology to information security  
*Ivan Del Pozo, Mauricio Iturralde and Felipe Restrepo*

### **ICI Session 2: Intercloud and IoT II**

Session Chair: Nitin Auluck, Indian Institute of Technology Ropar, India  
Room: Plaza 6

A Markov Chain Based Link Lifetime Prediction in Mobile Ad hoc Networks  
*Sayed Chhattan Shah and Sunil Kumar*

Autonomous data acquisition in the hierarchical edge-based MCS ecosystem  
*Martina Marjanovic, Aleksandar Antonic and Ivana Podnar Zarko*

IEEE 802.15.4 Thread mesh network–Data transmission in harsh environment  
*Wojciech Rzepecki, Łukasz Iwanecki and Piotr Ryba*

Metrics and Tool for Evaluating Data Stream Processing Systems  
*Andre Leon S. Gradvohl*

**17:00-18:30**

**Parallel Sessions**

### **FiCloud Session 4: Security, Privacy and Trust I**

Session Chair: Faraz Fatemi Moghaddam, GWDG and University of Göttingen, Germany  
Room: Barcelona A

Ensuring compliance of IoT devices with their Privacy Policy Agreement  
*Alanoud Subahi and George Theodorakopoulos*



A Sequence-Based Access Control Framework for Reliable Security Management in Clouds  
*Faraz Fatemi Moghaddam, Tayyebe Emadinia, Philipp Wieder and Ramin Yahyapour*

Secure Routing for MANET Connected Internet of Things Systems  
*Jonny Karlsson, Laurence S. Dooley and Göran Pulkkis*

Ensuring IoT security with an architecture based on a separation kernel  
*Mahieddine Yaker, Gilles Grimaud, Julien Cartigny, Chrystel Gaber, Jean-Philippe Wary, Xiao Han and Vicente Sanchez-Leighton*

Integrating Behavioural Security Factors for Enhanced Protection of Organisational Information Technology Assets  
*Aristotle Onumo, Andrea Cullen and Irfan Ullah-Awan*

### **CSW Session: Cyber Security**

Session Chair: Hamad Al-Mohannadi, University of Bradford, United Kingdom  
Room: Plaza 1

Lightweight protocol for Privacy and Security for RFID-Based Healthcare System  
*N. Eya, G. Oguntala, and B. A. Mohammed*

Towards a fast off-line static malware analysis framework  
*Macdonald Chikapa and Anitta Patience Namanya*

Understanding Awareness of Cyber Security Threat Among IT Employees  
*Hamad AL-Mohannadi, Irfan Awan, Jassim Al Hamar, Yousef Al Hamar, Mohammad Shah, Ahmad Musa*

Biometric of Intent: A New Approach Identifying Potential Threat in Highly Secured Facilities  
*Jassim Al Hamar, Joëlle Chamieh, Hamad AL-Mohannadi, Mariam Al Hamar, Ahmad Al-Mutlaq and Ahmad Musa*

Malware Propagation Modelling in Peer-to-Peer Networks: A Review  
*Ahmad Sanda Musa, Hamad Almohannadi and Jassim Alhamar*

### **WCG Session: Cloud Gamification**

Session Chair: Gaik-Yee Chan, Multimedia University, Malaysia  
Room: Plaza 6

Gamification's impact on employee engagement: enhancing employee well-being with a cloud based gamified team-building application  
*Szabina Fodor and Balázs Barna*

Battling the fear of public speaking: Designing software as a service solution for a virtual reality therapy

*Justas Salkevicius and Lukas Navickas*

On the Understanding of Gamification in Blockchain Systems

*Reza M. Parizi and Ali Dehghantanha*

A Cloud-based Service for Gamification of eGuides

*Jakub Swacha and Artur Kulpa*

19:30-21:30

Reception Party

## **TUESDAY 7 AUGUST 2018**

**09:00-10:30**

**Plenary Session: Keynote II**

From the Internet of Things to the Social Innovation and the Economy of Data

*Prof. Luis Muñoz, University of Cantabria, Spain*

Session Chair: Marisa Catalan, i2Cat Foundation, Spain

Room: Barcelona A

**10:30-11:00**

**Coffee Break**

**11:00-12:30**

**Parallel Sessions**

### **FiCloud Session 5: IoT Services and Applications I**

Session Chair: Jonny Karlsson, Arcada University of Applied Sciences, Finland

Room: Barcelona A

An Explication of Acceptability of Wearable Devices in Context of Bangladesh: A User Study

*Arnab Debnath, Khadija Tul Kobra, Proteeti Prova Rawshan, Manisha Paramita and Muhammad Nazrul Islam*

Design and Realization of Alzheimer's Artificial Intelligence Technologies (AAIT) System

*Anna Zhang, Ker-Jiun Wang and Zhi-Hong Mao*

IoT for smart buildings - long awaited revolution or lean evolution

*Marcin Bajer*

Internet of things (IoT) applied to an urban garden

*Gabriela Carrion, Monica Huerta and Boris Barzallo*

### **MobiWis Session 3: Web and Cloud Services**

Session Chair: Tor-Morten Groenli, Westerdals Oslo ACT, Norway

Room: Plaza 1

Analysis of the Use of System Resources for Cloud Data Security

*Josef Horalek and Vladimir Sobeslav*

Towards the Cloud solutions in aspects of Distributed Business Services

*Aneta Poniszewska-Maranda, Bartosz Ignaczewski and Erich Markl*

Web service composition on smartphones: The challenges and a survey of solutions

*Gebremariam Mesfin, Gheorghita Ghinea, Tor-Morten Grønli and Muhammad Younas*

Server-Based Indoor Location Detection System  
*Osman Kerem Perente and Tacha Serif*

### **Innovate-Data Session 1: Big Data Processing and Applications**

Session Chair: Pino Caballero-Gil, University of La Laguna, Spain

Room: Plaza 6

Semantic Data Ingestion for Intelligent, Value-Driven Big Data Analytics  
*Jeremy Debattista, Judie Attard and Rob Brennan*

Towards Making Distributed RDF Processing FLINKer  
*Amr Azzam, Sabrina Kirrane and Axel Polleres*

A Cognitive Agent for Mining Bugs Reports, Feature Suggestions and Sentiment in a Mobile Application Store  
*Sergio Munoz, Oscar Araque, Antonio F. Llamas and Carlos A. Iglesias*

A microservices-based platform for efficiently managing Oceanographic Data  
*Antonino Galletta, Lorenzo Carnevale, Alina Buzachis, Antonio Celesti and Massimo Villari*

12:30-13:30

Lunch

13.30-15:00

Parallel Sessions

### **FiCloud Session 6: IoT Services and Applications II**

Session Chair: Matteo Nardelli, University of Rome Tor Vergata, Italy

Room: Barcelona A

Performance Evaluation of IEEE 802.15.6 Channel Access Procedure in WBAN

*Neji Kouka, Tarek Guesmi and Ouajdi Korbaa*

A Self-organized Framework for Insurance Based on Internet of Things and Blockchain

*Monireh Vahdati, Kamran Gholizadeh Hamlabadi, Ali Mohammad Saghiri and Hassan Rashidi*

IoT Device Lifecycle – a Generic Model and a use case for Cellular Mobile Networks Gabor Soos

*Daniel Kozma, Ferenc Nandor Janky and Pal Varga*

Complex Event Recognition Notification Methodology for Uncertain IoT Systems Based on Micro-Service Architecture  
*Vrbaski M., Bolic M. and Majumdar S.*

#### **MobiWis Session 4: Web and Mobile Applications**

Session Chair: Aneta Poniszewska-Marańda, Lodz University of Technology, Poland

Room: Plaza 1

Analysis of Technical Devices Relevance for Remote Readings of Electric Meters

*Josef Horalek and Vladimir Sobeslav*

Smart Tourism Platform based on Microservice Architecture and Recommender Services

*Laura Martínez Garcia, Silvana Aciar, Raynel Mendoza, Juan José Puello*

Autism Sohayika: A Web Portal to Provide Services to Autistic Children  
*Muhammad Nazrul Islam, Muimmah Kabir, Jakia Sultana, Chowdhury Nawrin Ferdous, Afsana Zaman, Ummey Habiba, Priyanka Kundu, and Iffat Tamanna*

Improving Driver Behavior Using Gamification

*Simge Helvaci, Aras Senova, Gorkem Kar and Sezer Goren*

Transformation of Human Labour from Stone Age to Information Age

*Michal Beno*

#### **Innovate-Data Session 2: Big Data Mining and Analytics**

Session Chair: Rachid Benlamri, Lakehead University, Canada

Room: Plaza 6

A Comparative Evaluation of Big Data Frameworks for Graph Processing

*Marc Kaepke and Olaf Zukunft*

Application of Data Mining Techniques to Predict the Length of Stay of Hospitalized Patients with Diabetes

*Ayman Alahmar, Emad A. Mohammed and Rachid Benlamri*

Towards Hybrid Energy Consumption Prediction in Smart Grids with Machine Learning

*Shailendra Singh, Abdulsalam Yassine and Rachid Benlamri*

Survival Analysis within Stack Overflow: Python and R

*Laurel Lord, John Sell, Feyzi Bagirov and Mark Newman*

15:00-15:30

Coffee Break

**FiCloud Session 7: Cloud and IoT Systems**

Session Chair: Martina Marjanovic, University of Zagreb, Croatia

Room: Barcelona A

Smart Winter Service Platform and Route Planning Algorithm

*Perin Unal, Yunuscan Kocak and Yunus Donmez*

Retransmission Policies for Efficient Communication in IoT Applications

*Imtiaz A. Halepoto, Umair A. Khan and Adnan A. Arain*

Future of IoTSP – IT and OT integration

*Piotr Lipnicki, Daniel Lewandowski, Diego Pareschi, Enrico Ragaini and Waldemar Pakos*

An Evaluation of Optimisation Approaches in Cloud of Things Resource Trading

*Ahmed Salim Al Rawahi, Kevin Lee, Jon Robinson and Ahmad Lotfi*

PrIoT: Prototyping the Internet of Things

*Nahit Pawar, Thomas Bourgeau and Hakima Chaouchi*

**MobiApps Session 1: Mobile Applications I**

Session Chair: Wael Mohamed Elmedany, University of Bahrain, Bahrain

Room: Plaza 1

User Trajectory Extraction Based on WiFi Scanning

*Maros Cavojsky, Marek Uhlar, Marian Ivanis, Martin Molnar and Martin Drozda*

Developing a Mobile Application and Six Sigma for Health Awareness Improvement Regarding Diabetic Students in Kuwait

*Walid Smew, Suat Kasap and Rawan Al-Shatti*

Embedded Fatigue Detection using Convolutional Neural Networks with Mobile Integration

*Mohammed Ghazal, Yasmine Abu Haeyeh, Abdelrahman Abed, and Sara Ghazal*

Design and Implementation of a Mobile Device for Blood Glucose Level Assessment

*Mohammed Ghazal, Marah Alhalabi, Mansour Chabnari, Linda Ghazal, and Luay Fraiwan*

**Innovate-Data Session 3: Big Data Security, Privacy and Trust**

Session Chair: Olaf Zukunft, HAW Hamburg, Germany

Room: Plaza 6

Secure Indoor Location For Airport Environments

*Ivan Santos-Gonzalez, Alexandra Rivero-Garcia and Pino Caballero-Gil*

Fuzzy Logic System for Identity Theft Detection in Social Networks

*Jose A. Concepcion-Sanchez, Jezabel Molina-Gil, Pino Caballero-Gil, Ivan Santos-Gonzalez*

Authentication and Encryption for a Robotic AdHoc Network using Identity-Based Cryptography

*Jonay Suarez-Armas, Candido Caballero-Gil, Alexandra Rivero-Garcia and Pino Caballero-Gil*

17:00-18:30

Parallel Sessions

### **FiCloud Session 8: Data and Knowledge Management**

Session Chair: Marwan Hassani, Eindhoven University of Technology, Netherlands

Room: Barcelona A

Analyzing Customer Journey with Process Mining: from Discovery to Recommendations

*Alessandro Terragni and Marwan Hassani*

Efficient Point-based Pattern Search in 3D Motion Capture Databases

*Christian Beecks, and Alexander Grass*

Efficient Data Prediction, Reconstruction and Estimation in Indoor IoT Networks

*Jyotirmoy Karjee, Hemant Kumar Rath and Arpan Pal*

Smartphones as Alternative Cloud Computing Engines: Benefits and Trade-offs

*Brennan Schaffner, Jason Sawin and Joseph M. Myre*

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

Session Chair: Mohammed Ghazal, Abu Dhabi University, UAE

Room: Plaza 1

Cyber Security Challenges of Deploying IoT in Smart Cities for Healthcare Applications

*Sara Alromaihi, Wael Elmedany, and Chitra Balakrishna*

Mobile Microscopic device to detect parasitical & cell-related diseases using Machine Learning

*Aishah Khan, Ashraf Khali and Hassan Hajjdiab*

A Food Wastage Reduction Mobile Application

*Ayesha Anzer, Hadeel A. Tabaza, Wedad Ahmed and Hassan Hajjdiab*

**BigR&I Session 1: Big Data Research and Innovation I**

Session Chair: Marcin Bajer, ABB, Poland

Room: Plaza 6

**Invited Talk:** Secure Data Science: Integrating Cyber Security and Data Science

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

19:30-21:30

Banquet (Dinner)



## **WEDNESDAY 8 AUGUST 2018**

09:00-10:30

Parallel Sessions

### **FiCloud Session 9: Networking and Communication Protocols**

Session Chair: Jyotirmoy Karjee, Tata Consultancy Services, India

Room: Plaza 1

Analysis and Comparison of Live Virtual Machine Migration Methods  
*Mohammad A. Altafat, Anjali Agarwal, Nishith Goel and Marzia Zaman*

Linear and Logistic Regression Based Monitoring for Resource Management  
in Cloud Networks

*Mustafa Daraghme, Suhib Bani Melhem, Anjali Agarwal, Nishith Goel and  
Marzia Zaman*

UAV-assisted Cluster Head Election for AUAV-based Wireless Sensor Network  
*Gicheol Wang, Byoung-Sun Lee and Jae Young Ahn*

An Enhanced Control Overhead Messages Reduction Algorithm in VANET  
*Ahmad Abuashour and Michel Kadoch*

Evaluation of New Dynamic Time Division Multiplexing Protocol for Real-Time  
Traffic over Converged Networks

*Dalia El-Banna, Peter Bull and Yonghao Wang*

### **FiCloud Session 10: Smart Environment**

Session Chair: Ron Austin, Birmingham City University, United Kingdom

Room: Plaza 6

A Framework for User Routine Discovery in Smart Homes

*Prakhar Shukla, Parnab Kumar Chanda, Ramnath Jayachandran, Ashok  
Subash*

HMM-based Indoor Localization using Smart Watches'BLE Signals

*Donghee Han, Hyungtay Rho and Sejoon Lim*

Creating smart environments: Analysis of improving security on smart  
homes

*Ivan Del Pozo and Denise Cangrejo*

IoT Software Infrastructure for Remote Monitoring of Patients with Chronic  
Metabolic Disorders

*Edoardo Patti, Maria Donatelli, Enrico Macii and Andrea Acquaviva*

A Distributed Sensor Network for Monitoring Noise Level and Noise Sources  
in Urban Environments

*Jakob Abeßer, Robert Grafe, Christian Kuhn, Marco Gotze and Stephanie Kuhnlenz*

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

Session Chair: Samia Bouzefrane, Cnam, France

Room: Plaza 7

Energy-Efficient Algorithm for Load Balancing and VMs Reassignment in Data  
*Nabila Djennane, Rachida Aoudjit and Samia Bouzefrane*

Energy-Scalable Montgomery-Curve ECDH Key Exchange for ARM Cortex-M3  
Microcontrollers

*Christian Franck, Johann Großschadl, Yann Le Corre and Cyrille Lenou Tago*

Energy-efficient hardware caching decision using Fuzzy Logic in Mobile Edge  
Computing

*Sarra Mehame, Khaled Slimani, Samia Bouzefrane and Mehammed Daoui*

A Down-to-earth Integration of Named Data Networking in the Real-world  
IoT

*Amar Abane, Paul Muhlethaler, Mehammed Daoui and Hossam Afifi*

10:30-11:00

Coffee Break

11:00-12:30

Parallel Sessions

**FiCloud Session 11: Cloud, Fog and Edge Computing I**

Session Chair: Piotr Lipnicki, ABB, Corporate Research Center, Poland

Room: Plaza 1

Panoptic, Privacy over Edge-Clouds

*Tadeu Freitas, Joao Rodrigues, Diogo Bogas, Miguel Coimbra and Rolando Martins*

PASHE: Privacy Aware Scheduling in a Heterogeneous Fog Environment

*Kaneez Fizza, Nitin Auluck, Omer Rana and Luiz Bittencourt*

Challenges facing the industrial implementation of Fog Computing

*Bouzarkouna Imen, Sahnoun M'hammed, Sghaier Nouha, Baudry David and Gout Christian*

On the application of Social Internet of Things with Fog Computing: A new  
Paradigm for Traffic Information Sharing System

*Van L. Tran, Anik Islam, Jeevan Kharel and Soo Y. Shin*

Vertical Workflows: Service Orchestration Across Cloud & Edge Resources

*Omer Rana, Manjerhussain Shaikh, Muhammad Ali, Ashiq Anjum and Luiz Bittencourt*

### **FiCloud Session 12: Cloud, Fog and Edge Computing II**

Session Chair: Luiz F. Bittencourt, University of Campinas, Brazil  
Room: Plaza 6

A Rank Scheduling Mechanism for Fog environments

*David Perez Abreu, Karima Velasquez, Marcio R. M. Assis, Luiz Bittencourt, Marilia Curado, Edmundo Monteiro and Edmundo Madeira*

An Intelligent Edge Computing based Semantic Gateway for Healthcare Systems Interoperability and Collaboration

*Tshiamo Sigwele, Yim Fun Hu, Muhammad Ali, Jiachen Hou, Misfa Susanto and Helmy Fitriawan*

On the Influence of Fog Colonies Partitioning in Fog Application Makespan

*Carlos Guerrero, Isaac Lera and Carlos Juiz*

Virtualizing the Edge: Needs, Opportunities and Trends

*Eva Marín-Tordera , Beatriz Otero, Xavi Masip-Bruin and Eva Rodriguez*

### **AWMA/PMECT/DS4IDS Session:**

Session Chair: Khaled Khankan, Taibah University, Saudi Arabia  
Room: Plaza 7

Real Time Adaptive Approach for Image Processing Using Mobile Nodes

*Ahmed Darweesh, Ahmed Abouelfarag and Rania Kadry*

A mobile data transfer in energy-efficient intelligent systems for wastewater treatment of thermal power plants

*Samal Abdreshova, Tatyana Golubeva, Sergey Konshin, Shabden Bahtaev, Birlesbek Aliyarov, and Viktor Tailakov*

Proposal of Analysis and Evaluation Method of Urban Area Space Utilizing of Wheelchair Probe Information

*Yuriko Oda, Fumihito Ito, Ory Yoshifuji, Yoichi Oda, Setsuko Kanai, Zong Shichun and Hiroto Ohuchi*

Web Intelligence in Higher Education: A Study on the usage of Business Intelligence techniques in Education

*Adriano Maia, Filipe Portela and Manuel Filipe Santos*

### **BigR&I Session 2: Big Data Research and Innovation II**

Session Chair: Natalia Miloslavskaya, National Research Nuclear University MEPhI, Russia  
Room: Plaza 8

Standardization of Ensuring Information Security for Big Data Technologies  
*Natalia Miloslavskaya, Andrey Nikiforov and Vladimir Budzko*

Adaptive Control of Apache Spark's Data Caching Mechanism Based on Workload Characteristics  
*Hideo Inagak, Tomoyuki Fujii, Ryota Kawashima and Hiroshi Matsuo*

Applying Big Data Technologies to Detect Cases of Money Laundering and Counter Financing of Terrorism  
*Kirill Plaksiy, Andrey Nikiforov and Natalia Miloslavskaya*

12:30-13:30

Lunch

13:30-15:00

Parallel Sessions

### **FiCloud Session 13: Cloud Federation and Virtualization**

Session Chair: Xavier Masip-Bruin, Technical University of Catalonia, Spain  
Room: Plaza 1

Modelling Cloud Federation: A Fair Profit Distribution Strategy Using the Shapley Value  
*Kun Ma, Antoine Bagula, Hope Mauwa and Antonio Celesti*

Sensing as a Service Middleware Architecture  
*Muhamed Alarbi and Hanan Lutfiyya*

A NoSQL Graph Approach to Manage IoTaaS in Cloud/Edge Environments  
*Antonio Celesti, Alina Buzachis and Antonino Galletta*

Knee/Elbow point estimation through thresholding  
*Mário Antunes, Joana Ribeiro, Diogo Gomes and Rui L. Aguiar*

### **FiCloud Session 14: Security, Privacy and Trust II**

Session Chair: Khaled Khan, Qatar University, Qatar  
Room: Plaza 6

The World of Malware: An Overview  
*Anitta Patience Namanya, Andrea Cullen, Irfan Awan and Jules Pagna Disso*

Resource Scalability as Preventive and Remedial Measures for Cloud Service Violation  
*Gaik-Yee Chan, Hassan Mahmood Khan and Fang-Fang Chua*

An approach to detecting distributed denial of service attacks in software defined networks  
*Abimbola Sangodoyin, Babagana Modu, Irfan Awan and Jules Pagna Disso*

Using Sparse Matrices to Prevent Information Leakage in Cloud Computing  
*Khaled M. Khan, Mahboob Shaheen and Yongge Wang*

**BigR&I Session 3: Big Data Research and Innovation III**

Session Chair: Natalia Miloslavskaya, National Research Nuclear University  
MEPhI, Russia

Room: Plaza 8

A Proxy-based Query Aggregation Method for Distributed Key-Value Stores  
*Daichi Kawanami, Masanari Kamoshita, Ryota Kawashima and Hiroshi Matsuo*

Predictive repair and support of engineering systems based on distributed  
data processing model within an IoT concept  
*Vasiliy S. Kireev, Stanislav A. Filippov, Anna I. Guseva, Pyotr V. Bochkaryov,  
Igor A. Kuznetsov, Vladimir Migalin and Sergey S. Filin*

Cloud computing in housing and utility services monitoring systems  
*Vasiliy S. Kireev, Stanislav A. Filippov, Anna I. Guseva, Pyotr V. Bochkaryov,  
Igor A. Kuznetsov and Vladimir Migali*

\*\*\*\*\* PROGRAM END \*\*\*\*\*