

2015 IEEE 2nd World Forum on Internet of Things (WF-IoT 2015)

**Milan, Italy
14-16 December 2015**



**IEEE Catalog Number: CFP1518V-POD
ISBN: 978-1-5090-0367-9**

**Copyright © 2015 by the Institute of Electrical and Electronic Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1518V-POD
ISBN (Print-On-Demand):	978-1-5090-0367-9
ISBN (Online):	978-1-5090-0366-2

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Technical Sessions - Monday, December 14

11:30 - 13:10

Automotive IoT Workshop

Room: *Crociera giurisprudenza*

A Freeway Travel Time Predicting Method Based on IoV 1

Daxin Tian (Beihang University, P.R. China)

Chao Liu (Beihang University, P.R. China)

Yunpeng Wang (Beihang University, P.R. China)

Guohui Zhang (School of Information Engineering, P.R. China)

Haiying Xia (Research Institute of Highway Ministry Transport, P.R. China)

Cyber Organic Systems Network - a New Network Architecture for Future Vehicles 6

Daniel Adam (BMW Research and Technology, Germany)

Thomas Gehrsitz (Technische Universität München, Germany)

Uwe Baumgarten (Technische Universität München, Germany)

A Prototype Bridge Between Automotive and the IoT 12

Michele Carignani (Scuola Superiore Sant'Anna, Italy)

Silvia Ferrini (Autorità Portuale di Livorno, Italy)

Matteo Petracca (Consorzio Nazionale Interuniversitario per le Telecomunicazioni, Italy)

Mariano Falcitelli (Consorzio Nazionale Interuniversitario per le Telecomunicazioni, Italy)

Paolo Pagano (Consorzio Nazionale Interuniversitario per le Telecomunicazioni, Italy)

Park Here! A Smart Parking System Based on Smartphones' Embedded Sensors and Short Range Communication Technologies 18

Rosario Salpietro (University of Bologna, Italy)

Luca Bedogni (University of Bologna, Italy)

Marco Di Felice (University of Bologna, Italy)

Luciano Bononi (University of Bologna, Italy)

An Implementation of the 802.1AE MAC Security Standard for In-Car Networks 24

Berardino Carnevale (University of Pisa, Italy)

Francesco Falaschi (University of Pisa, Italy)

Luca Crocetti (University of Pisa, Italy)

Harman Hunjan (Renesas Electronics Europe Ltd, United Kingdom)

Samson Bisase (Renesas Electronics Europe Ltd, United Kingdom)

Luca Fanucci (University of Pisa, Italy)

11:30 - 13:30

Session S01: Web of Things

Room: *Malliani*

A Collaboration-focused Taxonomy of the Internet of Things 29

Ozgur Eris (The MITRE Corporation, USA)

Jill Drury (The MITRE Corporation, USA)

Deborah Ercolini (The MITRE Corporation, USA)

Taking the SLoT Down From the Cloud: Integrating the Social Internet of Things in the INPUT Architecture	35
<i>Ivan Farris (University Mediterranea of Reggio Calabria, Italy)</i>	
<i>Roberto Girau (University of Cagliari, Italy)</i>	
<i>Michele Nitti (University of Cagliari, Italy)</i>	
<i>Luigi Atzori (University of Cagliari, Italy)</i>	
<i>Roberto Bruschi (Research Unit of Genoa, Italy)</i>	
<i>Antonio Iera (University Mediterranea of Reggio Calabria, Italy)</i>	
<i>Giacomo Morabito (University of Catania, Italy)</i>	
Automated Deployment of IoT Services Based on Semantic Description.....	40
<i>Kangho Hur (Yonsei University / Samsung Electronics, Korea)</i>	
<i>Xiongnan Jin (Yonsei University, Korea)</i>	
<i>Kyong-Ho Lee (Yonsei University, Korea)</i>	
Web of Topics: An IoT-aware Model-driven Designing Approach.....	46
<i>Luca Mainetti (University of Salento, Italy)</i>	
<i>Luigi Manco (University of Salento, Italy)</i>	
<i>Luigi Patrono (University of Salento, Italy)</i>	
<i>Ilaria Sergi (University of Salento, Italy)</i>	
<i>Roberto Vergallo (University of Salento, Italy)</i>	
Developing Complex Services in an IoT Ecosystem.....	52
<i>Charilaos Akasiadis (N. C. S. R. Demokritos, Greece)</i>	
<i>Grigorios Tzortzis (N. C. S. R. Demokritos, Greece)</i>	
<i>Evangelos Spyrou (N. C. S. R. Demokritos, Greece)</i>	
<i>Constantine Spyropoulos (N. C. S. R. Demokritos, Greece)</i>	
Creating People-Aware IoT Applications by Combining Design Thinking and User-Centered Design Methods	57
<i>Milene Fauquex (University of Applied Sciences Western Switzerland, HES-SO Valais - Wallis, Switzerland)</i>	
<i>Sidhant Goyal (Indian Institute of Technology, India)</i>	
<i>Florian Evequoz (University of Applied Sciences Western Switzerland, HES-SO Valais - Wallis, Switzerland)</i>	
<i>Yann Bocchi (University of Applied Sciences Western Switzerland, HES-SO Valais - Wallis, Switzerland)</i>	
11:30 - 13:30	
Session S02: IoT Application	
Room: 113	
CoAPthon: Easy Development of CoAP-based IoT Applications with Python.....	63
<i>Giacomo Tanganelli (University of Pisa, Italy)</i>	
<i>Carlo Vallati (University of Pisa, Italy)</i>	
<i>Enzo Mingozzi (University of Pisa, Italy)</i>	
Architecture of an IoT-based System for Football Supervision (IoT Football)	69
<i>Mohammed Ikram (University of Technology Sydney, Australia)</i>	
<i>Farookh Khadeer Hussain (University of Technology Sydney, Australia)</i>	
<i>Mohammad Alshehri (University of Technology, Sydney, Australia)</i>	
On Acquisition of High-Quality Video From Unmanned Vehicles	75
<i>Sven Ubik (CESNET, Czech Republic)</i>	
<i>Jiri Melnikov (CESNET, Czech Republic)</i>	
<i>Zdeněk Trávníček (Czech Technical University/CESNET, Czech Republic)</i>	

Agent-based Decentralised Data-acquisition and Time-synchronisation in Critical Healthcare Applications.....	81
<i>Mo Haghighi (University of Bristol, United Kingdom)</i>	
<i>Przemyslaw Woznowski (University of Bristol, United Kingdom)</i>	
<i>Ni Zhu (University of Bristol, United Kingdom)</i>	
<i>Evgeny Tsimbalo (University of Bristol, United Kingdom)</i>	
<i>Sion Hannuna (University of Bristol, United Kingdom)</i>	
<i>Alison Burrows (University of Bristol, United Kingdom)</i>	
<i>Bo Tan (University of Bristol, United Kingdom)</i>	
<i>Lili Tao (University of Bristol, United Kingdom)</i>	
<i>Robert J Piechocki (University of Bristol, United Kingdom)</i>	
Wristband Vital: A Wearable Multi-Sensor Microsystem for Real-time Assistance Via Low-Power Bluetooth Link	87
<i>Kyle Braam (Leia Inc., USA)</i>	
<i>Tsung-Ching Huang (Hewlett-Packard Laboratories, USA)</i>	
<i>Chin-Hui Chen (Hewlett-Packard Laboratories, USA)</i>	
<i>Eric Montgomery (Hewlett-Packard Laboratories, USA)</i>	
<i>Sonny Vo (Leia Inc., USA)</i>	
<i>Raymond Beausoleil (Hewlett-Packard Laboratories, USA)</i>	
A Security-aware Safety Framework for IoT-integrated Bikes	92
<i>Mohammad Abdur Razzaque (Trinity College, Ireland)</i>	
<i>Siobhan Clarke (Trinity College Dublin, Ireland)</i>	
11:30 - 13:30	
Session S03: IoT Enabling Technologies	
Room: Crociera lettere	
On Realizing Distributed Topology Control in Low-power IoT Platforms.....	98
<i>Phivos Phivou (University of Crete, Greece)</i>	
<i>Athanasia Panousopoulou (FORTH-ICS, Greece)</i>	
<i>Panagiotis Tsakalides (FORTH-ICS and University of Crete, Greece)</i>	
Hypergraph-based Overlay Network Model for the Internet of Things	104
<i>Jooik Jung (Yonsei University, Korea)</i>	
<i>Sejin Chun (Yonsei University, Korea)</i>	
<i>Kyong-Ho Lee (Yonsei University, Korea)</i>	
Fairness for CoAP/Observe Based Wireless Sensor Networks with Aggregation Deployment.....	110
<i>Noelia Correia (University of Algarve, Portugal)</i>	
<i>Gabriela Schütz (University of Algarve, Portugal)</i>	
<i>Alvaro Barradas (University of Algarve, Portugal)</i>	
Distributed Adaptive Scheme for Reliable Data Collection in Fault Tolerant WSNs	116
<i>Georgios Z. Papadopoulos (University of Strasbourg, France)</i>	
<i>Nikolaos Pappas (Linköping University, Sweden)</i>	
<i>Antoine Gallais (University of Strasbourg, France)</i>	
<i>Thomas Noel (University of Strasbourg, France)</i>	
<i>Vangelis Angelakis (Linköping University, Sweden)</i>	

Requirement-Based Prioritization System in Multi-user IoT 122

Sunyanan Choochotkaew (Osaka University, Japan)
Hirozumi Yamaguchi (Osaka University, Japan)
Teruo Higashino (Osaka University, Japan)
Megumi Shibuya (KDDI R&D Laboratories Inc., Japan)

Antennas and Photovoltaic Panels: Toward a Green Internet of Things 128

Roberto Caso (University of Pisa, Italy)
Rosario G. Garroppo (University of Pisa, Italy)
Stefano Giordano (University of Pisa, Italy)
Giuliano Manara (University of Pisa, Italy)
Andrea Michel (University of Pisa, Italy)
Paolo Nepa (University of Pisa, Italy)
Luca Tavanti (University of Pisa, Italy)
Marco Magnarosa (CUBIT, Italy)
Guido Nenna (CUBIT, Italy)

14:30 - 15:30

Automotive IoT Workshop

Room: *Crociera giurisprudenza*

A Survey of In-vehicle Communications: Requirements, Solutions and Opportunities in IoT..... 132

Yinjia Huo (University of British Columbia, Canada)
Wei Tu (Wuhan University, P.R. China)
Zhengguo Sheng (University of Sussex, United Kingdom)
Victor C.M. Leung (University of British Columbia, Canada)

CIS: Community-Based Information Sharing Mechanism for Automotive IoT 138

Qiang Liu (National University of Defense Technology, P.R. China)
Chengzhang Zhu (National University of Defense Technology, P.R. China)
Xiping Hu (University of British Colombia, Canada)
Wentao Zhao (National University of Defense Technology, P.R. China)

On the Potential of Network Coding for Cooperative Awareness in Vehicular Networks..... 143

Miguel Sepulcre (Universidad Miguel Hernandez de Elche, Spain)
Javier Gozalvez (Universidad Miguel Hernandez de Elche, Spain)
Jose Ramon Gisbert (Universidad Miguel Hernandez de Elche, Spain)

14:30 - 16:30

Session S04: IoT and M2M Services

Room: *Malliani*

mm-Wave Integrated Wireless Transceivers: Enabling Technology for High Bandwidth Connections in IoT 149

Sergio Saponara (University of Pisa, Italy)
Bruno Neri (University of Pisa, Italy)

A Study on M2M Traffic and Its Impact on Cellular Networks..... 154

Marco Centenaro (University of Padova, Italy)
Lorenzo Vangelista (University of Padova, Italy)

Identification and Analysis of Charging Factors in M2M Communications	160
<i>Fuchun Joseph Lin (National Chiao Tung University, Taiwan)</i>	
<i>Wandu Tsai (National Chiao Tung University, Taiwan)</i>	
<i>Eduardo Cerritos (National ChiaoTung University, Taiwan)</i>	
<i>Bo-Ting Lin (Chunghwa Telecom Laboratories, Taiwan)</i>	
<i>Wan-Hsun Hu (Chunghwa Telecom Laboratories, Taiwan)</i>	
Analysis of the FM Radio Spectrum for Internet of Things Opportunistic Access Via Cognitive Radio	166
<i>Derek Otermat (Florida Institute of Technology, USA)</i>	
<i>Ivica N. Kostanic (Florida Institute of Technology, USA)</i>	
<i>Carlos Otero (Florida Institute of Technology, USA)</i>	
Over-the-Air Remote Management and Control of IP-based M2M Devices	172
<i>Christian Makaya (IBM T. J. Watson Research Center, USA)</i>	
<i>Ming-Yee Lai (Connectilife, USA)</i>	
<i>Fuchun Joseph Lin (National Chiao Tung University, Taiwan)</i>	
On the Use of the Millimeter Wave and Low Terahertz Bands for Internet of Things.....	177
<i>Turker Yilmaz (Koc University, Turkey)</i>	
<i>Ozgur B. Akan (Koc University, Turkey)</i>	

14:30 - 16:30

Session S05: Performance on IoT Deployments

Room: 113

Low Throughput Networks for the IoT: Lessons Learned From Industrial Implementations	181
<i>George Margelis (University of Bristol, United Kingdom)</i>	
<i>Dritan Kaleshi (University of Bristol, United Kingdom)</i>	
<i>Robert J Piechocki (University of Bristol, United Kingdom)</i>	
<i>Paul Thomas (University of Bristol, United Kingdom)</i>	
Smart Pricing for Service Differentiation and Load Control of the LTE-A IoT System.....	187
<i>Mehmet Koseoglu (Hacettepe University, Turkey)</i>	
Extending LTE Coverage for Machine Type Communications	193
<i>Rapeepat Ratasuk (Nokia Networks, USA)</i>	
<i>Nitin Mangalvedhe (Nokia Networks, USA)</i>	
<i>Amitava Ghosh (Nokia Networks, USA)</i>	
Performance Analysis of Hybrid Multiple Radio IoT Architecture for Ubiquitous Connectivity	198
<i>Malyala Pavana (IIT Hyderabad, India)</i>	
<i>Ravi Sai Kiran (IIT Hyderabad, India)</i>	
<i>Yeginati Siva Krishna (IIT Hyderabad, India)</i>	
<i>Pachamuthu Rajalakshmi (IIT Hyderabad, India)</i>	
<i>Jagadish Bandaru (IIT Hyderabad, India)</i>	
<i>Ajay Yadav (IIT Hyderabad, India)</i>	
<i>Mohammed Abdullah Zubair (IIT Hyderabad, India)</i>	
<i>Uday B Desai (IIT Hyderabad, India)</i>	
Low-Power V2M Communication System with Fast Network Association Capability	204
<i>Keisuke Hirose (The University of Electro-Communications, Japan)</i>	
<i>Koji Ishibashi (The University of Electro-Communications, Japan)</i>	
<i>Yasushi Yamao (The University of Electro-Communications, Japan)</i>	
<i>Yasuhiro Hirayama (DENSO Corporation, Japan)</i>	
<i>Manabu Sawada (DENSO Corporation, Japan)</i>	

Optimizing the Handover Delay in Mobile WSNs.....	210
<i>Georgios Z. Papadopoulos (University of Strasbourg, France)</i>	
<i>Vasileios Kotsiou (Hellenic Open University, Greece)</i>	
<i>Antoine Gallais (University of Strasbourg, France)</i>	
<i>Periklis Chatzimisios (Alexander TEI of Thessaloniki, Greece)</i>	
<i>Thomas Noel (University of Strasbourg, France)</i>	

14:30 - 16:30

Session S06: Programming Platforms for IoT

Room: *Crociera lettere*

End of Paper Labels: Emerging Smart Labels Toward Internet of Things	216
<i>Jongwoo Sung (Samsung Electro-Mechanics, Korea)</i>	

Internet of Things Gateways Meet Linux Containers: Performance Evaluation and Discussion	222
<i>Alexandr Krylovskiy (Fraunhofer FIT, Germany)</i>	

Device Clustering for Fault Monitoring in Internet of Things Systems	228
<i>Sen Zhou (University of California, Irvine, USA)</i>	
<i>Kwei Jay Lin (University of California, Irvine, USA)</i>	
<i>Chi-Sheng Shih (National Taiwan University, Taiwan)</i>	

Using IoTGolog to Formalize IoT Scenarios	234
<i>Shah Rukh Humayoun (University of Kaiserslautern, Germany)</i>	
<i>Yael Dubinsky (IBM Research – Haifa, Israel)</i>	
<i>Ragaad Altarawneh (University of Kaiserslautern, Germany)</i>	

Changing the Programming Paradigm for the Embedded in the IoT Domain	239
<i>Daniele Mazzei (University of Pisa, Italy)</i>	
<i>Giacomo Baldi (VIPER, Italy)</i>	
<i>Gabriele Montelisciani (University of Pisa, Italy)</i>	
<i>Gualtiero Fantoni (University of Pisa, Italy)</i>	

Virtual Resources for the Internet of Things.....	245
<i>Andrea Azzarà (Scuola Superiore Sant'Anna, Italy)</i>	
<i>Luca Mottola (Politecnico di Milano and SICS Swedish ICT, Italy)</i>	

17:00 - 19:00

Session S07: IoT and Cloud and Web Services

Room: *Malliani*

Models At REST or Modelling RESTful Interfaces for the Internet of Things	251
<i>Christian Prehofer (Fortiss GmbH, Germany)</i>	

Multi-Tenancy in Decentralised IoT.....	256
<i>Sylvain Cherrier (Université Paris-Est, France)</i>	
<i>Zahra Movahedi (Université Paris-Est, France)</i>	
<i>Yacine Ghamri-Doudane (University of La Rochelle, France)</i>	

Automated Mashup of CoAP Services on the Internet of Things 262

Xiongnan Jin (Yonsei University, Korea)
Kangho Hur (Yonsei University / Samsung Electronics, Korea)
Sejin Chun (Yonsei University, Korea)
Minjung Kim (Yonsei University, Korea)
Kyong-Ho Lee (Yonsei University, Korea)

Enabling Mechanisms for Cloud-based Network Virtualization in IoT 268

Giovanni Merlino (Università di Messina and Università di Catania, Italy)
Dario Bruneo (Università di Messina, Italy)
Salvatore Distefano (Università di Messina, Italy and Kazan Federal University, Russia)
Francesco Longo (Università di Messina, Italy)
Antonio Puliafito (Università di Messina, Italy)

A Secure Hybrid Cloud Enabled Architecture for Internet of Things 274

Avani Sharma (Malaviya National Institute of Technology, India)
Tarun Goyal (Government Engineering College, India)
Emmanuel Pilli (Malaviya National Institute of Technology, India)
Arka Mazumdar (Malaviya National Institute of Technology, India)
Mahesh Chandra Govil (Malaviya National Institute of Technology, India)
Ramesh Chandra Joshi (Graphic Era University, India)

Using the MEAN Stack to Implement a RESTful Service for an Internet of Things Application..... 280

Andrew Poulter (University of Southampton, United Kingdom)
Steven Johnston (University of Southampton, United Kingdom)
Simon Cox (University of Southampton, United Kingdom)

17:00 - 19:00

Session S08: Efficient IoT and Energy

Room: 113

Fix It, Don't Bin It! - CRC Error Correction in Bluetooth Low Energy 286

Evgeny Tsimbalo (University of Bristol, United Kingdom)
Xenofon Fafoutis (University of Bristol, United Kingdom)
Robert J Piechocki (University of Bristol, United Kingdom)

Mitigating Packet Loss in Connectionless Bluetooth Low Energy 291

Evgeny Tsimbalo (University of Bristol, United Kingdom)
Xenofon Fafoutis (University of Bristol, United Kingdom)
Evangelos Mellios (University of Bristol, United Kingdom)
Mo Haghighi (University of Bristol, United Kingdom)
Bo Tan (University Of Bristol, United Kingdom)
Geoffrey Hilton (University of Bristol, United Kingdom)
Robert J Piechocki (University of Bristol, United Kingdom)
Ian Craddock (University of Bristol, United Kingdom)

Flexible On-Body Coils for Inductive Power Transfer to IoT Garments and Wearables 297

Paul Worgan (University of Bristol, United Kingdom)
Odysseas Pappas (University of Bristol, United Kingdom)
Themis Omirou (University of Bristol, United Kingdom)
Michael Collett (University of Bristol, United Kingdom)

In-Network Data Processing Architecture for Energy Efficient Wireless Sensor Networks	299
<i>Weiwei He (Loughborough University, United Kingdom)</i>	
<i>Shuang-Hua Yang (Loughborough University, United Kingdom)</i>	
<i>Lili Yang (Loughborough University, United Kingdom)</i>	
<i>Ping Li (Liaoning Shihua University, P.R. China)</i>	
 Energy-efficient Internet of Things Monitoring with Low-Capacity Devices	 305
<i>Rodrigo J Carbajales (International Centre for Theoretical Physics (ICTP), Italy)</i>	
<i>Marco Zennaro (International Centre for Theoretical Physics (ICTP), Italy)</i>	
<i>Felix Freitag (Universitat Politecnica de Catalunya, Spain)</i>	
<i>Ermanno Pietrosemoli (International Centre for Theoretical Physics (ICTP) & Fundacion EsLaRed, Italy)</i>	
 µPnP-Mesh: The Plug-and-Play Mesh Network for the Internet of Things	 311
<i>Nelson Matthys (iMinds-DistriNet, KU Leuven, Belgium)</i>	
<i>Fan Yang (iMinds-DistriNet, KU Leuven, Belgium)</i>	
<i>Wilfried Daniels (iMinds-DistriNet, KU Leuven, Belgium))</i>	
<i>Sam Michiels (iMinds-DistriNet, KU Leuven, Belgium)</i>	
<i>Wouter I Joosen (iMinds-DistriNet, KU Leuven, Belgium)</i>	
<i>Danny Hughes (iMinds-DistriNet, KU Leuven, Belgium)</i>	
<i>Thomas Watteyne (Inria Paris-Rocquencourt, EVA team, France)</i>	
17:00 - 19:00	
Session S09: IoT and Service Management	
Room: Crociera lettere	
Effective Authorization for the Web of Things	316
<i>Simone Cirani (Guglielmo srl, Italy)</i>	
<i>Marco Picone (Guglielmo srl, Italy)</i>	
 Secure Layered Based Architecture for Internet of Things Services	 321
<i>Dhananjay Singh (Hankuk University of Foreign Studies, Korea)</i>	
<i>Gaurav Tripathi (Bharat Electronics Limited, India)</i>	
<i>Antonio J. Jara (University of Applied Sciences Western Switzerland, HES-SO, Switzerland)</i>	
 Predicting Complex Events for Pro-Active IoT Applications	 327
<i>Adnan Akbar (University of Surrey, United Kingdom)</i>	
<i>Francois Carrez (University of Surrey, United Kingdom)</i>	
<i>Klaus Moessner (University of Surrey, United Kingdom)</i>	
<i>Ahmed Zoha (QMIC, Qatar)</i>	
 Event-Based Communication for IoT Networking	 333
<i>Panayiotis Kolios (University of Cyprus, Cyprus)</i>	
<i>Christos Panayiotou (University of Cyprus, Cyprus)</i>	
<i>Georgios Ellinas (University of Cyprus, Cyprus)</i>	
<i>Marios Polycarpou (University of Cyprus, Cyprus)</i>	
 Managing Wireless Sensor Networks Within IoT Ecosystems	 339
<i>Alan McGibney (Cork nstitute of Technology, Ireland)</i>	
<i>Alejandro Esquivia Rodraguez (Cork Institute of Technology, Ireland)</i>	
<i>Susan Rea (Cork Institute of Technology, Ireland)</i>	

SenseSim: An Agent-Based and Discrete Event Simulator for Wireless Sensor Networks and the Internet of Things..... 345

Michał Dyk (Military University of Technology, Poland)
Andrzej Najgebauer (Military University of Technology, Poland)
Dariusz Pierzchala (Military University of Technology, Poland)

17:00 - 19:00

Session S10: IoT and Sensor Modeling

Room: Crociera giurisprudenza

A Clustering-Based Characteristic Model for Unreliable Sensor Network Data 351

Ulf Kulau (Technische Universität Braunschweig, Germany)
Tobias Breuer (Technische Universität Braunschweig, Germany)
Lars C Wolf (Technische Universität Braunschweig, Germany)

An RSSI-based Wall Prediction Model for Residential Floor Map Construction 357

Xenofon Fafoutis (University of Bristol, United Kingdom)
Evangelos Mellios (University of Bristol, United Kingdom)
Niall Twomey (University of Bristol, United Kingdom)
Tom Diethe (University of Bristol, United Kingdom)
Geoffrey Hilton (University of Bristol, United Kingdom)
Robert Piechocki (University of Bristol, United Kingdom)

Active RFID Attached Object Clustering Method Based on RSSI Series for Finding Lost Objects 363

Masaya Tanbo (The University of Electro-Communications, Japan)
Ryoma Nojiri (The University of Electro-Communications, Japan)
Yuusuke Kawakita (The University of Electro-Communications, Japan)
Haruhisa Ichikawa (The University of Electro-Communications, Japan)

Personalized Speech Recognition for Internet of Things 369

Mahnoosh Mehrabani (Interactions LLC, USA)
Srinivas Bangalore (Interactions LLC, USA)
Benjamin Stern (Interactions LLC, USA)

Ship Motion Measurement Using an Inertial Measurement Unit 375

Nana Abankwa (University of Southampton, United Kingdom)
Steven Johnston (University of Southampton, United Kingdom)
Mark Scott (University of Southampton, United Kingdom)
Simon Cox (University of Southampton, United Kingdom)

Hierarchical Algorithm for Daily Activity Recognition Via Smartphone Sensors 381

Gabriel Filios (University of Patras, Greece)
Sotiris E. Nikolettseas (University of Patras, Greece)
Christina Pavlopoulou (University of Patras, Greece)
Maria Rapti (University of Patras, Greece)
Sebastien Ziegler (Mandat International, Switzerland)

Technical Sessions - Tuesday, December 15

11:30 - 13:30

Session S11: IoT Models

Room: *Malliani*

FRASAD: A Framework for Model-driven IoT Application Development..... 387

Xuan Thang Nguyen (University of Kassel, Germany)

Huu Tam Tran (University of Kassel, Germany)

Harun Baraki (University of Kassel, Germany)

Kurt Geihs (University of Kassel, Germany)

An Editable Live ETL System for Ambient Intelligence Environments 393

Marco Mesiti (Università di Milano, Italy)

Stefano Valtolina (Università di Milano, Italy)

Luca Ferrari (Università di Milano, Italy)

Minhson Dao (NICT, Japan)

Koji Zettsu (NICT, Japan)

**Internet of Things and Crowd Sourcing - a Paradigm Change for the Research
on the Internet of Things 395**

Sebastien Ziegler (Mandat International, Switzerland)

Sotiris Nikolettseas (University of Patras, Greece)

Jose Rolim (University of Geneva, Switzerland)

Srdjan Krco (DunavNET, Serbia)

Joao Fernandes (Alexandra Institute, Denmark)

**Affective Internet of Things: Mimicking Human-Like Personality in Designing
Smart-Objects..... 400**

Michael Pieroni (University of Pisa, Italy)

Lorenzo Rizzello (University of Pisa, Italy)

Niccolò Rosini (University of Pisa, Italy)

Gualtiero Fantoni (University of Pisa, Italy)

Daniilo De Rossi (University of Pisa, Italy)

Daniele Mazzei (University of Pisa, Italy)

**Game Theoretic Approach Towards Optimal Multi-tasking and Data-distribution
in IoT..... 406**

Mo Haghighi (University of Bristol, United Kingdom)

Konstantinos Maraslis (University of Bristol, United Kingdom)

Theo Tryfonas (University of Bristol, United Kingdom)

George Oikonomou (University of Bristol, United Kingdom)

Alison Burrows (University of Bristol, United Kingdom)

Pete Woznowski (University of Bristol, United Kingdom)

Rob Piechocki (University of Bristol, United Kingdom)

**Semantic Web Methodologies, Best Practices and Ontology Engineering Applied to Internet of
Things..... 412**

Amelie Gyrard (National University of Ireland, Ireland)

Martin Serrano (National University of Ireland, Ireland)

Ghislain Atemezing (Mondeca, France)

11:30 - 13:30

Session S12: Massive IoT Data: Impact on Security, Privacy and Urban Dynamics in Smart Cities

Rooms: 113, Crociera lettere

Big Data for IoT Services in Smart Cities 418

Victoria Moreno-Cano (University of Murcia, Spain)

Fernando Terroso-Saenz (University of Murcia, Spain)

Antonio Skarmeta Gomez (University of Murcia, Spain)

What the SLoT Needs: a New Caching System or New Friendship

Selection Mechanism? 424

Michele Nitti (University of Cagliari, Italy)

Luigi Atzori (University of Cagliari, Italy)

Privacy Flag - Collective Privacy Protection Scheme Based on Structured Distributed Risk

Assessment 430

Sebastien Ziegler (Mandat International, Switzerland)

Ioannis Chochliouros (Hellenic Telecommunications Organization S.A., Greece)

Towards Human Mobility Extraction Based on Social Media with Complex Event Processing..... 435

Fernando Terroso-Saenz (University of Murcia, Spain)

Mercedes Valdes-Vela (University of Murcia, Spain)

Antonio Skarmeta Gomez (University of Murcia, Spain)

Context Transmission in Personal IoT Through an Extension of the EPC Tag Data Standard 441

Jefferson Cordeiro (Universidade Federal de Minas Gerais, Brazil)

Luiz Vieira (Universidade Federal de Minas Gerais, Brazil)

Antonio Loureiro (Universidade Federal de Minas Gerais, Brazil)

Aspern Smart ICT: Data Analytics and Privacy Challenges in a Smart City 447

Deepak Dhungana (Siemens AG, Austria)

Gerhard Engelbrecht (Siemens AG, Austria)

Josiane Xavier Parreira (Siemens AG, Austria)

Andreas Schuster (Aspern Smart City Research Gmbh & Co KG (ASCR), Austria)

Danilo Valerio (Siemens AG, Austria)

16:00 - 17:30

Session S13: IoT Experimental Results (I)

Room: Malliani

Experimental Evaluation of Alternative Congestion Control Algorithms

for Constrained Application Protocol (CoAP) 453

Ilpo Järvinen (University of Helsinki, Finland)

Laila Daniel (University of Helsinki, Finland)

Markku Kojo (University of Helsinki, Finland)

FIT IoT-LAB: A Large Scale Open Experimental IoT Testbed 459

Cedric Adjih (INRIA, France)
Emmanuel Baccelli (INRIA, France)
Eric Fleury (ENS Lyon / INRIA, France)
Gaetan Harter (INRIA, France)
Nathalie Mitton (INRIA, France)
Thomas Noel (University of Strasbourg, France)
Roger Pissard-Gibollet (INRIA, France)
Frederic Saint-Marcel (INRIA, France)
Guillaume Schreiner (University of Strasbourg, France)
Julien Vandaele (INRIA, France)
Thomas Watteyne (INRIA, France)

Improving Utilization and Customer Satisfaction of Parking Space with M2M Communications.. 465

Fuchun Joseph Lin (National Chiao Tung University, Taiwan)
Haoru Chen (National Chiao Tung University, Taiwan)

A Wireless Sensor Network for Monitoring the Structural Health of a Football Stadium..... 471

Deepa Phanish (Georgia Institute of Technology, USA)
Paul Garver (Georgia Institute of Technology, USA)
Ghaith Matalkah (Georgia Institute of Technology, USA)
Tal Landes (Georgia Institute of Technology, USA)
Fu Shen (Georgia Institute of Technology, USA)
Jesse Dumond (Georgia Institute of Technology, USA)
Randal Abler (Georgia Institute of Technology, USA)
Dapeng Zhu (Georgia Institute of Technology, USA)
Xinjun Dong (Georgia Institute of Technology, USA)
Yang Wang (Georgia Institute of Technology, USA)
Edward Coyle (Georgia Institute of Technology, USA)

Impact of Mobility on the IoT MAC Infrastructure: IEEE 802.15.4e TSCH and LLDN Platform..... 478

Yaarob Al-Nidawi (University of Leeds, United Kingdom)
Harith Yahya (University of Leeds, United Kingdom)
Andrew H. Kemp (University of Leeds, United Kingdom)

16:00 - 17:30

Session S14: Military Applications of IoT

Room: 113

Integrity Attestation in Military IoT 484

Anders Fongen (Norwegian Defence Research Establishment, Norway)
Federico Mancini (Norwegian Defence Research Establishment, Norway)

A Trust-Based Situation Awareness System for Military Applications of the Internet of Things 490

Joanna Głowacka (Military University of Technology, Poland)
Jarosław Krygier (Military University of Technology, Poland)
Marek Amanowicz (Military University of Technology, Poland)

Fault-tolerant Techniques for the Internet of Military Things..... 496

Zbigniew Zielinski (Military University of Technology, Poland)
Jan Chudzikiewicz (Military University of Technology, Poland)
Janusz Furtak (Military University of Technology, Poland)

Securing the Internet of Things - A Military Perspective	502
<i>Konrad Wrona (NATO Communications and Information Agency, Netherlands)</i>	

Secure Protocol for Wireless Communication Within Internet of Military Things	508
<i>Janusz Furtak (Military University of Technology, Poland)</i>	
<i>Zbigniew Zielinski (Military University of Technology, Poland)</i>	
<i>Jan Chudzikiewicz (Military University of Technology, Poland)</i>	

17:30 - 19:00

Session S15: IoT Experimental Results (II)

Room: *Malliani*

Experimental Characterisation of Energy Consumption in Body Area Networks	514
<i>Stefan Mijovic (University of Bologna, Italy)</i>	
<i>Riccardo Cavallari (University of Bologna, Italy)</i>	
<i>Chiara Buratti (University of Bologna, Italy)</i>	

Accelerometer Assisted Authentication Scheme for Smart Bicycle Lock.....	520
<i>Alisa Arno (Keio University, Japan)</i>	
<i>Kentaroh Toyoda (Keio University, Japan)</i>	
<i>Iwao Sasase (Keio University, Japan)</i>	

Enabling Communication Among Smart Tags in an UHF RFID Local Area Network	524
<i>Ivan Farris (University Mediterranea of Reggio Calabria, Italy)</i>	
<i>Corrado Felini (University Mediterranea of Reggio Calabria, Italy)</i>	
<i>Sara Pizzi (University Mediterranea of Reggio Calabria, Italy)</i>	
<i>Massimo Merenda (University Mediterranea of Reggio Calabria, Italy)</i>	
<i>Antonio Iera (University Mediterranea of Reggio Calabria and HWA srl, Italy)</i>	
<i>Francesco Della Corte (University Mediterranea of Reggio Calabria, Italy)</i>	
<i>Antonella Molinaro (University Mediterranea of Reggio Calabria, Italy)</i>	

Experimental Evaluation of IETF 6TiSCH in the Context of Smart Grid	530
<i>Paventhana Arumugam (ERNET, India)</i>	
<i>Divya Darshini B (ERNET, India)</i>	
<i>Hari Krishna (ERNET, India)</i>	
<i>Neena Pahuja (ERNET, India)</i>	
<i>Mohammed Farooque Khan (Central Power Research Institute, India)</i>	
<i>Amit Jain (Central Power Research Institute, India)</i>	

PulseSS: A Microcontroller Implementation of Pulse-Coupled Scheduling and Synchronization Protocol for Cluster-Based Wireless Sensor Networks	536
<i>Reinhard Gentz (Arizona State University, USA)</i>	
<i>Anna Scaglione (Arizona State University, USA)</i>	
<i>Yao-Win Peter Hong (National Tsing Hua University, Taiwan)</i>	
<i>Lorenzo Ferrari (Arizona State University, USA)</i>	

17:30 - 19:00

Session S16: IoT Infrastructure Services

Room: 113

Resource Discovery in Internet of Things: Current Trends and Future Standardization Aspects	542
<i>Soumya Kanti Datta (EURECOM, France)</i>	
<i>Rui Pedro Ferreira da Costa (EURECOM, France)</i>	
<i>Christian Bonnet (EURECOM, France)</i>	
Evaluation and Recommendations on IPv6 for the Internet of Things	548
<i>Sebastien Ziegler (Mandat International, Switzerland)</i>	
<i>Latif Ladid (University of Luxembourg, Luxembourg)</i>	
<i>Antonio Skarmeta (University of Murcia, Spain)</i>	
<i>Peter Kirstein (University College London, United Kingdom)</i>	
Leveraging Proximity Services for Relay Device Discovery in User-provided IoT Networks.....	553
<i>Masanori Ishino (Osaka University, Japan)</i>	
<i>Yuki Koizumi (Osaka University, Japan)</i>	
<i>Toru Hasegawa (Osaka University, Japan)</i>	
Incorporating OMA Lightweight M2M Protocol in IoT/M2M Standard Architecture	559
<i>Christian Antonia Lusiarta Putera (National Chiao Tung University, Taiwan)</i>	
<i>Fuchun Joseph Lin (National Chiao Tung University, Taiwan)</i>	
GeeLytics: Geo-distributed Edge Analytics for Large Scale IoT Systems Based on Dynamic Topology	565
<i>Bin Cheng (NEC Laboratories Europe, Germany)</i>	
<i>Apostolos Papageorgiou (NEC Laboratories Europe, Germany)</i>	
<i>Ernoe Kovacs (NEC Laboratories Europe, Germany)</i>	
<i>Flavio Cirillo (NEC Laboratories Europe, Germany)</i>	

Technical Sessions - Wednesday, December 16

09:00 - 11:00

Session S17: IoT and Mobile Edge Computing

Room: 113

Capillary Networks - Bridging the Cellular and IoT Worlds..... 571

Oscar Novo (Ericsson Research, Finland)

Nicklas Beijar (Ericsson Research, Finland)

Mert Ocak (Ericsson Research, Finland)

Jimmy Kjällman (Ericsson Research, Finland)

Miika Komu (Ericsson Research, Finland)

Tero Kauppinen (Ericsson Research, Finland)

Towards a Software-Defined Network Operating System for the IoT..... 579

Angelos-Christos G. Anadiotis (University of Catania, Italy)

Laura Galluccio (University of Catania, Italy)

Sebastiano Milardo (University of Catania, Italy)

Giacomo Morabito (University of Catania, Italy)

Sergio Palazzo (University of Catania, Italy)

Exploiting LTE D2D Communications in M2M Fog Platforms: Deployment and Practical Issues..... 585

Carlo Vallati (University of Pisa, Italy)

Antonio Virdis (University of Pisa, Italy)

Enzo Mingozzi (University of Pisa, Italy)

Giovanni Stea (University of Pisa, Italy)

Federated Edge-assisted Mobile Clouds for Service Provisioning in Heterogeneous IoT Environments..... 591

Ivan Farris (University Mediterranea of Reggio Calabria, Italy)

Leonardo Militano (University Mediterranea of Reggio Calabria, Italy)

Michele Nitti (University of Cagliari, Italy)

Antonio Iera (University Mediterranea of Reggio Calabria, Italy)

Luigi Atzori (University of Cagliari, Italy)

Low-Power Wireless Advertising Software Library for Distributed M2M and Contextual IoT..... 597

Mohamed Imran Jameel (McGill University, Canada)

Jeffrey Dungen (ReelyActive, Canada)

Edge Computing Enabling the Internet of Things..... 603

Ola Salman (American University of Beirut, Lebanon)

Imad Elhajj (American University of Beirut, Lebanon)

Ayman Kayssi (American University of Beirut, Lebanon)

Ali Chehab (American University of Beirut, Lebanon)

11:30 - 13:30

Session S18: IoT for eHealth and Management of Chronic Conditions

Rooms: 113, Crociera lettere

Wi-Fi Based Passive Human Motion Sensing for In-Home Healthcare Applications 609

Bo Tan (University of Bristol, United Kingdom)
Alison Burrows (University of Bristol, United Kingdom)
Robert Piechocki (University of Bristol, United Kingdom)
Ian Craddock (University of Bristol, United Kingdom)
Qingchao Chen (University College London, United Kingdom)
Karl Woodbridge (University College London, United Kingdom)
Kevin Chetty (University College London, United Kingdom)

An Architecture to Manage Motor Disorders in Parkinson's Disease 615

Lucia Pepa (Università Politecnica delle Marche, Italy)
Marianna Capecci (Università Politecnica delle Marche, Italy)
Federica Verdini (Università Politecnica delle Marche, Italy)
Maria Gabriella Ceravolo (Università Politecnica delle Marche, Italy)
Luca Spalazzi (Università Politecnica delle Marche, Italy)

**A Structured Approach for Describing Healthcare Applications
for the Internet of Things..... 621**

Phillip Laplante (Penn State University, USA)
Nancy Laplante (Widener University, USA)

**An IoT Smart Home Architecture for Long-Term Care of People
with Special Needs..... 626**

Christopher Coelho (iTechTool, USA)
David Coelho (iTechTool, USA)
Marilyn Wolf (Georgia Tech, USA)

**A Patient-Centered Medical Environment with Wearable Sensors
and Cloud Monitoring 628**

Yu-Jung Ko (National Tsing Hua University, Taiwan)
Hui-Ming Huang (National Tsing Hua University, Taiwan)
Wei-Han Hsing (National Tsing Hua University, Taiwan)
Jerry Chou (National Tsing Hua University, Taiwan)
Hung-Chih Chiu (National Tsing Hua University, Taiwan)
Hsi-Pin Ma (National Tsing Hua University, Taiwan)

Framework for Dependable and Pervasive eHealth Services 634

Ulrico Celentano (University of Oulu, Finland)
Juha Rönning (University of Oulu, Finland)

14:30 - 16:30

Session S19: IoT and Intelligent Services

Room: Malliani

ConnectOpen - Automatic Integration of IoT Devices 640

Nuria Pazos (Applied Science University Western Switzerland, Switzerland)
Nabil Ouerhani (Applied Science University Western Switzerland, Switzerland)
Marco Aeberli (Applied Science University Western Switzerland, Switzerland)
Michael Müller (Applied Science University Western Switzerland, Switzerland)

A Context and User Aware Smart Notification System	646
<i>Fulvio Corno (Politecnico di Torino, Italy)</i>	
<i>Luigi De Russis (Politecnico di Torino, Italy)</i>	
<i>Teodoro Montanaro (Politecnico di Torino, Italy)</i>	
Sound-Field Reproduction System Over a Two-Node Acoustic Network of Mobile Devices	652
<i>Gema Piñero (Universitat Politecnica de Valencia, Spain)</i>	
<i>Juan Estreder (Universitat Politecnica de Valencia, Spain)</i>	
<i>Francisco Martinez-Zaldivar (Universitat Politecnica de Valencia, Spain)</i>	
<i>Miguel Ferrer (Universitat Politecnica de Valencia, Spain)</i>	
<i>María de Diego (Universitat Politecnica de Valencia, Spain)</i>	
Mobile Phone Based Acoustic Localization for Wireless Sensor Networks	658
<i>Amarlingam Madapu (Indian Institute of Technology Hyderabad, India)</i>	
<i>Masaya Yoshida (KDDI R&D Laboratories Inc., Japan)</i>	
<i>Pachamuthu Rajalakshmi (Indian Institute of Technology Hyderabad, India)</i>	
<i>Kiyohito Yoshihara (KDDI R&D Laboratories Inc., Japan)</i>	
Context-Aware Stream Processing for Distributed IoT Applications	663
<i>Adnan Akbar (University of Surrey, United Kingdom)</i>	
<i>Francois Carrez (University of Surrey, United Kingdom)</i>	
<i>Klaus Moessner (University of Surrey, United Kingdom)</i>	
<i>Juan Sancho (ATOS, Spain)</i>	
<i>Juan Rico (ATOS, Spain)</i>	
Modeling and Analysis of SiNW BioFET as Molecular Antenna for Bio-Cyber Interfaces Towards the Internet of Bio-NanoThings	669
<i>Murat Kuscu (Koc University, Turkey)</i>	
<i>Ozgur B. Akan (Koc University, Turkey)</i>	

14:30 - 16:30

Session S20: IoT and Smart Infrastructures

Room: Crociera lettere

Danger-System: Exploring New Ways to Manage Occupants Safety in Smart Building	675
<i>Andrea Piscitello (Politecnico di Milano, Italy)</i>	
<i>Francesco Paduano (Politecnico di Milano, Italy)</i>	
<i>Alessandro Nacci (Politecnico di Milano, Italy)</i>	
<i>Danny Noferi (Telecom Italia, Italy)</i>	
<i>Marco D Santambrogio (Politecnico di Milano, Italy)</i>	
<i>Donatella Sciuto (Politecnico di Milano, Italy)</i>	
A Case Study of Internet of Things: a Wireless Household Water Consumption Monitoring System	681
<i>Shuang-Hua Yang (Loughborough University, United Kingdom)</i>	
<i>Xi Chen (Loughborough University, United Kingdom)</i>	
<i>Xiaomin Chen (Loughborough University, United Kingdom)</i>	
<i>Lili Yang (Loughborough University, United Kingdom)</i>	
<i>Baichong Chao (Wuhan University, P.R. China)</i>	
<i>Jiangtao Cao (Liaoning Shihua University, P.R. China)</i>	

Ontology Based Context Aware Situation Tracking 687

Anupama Mallik (Indian Institute of Technology, Delhi, India)
Ravi Kumar (Samsung Research Institute, India)
Anurag Tripathi (Indian Institute of Technology, Delhi, India)
Santanu Chaudhury (Indian Institute of Technology, Delhi, India)
Komal Sinha (Indian Institute of Technology, Delhi, India)

Wireless Sensor and Actuator System for Smart Irrigation on the Cloud 693

Nelson Sales (SenseFinity, Portugal)
Artur Arsenio (Universidade da Beira Interior, Portugal)
Orlando Remedios (SenseFinity, Portugal)

Context-Aware Energy Efficiency Management for Smart Buildings 699

Carlos Kamienski (Universidade Federal do ABC (UFABC), Brazil)
Fabrizio Borelli (Universidade Federal do ABC (UFABC), Brazil)
Gabriela Biondi (Universidade Federal do ABC (UFABC), Brazil)
Isaac Pinheiro (Universidade Federal do ABC (UFABC), Brazil)
Ivan Zyrianoff (Universidade Federal do ABC (UFABC), Brazil)
William Rosa (Universidade Federal do ABC (UFABC), Brazil)
Djamel Hadj Sadok (Universidade Federal de Pernambuco (UFPE), Brazil)
Ferry Pramudianto (Franhofer FIT, Germany)

**Context Sensitive Indoor Temperature Forecast for Energy Efficient Operation
of Smart Buildings 705**

M. Victoria Moreno (University of Murcia, Spain)
Antonio Skarmeta (University of Murcia, Spain)
Alberto Venturi (NEC Laboratories Europe, Germany)
Mischa Schmidt (NEC Laboratories Europe, Germany)
Anett Schülke (NEC Laboratories Europe, Germany)

14:30 - 16:30

Session S21: IoT Security and Privacy (I)

Room: Crociera giurisprudenza

**Secure End-to-End Communication for Constrained Devices in IoT-enabled
Ambient Assisted Living Systems 711**

Pawani Porambage (University of Oulu, Finland)
An Braeken (Vrije Universiteit Brussel, Belgium)
Andrei Gurtov (Aalto University, Finland)
Mika Ylianttila (University of Oulu, Finland)
Susanna Spinsante (Università Politecnica delle Marche, Italy)

Preserving Privacy in secured ZigBee Wireless Sensor Networks 715

Christine Hennebert (CEA Grenoble, France)
Jessye Dos Santos (CEA Grenoble, France)
Cedric Lauradoux (INRIA, France)

Data Integrity Attacks and Defenses for Intel Lab Sensor Network 721

Renchi Yan (University of California, Los Angeles, USA)
Teng Xu (University of California, Los Angeles, USA)
Miodrag Potkonjak (University of California, Los Angeles, USA)

Towards a Model of Privacy and Security for Smart Homes 727

Andreas Jacobsson (Malmö University, Sweden)
Paul Davidsson (Malmö University, Sweden)

On Randomness Testing in Physical Layer Key Agreement..... 733

Roland Schmitz (Stuttgart Media University, Germany)

Matthias Goehring (Technical University of Darmstadt, Germany)

Selective Decryption of Outsourced IoT Data..... 739

Jens-Matthias Bohli (NEC Laboratories Europe, Germany)

Roman Kurpatov (NEC Laboratories Europe, Germany)

Mischa Schmidt (NEC Laboratories Europe, Germany)

17:00 - 18:30

Session S22: IoT Smart Cities

Room: 113

A Visual Sensor Network for Parking Lot Occupancy Detection in Smart Cities 745

Luca Baroffio (Politecnico di Milano, Italy)

Luca Bondi (Politecnico di Milano, Italy)

Matteo Cesana (Politecnico di Milano, Italy)

Alessandro Enrico Redondi (Politecnico di Milano, Italy)

Marco Tagliasacchi (Politecnico di Milano, Italy)

Crowdsensing Smart City Parking Monitoring 751

Félix J. Villanueva (University of Castilla-La Mancha, Spain)

David Villa (University of Castilla-La Mancha, Spain)

Maria Jose Santofimia (University of Castilla-La Mancha, Spain)

Jesús Barba (University of Castilla-La Mancha, Spain)

Juan Carlos López (University of Castilla-La Mancha, Spain)

Lighting-Enabled Smart City Applications Ecosystems Based on the IoT..... 757

Abhishek Murthy (Philips Research, USA)

Dong Han (Philips Research, USA)

Dan Jiang (Philips Research, USA)

Talmay Oliveira (Philips Research, USA)

A Smart Parking System Based on IoT Protocols and Emerging

Enabling Technologies..... 764

Luca Mainetti (University of Salento, Italy)

Luigi Patrono (University of Salento, Italy)

Maria Laura Stefanizzi (University of Salento, Italy)

Roberto Vergallo (University of Salento, Italy)

TRESCIMO: European Union and South African Smart City Contextual Dimensions 770

Andreea Ancuta Corici (Fraunhofer FOKUS Institute, Germany)
Louis Coetzee (CSIR, South Africa)
Andrew Smith (CSIR, South Africa)
Ronald Steinke (Technische Universitat, Germany)
Hinesh Madhoo (Eskom, South Africa)
Nyasha Mukudu (University of Cape Town, South Africa)
Marisa Catalan (i2CAT Foundation, Spain)
Josep Paradells (i2CAT Foundation, Spain)
Alejandra Escobar Rubalcava (Fraunhofer FOKUS Institute, Germany)
Maria Barros (Eurescom, Germany)
Anastasius Gavras (Eurescom, Germany)
Joyce Mwangama (University of Cape Town, South Africa)
Neco Ventura (University of Cape Town, South Africa)
Thomas Magedanz (Technische Universitat, Germany)
Tiaan Willemse (Eskom, South Africa)

17:00 - 18:30

Session S23: IoT Security and Privacy(II)

Room: Crociera giurisprudenza

**Analysis of Security Protocols and Corresponding Cipher Suites
in ETSI M2M Standards 777**

Daniel Widyopratomo (National Chiao Tung University, Taiwan)
Fuchun Joseph Lin (National Chiao Tung University, Taiwan)

Dynamic Security Credentials PANA-based Provisioning for IoT Smart Objects..... 783

José Luis Hernandez-Ramos (University of Murcia, Spain)
Dan Garcia Carrillo(University of Murcia, Spain)
Rafael Marin-Lopez (University of Murcia, Spain)
Antonio Fernando Skarmeta (University of Murcia, Spain)

An Agent-based Framework for Informed Consent in the Internet of Things 789

Ricardo Neisse (European Commission Joint Research Centre, Italy)
Gianmarco Baldini (European Commission Joint Research Centre, Italy)
Gary Steri (European Commission Joint Research Centre, Italy)
Yutaka Miyake (KDDI R&D Laboratories Inc., Japan)
Shinsaku Kiyomoto (KDDI R&D Laboratories Inc., Japan)
Abdur Rahim Biswas (Create-Net Research Centre, Italy)

**Towards Effective Security Control Assignment in the Industrial
Internet of Things..... 795**

Amin Hassanzadeh (Accenture Technology Labs, USA)
Shimon Modi (Accenture Technology Labs, India)
Shaan Mulchandani (Accenture Technology Labs, USA)

Towards a Social Governance Framework for Internet of Things 801

Muthucumaru Maheswaran (McGill University, Canada)
Sridipta Misra (McGill University, Canada)