



MSWiM 2016

19th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile

Malta - November 13th - 17th, 2016

TECHNICAL PROGRAM



Association for
Computing Machinery

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ACM SIG on Simulation and Modeling

Program Schedule (at a glance)

Symposia and Workshops Day 1		MSWiM Day 1	MSWiM Day 2	MSWiM Day 3	Symposia and Workshops Day 2
	SUN - Nov 13	MON - Nov 14	TUE - Nov 15	WED - Nov 16	THU - Nov 17
7:30	Registration	Registration	Registration	Registration	Registration
8:00		Welcome Opening Address			
8:30		Session 1 Mobile and Vehicular Ad Hoc Networks (8:30 - 9:45)	Session 5 Wireless Access (8:15 - 10:00)	Session 9 Wireless Communication (8:30 - 9:15)	
9:00					
9:30					
10:00		Keynote 1 Prof. Kin K. Leung (9:45 - 10:45)	Coffee Break (10:00 - 10:30)	Coffee Break (10:15 - 10:45)	
10:30					
11:00		Coffee Break (10:45 - 11:15)	Session 6 Wireless Cloud and IoT (10:30 - 12:00)		
11:30		Session 2 Optimization and Energy Consumption (11:15 - 12:30)		Session 10 D2D and Wearable Devices (10:45 - 12:15)	
12:00	DIVANet	Lunch (12:30 - 13:30)	Lunch (12:00 - 13:30)	Lunch (12:15 - 13:30)	MobiWac & PE-WASUN
12:30	Q2SWinet				
13:00					
13:30		Session 3 WiFi and WAN Performance Evaluation (13:30 - 15:00)	Session 7 Cellular Networks and Mobility Management (13:30 - 15:00)	Session 11 Sensing and Tracking (13:30 - 15:00)	
14:00					
14:30		Coffee Break (15:00 - 15:30)	Coffee Break (15:00 - 15:30)	Coffee Break (15:00 - 15:30)	
15:00					
15:30					
16:00		Session 4 Wireless Networks - Performance Modeling (15:30 - 17:15)	Session 8 Wireless Sensor Networks (15:30 - 17:15)	Session 12 Wireless Networks (15:30 - 17:15)	
16:30					
17:00				Closing Remarks	
17:30			Banquet (18:30)		
18:00					

Message from the Chairs



Albert Zomaya
University of Sidney, Australia
General Co-Chair

General Chair's Welcome Message

Welcome to the 19th ACM International Conference on Modelling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM), held this year in astonishing Malta. Located in the central area of the Mediterranean between South of Sicily and North Africa, Malta is culturally very rich due to be in a strategic naval position, which has been successively ruled by several civilizations and empires along its long history. The warm climate and its pleasant beaches washed by the Mediterranean perfectly complement its 7000 years of history with architectural and historical monuments, including UNESCO World Heritage sites: Hypogeum of Hal-Saflieni, Valletta, and the seven Megalithic Temples, consisting of some of the oldest free-standing structures in the world.

MSWiM has established itself over the years as a leading venue where some of the best research in the area of performance evaluation of wireless and mobile systems is presented, and this is no exception. Putting together a high-quality conference like MSWiM is an enormous undertaking that requires a great team effort. We thank Geyong Min and Antonio F. Loureiro for putting together the technical program, from the Call for Papers to the final program selection and its schedule. We also acknowledge the volunteer efforts of TPC members and external reviewers whose expertise and hard work culminated in selecting excellent papers. This year, MSWiM presents strong poster and demonstration sessions, managed by Robson E. De Grande, the Poster Sessions Chair, and Laura-Marie Feeney, the Demo Session Chair. Finally, the technical program includes two distinguished keynotes addresses by the following two outstanding experts, Prof. Jean-Pierre Hubaux from EPFL, Switzerland, and Prof. Kin K. Leung from Imperial College, UK.

To recognize excellence in research work in the field of Wireless Communications and Mobile Networking from academia and industry, the ACM MSWiM Reginald G. Fessenden Award has been established two years ago, and it is granted to a distinguished researcher for the remarkable contributions that he has achieved in the area. In 2015, the award was presented to Professor Mario Gerla from UCLA in recognition of "his pioneering contributions for his outstanding work in the development of Routing, Transport Protocols, and Applications in Mobile Wireless Networks". The winner for this year will be announced at the ACM MSWiM 2016 banquet dinner.

Four symposia and two tutorials will be held this year along with the main conference program, covering several specializations within mobile and wireless systems. The four symposia are: MobiWAC, PE-WASUN, DIVANET and Q2SWInet. Over the years, these symposia have become successful and quite competitive in their own right.

We also wish to express our gratitude to those who have managed the many practical details of the event. These individuals include Mirela Notare and Salil Kanhere as the Publicity Co-Chairs; and Thomas Begin and Jalel Ben-Othman for organizing the tutorials in the Conference. We also express our appreciation to the MSWiM Steering Committee for their guidance and support, which helped us to bring together an exceptional conference program this year. Last but not least, we wish to thank our main sponsor, ACM SIGSIM.

We are very pleased to welcome you to MSWiM 2016 and fascinating Malta. We are certain that you will find this year's event full of stimulating ideas and discussions.

Technical Program Chairs' Welcome Message

The technical program of the 19th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM), held in Malta in 2016 continues to build upon the high standards set by previous editions of the conference. In 2016, the call for papers attracted 138 registered papers in all areas of mobile and wireless systems. The submitted papers came from 36 countries. Members of the Technical Program Committee are affiliated to universities and industry in 17 countries spread over five continents, reflecting the truly international profile of MSWiM. The five most commonly listed topics for submissions to MSWiM'15 were:

- *Performance evaluation and modeling*
- *Wireless network algorithms and protocols*
- *Wireless mesh networks, mobile ad hoc networks, Vehicular networks*
- *Algorithms and protocols for energy efficiency and power control*
- *Analytical models*

The submissions included a large number of papers of very high quality making the selection process difficult and competitive. In the end, we selected 36 regular papers, which correspond to an acceptance rate of approximately 27%. An additional 10 short papers were recommended for the program owing to their quality and contribution. Among the regular papers, the following four papers were shortlisted as candidates for the best paper award:

- **"Coverage Properties of One-Dimensional Infrastructure-Based Wireless Networks,"** Naveen Kolar Purushothama (Indian Institute of Technology Madras, India) and Anurag Kumar (Indian Institute of Science, India)
- **"Effective Selection of Targeted Advertisements for Vehicular Users,"** Gil Einziger (Politecnico di Torino, Italy), Carla-Fabiana Chiasserini (Politecnico di Torino, Italy), and Francesco Malandrino (Politecnico di Torino, Italy)
- **"Preference and Mobility-Aware Task Assignment in Participatory Sensing,"** Rim Ben Messaoud (Universite Paris Est Marne La Vallee, France), Yacine Ghamri-Doudane (University of La Rochelle, France), and Dmitri Botvich (TSSG, Waterford Institute of Technology, Ireland)
- **"Theoretical Interference Analysis of Inter-vehicular Communication at Intersection with Power Control,"** Tatsuaki Kimura (NTT Corporation, Japan) and Hiroshi Saito (NTT Corporation, Japan)

The winner among these three papers will be announced at the conference banquet, and will be reported in the proceedings of MSWiM 2016. At this point, we take the opportunity to congratulate the winners of the best paper award for MSWiM 2015:

- **"Data Dependency based Parallel Simulation of Wireless Networks,"** Mirko Stoffers, Torsten Sehy, James Gross, and Klaus Wehrle.



Geyong Min
University of Exeter, United Kingdom
Program Chair



Antonio F. Loureiro
Federal University of Minas Gerais, Brazil
Program Co-Chair

Table of Contents

» Organizing Committee	4
» Organizing Committee (Symposia/workshops)	5
» Keynote Addresses	6
» MSWiM Conference Technical program	7
» Sunday, November 13	7
» Monday, November 14	7
» Tuesday, November 15	8
» Wednesday, November 16	9
» Symposium/Workshop Technical Program	11
» ACM Q2SWINET Symposium	11
» ACM DIVANET Symposium	12
» ACM PE-WASUN Symposium	14
» ACM MOBIWAC Symposium	15
» General Information	17

Organizing Committee

General Chair:	Albert Zomaya University of Sydney, Australia	Program Committee
Program Co-Chairs:	Geyong Ming University of Exeter, United Kingdom Antonio F. Loureiro Federal University of Minas Gerais, Brazil	Antonio A.F. Loureiro Adam Wolisz Andrea Passarella Andreas Willig Angel Cu evas Azzedine Boukerche Bjorn Landfeldt Brahim Bensaou Carla-Fabiana Chiasserini Cheng Li David Eckhoff Dirk Staehle Ehab Elmallah Enzo Mingozi Falko Dressler Francesco Lo Presti Holger Karl Hongyi Wu Hossam Hassanein Isabel Wagner Isabelle Guérin Lassous Jalel Ben-Othman James Gross JJ Garcia-Luna-Aceves Juan-Carlos Cano Klaus Wehrle Lorenzo Donatiello Luciano Bononi Martina Zitterbart Matthias Wählisch Mineo Takai Mónica Aguilar Igartua Raffaele Bruno Ravi Prakash Renato Lo Cigno Roberto Beraldí Robson De Grande Sotiris Nikoletseas Stephan Eidenbenz Terence D. Todd Torsten Braun Violet Syrotiuk Zygmunt Haas Marcos di Renzo Giovanni Giambene Harald Kosch Maria G Martini Zhengguo Sheng Xu Zhu Olga Zlydareva
Workshop Co-Chairs:	Periklis Chatzimisios Alexander TEI of Thessaloniki SungBum Hong Jackson State University, USA	Federal University of Minas Gerais - Brazil TUB IIT-CNR - Italy University of Canterbury - New Zealand Universidad Carlos III de Madrid - Spain University of Ottawa - Canada Lund University The Hong Kong University of Science and Technology Politechnico di Torino - Italy Memorial University of Newfoundland - Canada University of Erlangen Docomo Euro-Labs - Germany University of Alberta - Canada University of Pisa - Italy University of Innsbruck - Austria Universita' di Roma Tor Vergata - Italy University of Paderborn - Germany University of Louisiana at Lafayette - USA Queen's University - Canada University of Hull Université Claude Bernard Lyon 1 - LIP - France University of Paris 13 - France Royal Institute of Technology (KTH) - Sweden University of California at Santa Cruz Universidad Politecnica de Valencia - Spain RWTH Aachen University Università di Bologna - Italy University of Bologna - Italy KIT (Karlsruhe Institute of Technology) Freie Universität Berlin University of California - Los Angeles - USA Universitat Politècnica de Catalunya (UPC) - Spain IIT-CNR - Italy University of Texas at Dallas University of Trento - Italy Sapienza Università di Roma - Italy University of Ottawa - Canada University of Patras and Computer Tech. Institute - Greece Los Alamos National Laboratory - USA McMaster University - Canada University of Bern Arizona State University - USA Cornell University - USA Supelec - France University of Siena - Italy University of Passau - Germany Kingston College - United Kingdom Sussex University - United Kingdom University of Liverpool - United Kingdom Dublin City University - Ireland
Poster Chair:	Robson E. de grande DIVA Strategic Research Network, Canada	
Demo & Tools Chair:	Laura Marie Feeney Swedish Institute of Computer Science, Sweden	
Tutorial Co-Chairs:	Thomas Begin University Claude Bernard Lyon, France Jalel Ben-Othman University Paris 13, France	
Publicity Co-Chairs:	Mirela A. M. Notare São José Municipal University, Brazil Salil Kanhere University of New South Wales, Australia	
PhD Forum Chair:	Bjorn Landfeldt Lund University, Sweden	
Steering Committee		
Azzedine Boukerche	University of Ottawa, Canada (Chair)	
Sanjal K. Das	Missouri University of Science and Technology, USA	
Lorenzo Donatiello	Università di Bologna, Bologna, Italy	
Jason Yi-Bing Lin	National Chiao-Tung University, Taiwan	
Albert Zomaya	University of Sydney, Australia	
William C. Y. Lee	AirTouch Inc.	
Simon Taylor	Brunel University, UK	
Robson E. De Grande	DIVA Research Network, Canada	

Organizing Committee (Symposia/workshops)

ACM MOBIWAC Symposium

General Chair:	Ángel Cuervas Universidad Carlos III de Madrid, Spain
Program Co-Chairs:	Periklis Chatzimisios Alexander TEI of Thessaloniki, Greece Robson de Grande NSERC DIVA Research Network, Canada
Poster/Demo Chair:	Graciela Román Alonso Universidad Autónoma Metropolitana, Mexico
Publicity Co-Chairs:	Khalil El-khatib UOIT, Canada Mirela. A. M. Notare São José Municipal University, Brazil

ACM PE-WASUN Symposium

General Chair:	Isabelle Guérin Lassous University Lyon 1/LIP, Lyon, France
Program Co-Chairs:	Carolina Tripp Barba Universidad Autónoma de Sinaloa, Mexico Tahiry Razafindralambo Inria, France
Poster/Demo Chair:	Tahiry Razafindralambo Inria, France
Publicity Chair:	Carolina Tripp Barba Universidad Autónoma de Sinaloa, Mexico

ACM DIVANET Symposium

General Chair:	Robson De Grande NSERC DIVA Research Centre , Canada
Program Co-Chairs:	Mirela S. M. Notare FAERO Technology University, Brazil Amir Darehshoorzadeh NSERC DIVA Research Centre , Canada
Poster/Demo Chair:	Abdelghani Benmaddi NSERC DIVA Research Centre , Canada
Publicity Chair:	Salil Kanhere The University of New South Wales, Australia

ACM Q2SWINet Symposium

General Chair:	Azzedine Boukerche University of Ottawa, Canada
Program Co-Chairs:	Edmundo Monteiro University of Coimbra, Portugal Burak Kantarci University of Ottawa, Canada

Monday, November 14 (9:45 - 10:45 AM)

Title: Use of Optimization Models for Resource Allocation in Wireless Ad-hoc Networks



Prof. Kin K Leung
Professor at the Imperial College
London, UK

Abstract:

Optimization models and techniques are often used to achieve efficient allocation of limited network resources to competing demands in communication networks. In this talk, the speaker will give a brief overview of distributed optimization theory, including convex optimization problems for which iterative solution techniques exist and converge. The well-known Transport Control Protocol (TCP) is shown to be equivalent a distributed solution that achieves the optimal allocation of bandwidth in communication networks. As for wireless ad-hoc and sensor networks, each link capacity depends on the transmission power of other links due to co-channel interference. In addition, the quality of multimedia services supported by these networks cannot be represented by a concave function of the amount of allocated bandwidth. These factors unfortunately make the resource allocation problem for the wireless networks become a non-convex optimization problem. New distributed solution techniques will be presented to solve these problems and numerical examples will also be provided.

This talk will also consider the in-network data processing in wireless sensor networks where data are aggregated (fused) along the way they are transferred toward the end user. It will be shown that finding the optimal solution for the distributed processing problem is NP-hard, but for specific parameter settings, the problem can lead to a distributed framework for achieving the optimal tradeoff between communications and computation costs. Future work on integrating data or signal processing techniques with the distributed solution framework will be discussed.

Short Bio:

Kin K. Leung is the Tanaka Chair Professor in the Electrical and Electronic Engineering (EEE), and Computing Departments at Imperial College in London. He serves as the Head of Communications and Signal Processing Group in the EEE Department at Imperial. His research focuses on networking, protocols, optimization and modeling issues of wireless broadband, sensor and ad-hoc networks. He also works on multi-antenna systems and cross-layer optimization of these networks. He was a guest editor for the IEEE JSAC, IEEE Wireless Communications and the MONET journal, and as an editor for the JSAC: Wireless Series, IEEE Transactions on Wireless Communications and IEEE Transactions on Communications. Currently, he is an editor for the ACM Computing Survey and International Journal on Sensor Networks.

Tuesday, November 15 (9:45 - 10:45 AM)

Title: Privacy Challenges in Mobile and Pervasive Networks



Prof. Jean-Pierre Hubaux
Ecole Polytechnique Federale de Lausanne
Lausanne, Switzerland

Abstract:

This last decade has witnessed a wide adoption of connected mobile devices able to capture the context of their owners from embedded sensors (GPS, Wi-Fi, Bluetooth, accelerometers). The advent of mobile and pervasive computing has enabled rich social and contextual applications, but the use of such technologies raises severe privacy issues and challenges. The privacy threats come from diverse adversaries, ranging from curious service providers and other users of the same service to eavesdroppers and curious applications running on the device. The information that can be collected from mobile device owners includes their locations, their social relationships, and their current activity. All of this, once analyzed and combined together through inference, can be very telling about the users' private lives.

In this talk, we will describe privacy threats in mobile and pervasive networks. We will also show how to quantify the privacy of the users of such networks and explain how information on co-location can be taken into account. We will describe the role that privacy enhancing technologies (PETs) can play and describe some of them. We will also explain how to prevent apps from sifting too many personal data under Android. We will conclude by mentioning the privacy and security challenges raised by the quantified self' and digital medicine.

Short Bio:

Jean-Pierre Hubaux is a full professor at EPFL. Through his research, he contributes to laying the foundations and developing the tools to protect privacy in tomorrow's hyper-connected world. He is focusing notably on network privacy and security, with an emphasis on mobile/wireless networks and on data protection, with an emphasis on health-related data and especially genomic data. He has also studied privacy and security mechanisms (especially for mobile networks) in the presence of selfish players. Previously, he pioneered the areas of wireless network security and secure vehicular communications. Since 2007, he has been one of the seven commissioners of the Swiss FCC. He was recently appointed to the Information Security Task Force, set up by the Swiss federal government. He is a Fellow of both IEEE (2008) and ACM (2010).

MSWiM Conference Technical program

Sunday, November 13

[7:30] Registration Opening

[All Day] Concurrent Symposia I

(Check Individual Symposia Schedules)

Q2SWinet 2016

12th ACM International Symposium on QoS and Security for Wireless and Mobile Networks

DIVANet 2016

6th ACM Symposium on Design and Analysis of Intelligent Vehicular networks and Applications

[All Day] Tutorials

Performance Evaluation of IEEE 802.11-based Multihop Wireless Networks: From modeling to experimentations

Isabelle Guérin Lassous

Virtualization and Network Slicing Solutions in 5G Wireless Networks

Vincenzo Sciancalepore and Dr. Konstantinos Samdanis

Monday, November 14

[7:30] Registration Opening

[All Day] Concurrent Symposia II

(Check Individual Symposia Schedules)

Q2SWinet 2016

12th ACM International Symposium on QoS and Security for Wireless and Mobile Networks

DIVANet 2016

6th ACM Symposium on Design and Analysis of Intelligent Vehicular networks and Applications

[08:15 - 08:30] Welcome Address

[08:30 - 09:45] Session 01: Mobile and Vehicular Ad Hoc Networks

Theoretical Interference Analysis of Inter-vehicular Communication at Intersection with Power Control

Tatsuaki Kimura and Hiroshi Saito (NTT Corporation, Japan)

Neighbor Contamination to Achieve Complete Bottleneck Control

Nadav Schweitzer (Ben-Gurion University, Israel); Ariel Stulman (Jerusalem College of Technology, Israel); Asaf Shabtai (Ben-Gurion University, Israel)

A Fully-distributed Traffic Management System to Improve the Overall Traffic Efficiency

Allan Mariano de Souza and Leandro Aparecido Villas (University of Campinas, Brazil)

[09:45 - 10:45] Keynote Speech

Use of Optimization Models for Resource Allocation in Wireless Ad-Hoc and Sensor Networks

Prof. Kin K. Leung (Imperial College, UK)

[10:45 - 11:15] Coffee Break

[11:15 - 12:30] Session 02: Optimization and Energy Consumption

Revisiting 802.11 Rate Adaptation from Energy Consumption's Perspective

Inaki Ucar (Universidad Carlos III de Madrid, Spain); Carlos Donato (IMDEA Networks Institute, Spain); Pablo Serrano (Universidad Carlos III de Madrid, Spain); Andres Garcia-Saavedra (NEC Labs Europe, Germany); Arturo Azcorra and Albert Banchs (Universidad Carlos III de Madrid & IMDEA Networks Institute, Spain)

Performance-Energy Trade-offs in Smartphones

Tiberiu S Chis and Peter G Harrison (Imperial College London, England UK)

Energy Aware Network Formation in Peer-to-Peer Wireless Power Transfer

Adelina Madhja and Sotiris Nikoletseas and Christoforos Raptopoulos and Dimitrios Tsolovos (Computer Technology Institute and Press Diophantus (CTI) & University of Patras, Greece)

[12:30 - 13:30] Lunch Break

[13:30 - 17:15] Poster Session I

[13:30 - 15:00] Session 03: WiFi and WAN Performance Evaluation

Passive Classification of Wi-Fi Enabled Devices

Alessandro Enrico Cesare Redondi and Davide Sanvito and Matteo Cesana (Politecnico di Milano, Italy)

Do LoRa Low-Power Wide-Area Networks Scale?

Martin C. Bor and Utz Roedig (Lancaster University, United Kingdom); Thiemo Voigt (Uppsala University and SICS, Sweden); Juan M. Alonso (Universidad Nacional De Cuyo and Universidad Nacional De San Luis, Argentina)

Impact of Time in Network Selection for Mobile Nodes

Tobias Rueckelt (Adam Opel AG, Germany); Daniel Burgstahler (Technische Universität Darmstadt, Germany); Florian Jomrich (Adam Opel AG, Germany); Doreen Bohnstedt and Ralf Steinmetz (Technische Universität Darmstadt, Germany)

Evaluating Video Dissemination in Realistic Urban Vehicular Ad-Hoc Networks

Cristhian Iza-Paredes and Ahmad Mohamad Mezher and Monica Aguilar Igartua (Universitat Politècnica de Catalunya (UPC), Spain)

[15:30 - 17:15] Coffee Break

MSWiM Conference Technical program

[15:30 - 17:15] Session 04: Wireless Networks - Performance Modeling

T-SIMn: Towards the High Fidelity Trace-Based Simulation of 802.11n Networks

Ali Abedi and Andrew Heard and Tim Brecht (University of Waterloo, Canada)

Preference and Mobility-Aware Task Assignment in Participatory Sensing

Rim Ben Messaoud (Universite Paris Est Marne La Vallee, France); Yacine Ghamri-Doudane (University of La Rochelle, France); Dmitri Botvich (TSSG, Waterford Institute of Technology, Ireland)

Experimental Validation of a Distributed Self-Configured 6TiSCH with Traffic Isolation in Low Power Lossy Networks

Fabrice Theoleyre (CNRS / University of Strasbourg, France); Georgios Z. Papadopoulos (Institut Mines Telecom, France)

A Novel Semi-Supervised Adaboost Technique for Network Anomaly Detection

Yali Yuan (Institute of Computer Science, Germany); Georgios Kakkamanos (Gesellschaft fur wissenschaftliche Datenverarbeitung mbH Goettingen (GWDG), Germany); Dieter Hogrefe (Institute of Computer Science, Germany)

An Approach to Rule Placement in Software-Defined Networks

Wenjie Li and Zheng Qin and Hui Yin and Rui Li and Lu Ou and Heng Li (Hunan University, China)

Tuesday, November 15

[08:15 - 10:00] Session 05: Wireless Access

Association Optimization in Wi-Fi Networks: Use of an Access-based Fairness

Mohammed Amer and Anthony Busson and Isabelle Guerin Lassous (Univ Lyon, UCB Lyon 1, CNRS, ENS de Lyon, Inria, LIP UMR 5668, France)

Energy Efficiency in Mixed Access Networks

Christian Vitale and Vincenzo Mancuso (IMDEA Network Institute, Spain)

Making On-Demand Routing Efficient with Route-Request Aggregation

Maziar Mirzazad-Barijough (UCSC, USA); J.J. Garcia-Luna-Aceves (UCSC/PARC, USA)

Effective Selection of Targeted Advertisements for Vehicular Users

Gil Einziger and Carla-Fabiana Chiasserini and Francesco Malandrino (Politecnico di Torino, Italy)

[10:00 - 10:30] Coffee Break

[10:30 - 12:00] Session 06: Wireless Cloud and IoT

Modeling and Analysis: Energy Harvesting in the Internet of Things

Yu-Hsuan Chen (National Taiwan University, Taiwan Roc); Bryan Ng and Winston K.G. Seah (Victoria University of Wellington, New Zealand); Ai-Chun Pang (National Taiwan University, Taiwan Roc)

Formal Analysis and Verification of the IEEE 802.15.4 DSME Slot Allocation

Florian Kauer and Maximilian Köstler and Tobias Lübkert and Volker Turau (Hamburg University of Technology, Germany)

Analytical Models for QoS-driven VNF Placement and Provisioning in Wireless Carrier Cloud

Fatma Ben Jemaa and Guy Pujolle (Sorbonne Universites, UPMC, France); Michel Pariente (Meteor Network, France)

A Novel Service-oriented Architecture for Information-Centric Vehicular Networks

Felipe Modesto and Azzedine Boukerche (University of Ottawa, Canada)

[12:00 - 13:30] Lunch Break

[13:30 - 15:00] Session 07: Cellular Networks and Mobility Management

Holistic Small Cell Traffic Balancing across Licensed and Unlicensed Bands

Ursula Challita and Mahesh K. Marina (The University of Edinburgh, United Kingdom)

Learning-Based Resource Allocation Scheme for TDD-Based 5G CRAN System

Sahar Imtiaz and Hadi Ghauch and M. Mahboob Ur Rahman (KTH Royal Institute of Technology, Sweden); George Koudouridis (Huawei Technologies, Sweden); James Gross (KTH Royal Institute of Technology, Sweden)

Backhaul Routing and Base Station Sleep Mode Engagement in Energy Harvesting Cellular Networks

Jorge Baranda and Marco Miozzo and Paolo Dini and Jose Nunez-Martinez and Josep Mangues-Bafalluy (Centre Tecnologic de Telecommunications de Catalunya (CTTC), Spain)

Characterizing User Activity in WiFi Networks: University Campus and Urban Area Case Studies

Larissa Marinho Eglem de Oliveira and Katia Obraczka and Abel Rodriguez (University of California Santa Cruz, USA)

[15:00 - 15:30] Coffee Break

[15:30 - 17:15] Session 08: Wireless Sensor Networks

An Experimental Study of Cross-Technology Interference in In-Vehicle Wireless Sensor Networks

Rasool Tavakoli and Majid Nabi and Twan Basten and Kees Goossens (Eindhoven University of Technology, Netherlands)

MSWiM Conference Technical program

A Novel Centrality Metric for Topology Control in Underwater Sensor Networks

Rodolfo W. L. Coutinho (University of Ottawa and Federal University of Minas Gerais, Canada); Azzedine Boukerche (University of Ottawa, Canada); Luiz Vieira and Antonio Loureiro (UFMG, Brazil)

A Slot Sharing TDMA Scheme for Reliable and Efficient Collision Resolution in WSNs

Philip Parsch and Alejandro Masrur (TU Chemnitz, Germany)

Multisensor Data Fusion for Patient Risk Level Determination and Decision-support in Wireless Body Sensor Networks

Carol Habib and Abdallah Makhoul (University of Franche-Comte, femto-st institute, France); Rony Darazi (Antonine University, TICKET Lab, Lebanon); Raphael Couturier (University of Franche-Comte, femto-st institute, France)

On Optimal Charger Positioning in Clustered RF-power Harvesting Wireless Sensor Networks

Dimitrios zorbas and Patrice Raveneau and Yacine Ghamri-Doudane (University of La Rochelle, France)

Wednesday, November 16

[7:30] Registration Opening

[All Day] Concurrent Symposia III

(Check Individual Symposia Schedules)

MobiWAC 2016

14th ACM International Symposium on Mobility Management and Wireless Access

PE-WASUN 2016

12th ACM International Symposium on Performance Evaluation of Wireless Ad Hoc, Sensor and Ubiquitous Networks

[08:30 - 9:15] Session 09: Wireless Communication

Examining Relationships Between 802.11n Physical Layer Transmission Feature Combinations

Ali Abedi and Tim Brecht (University of Waterloo, Canada)

Distributionally Robust Relay Beamforming in Wireless Communications

Shimin Gong (Shenzhen Institutes of Advanced Technology, China); Sissi Xiaoxiao Wu and Anthony Man-Cho So (The Chinese University of Hong Kong, China); Xiaoxia Huang (Shenzhen Institutes of Advanced Technology, China)

[09:15 - 10:15] Keynote Speech

Privacy Challenges in Mobile and Pervasive Networks

Prof. Jean-Pierre Hubaux (Ecole Polytechnique Federale de Lausanne, Switzerland)

[10:15 - 10:45] Coffee Break

[10:45 - 12:15] Session 10: D2D and Wearable Devices

Control-theoretic Scalable Device-to-Device Offloading System for Video Streaming Services

Gi Seok Park (Division of IT Convergence Engineering, Pohang University of Science and Technology (POSTECH), Republic of Korea); Wan Kim (Cloud Technology Lab., Software R&D Center, Samsung Electronics, Republic of Korea); Hwangjun Song (Department of Computer Science and Engineering, Pohang University of Science and Technology (POSTECH), Republic of Korea)

Performance of D2D Underlay and Overlay for Elastic Traffic

Prajwal Osti and Pasi Lassila and Samuli Aalto (Aalto University, Finland)

A Virtual Local-hub Solution with Function Module Sharing for Wearable Devices

Hsin-Peng Lin (Chunghwa Telecom Co., Ltd., Taiwan Roc); Yuan-Yao Shih (Academia Sinica, Taiwan Roc); Ai-Chun Pang and Yuan-Yao Lou (National Taiwan University, Taiwan Roc)

Dynamic Adaptive Access Barring Scheme For Heavily Congested M2M Networks

Bouzouita Meriam (Supcom, Tunisia); Hadjadj-Aoul Yassine (University of Rennes 1, France); Zangar Tunisia Nawel (Mediatron, SUPCOM, Tunisia); Rubino Gerardo (INRIA , France); Tabbane Sami (Mediatron,SUPCOM, Tunisia)

[12:15 - 13:30] Lunch Break

[13:30 - 17:15] Poster Session II

[13:30 - 15:00] Session 11: Sensing and Tracking

A Real-time Indoor Tracking System in Smartphones

Jose Luis Carrera and Zan Li and Zhongliang Zhao (University of Bern, Switzerland); Torsten Braun (Institute of Computer Science, Switzerland); Augusto Neto (Federal University of Rio Grande do Norte, Brazil)

Matrix: Multihop Address Allocation and Dynamic Any-to-Any Routing for 6LoWPAN

Bruna Soares Peres and Otavio Augusto de Oliveira Souza and Bruno Pereira Santos and Edson Roteia Araujo Junior and Olga Goussevskaia and Marcos Augusto Menezes Vieira and Luiz Filipe Menezes Vieira and Antonio Alfredo Ferreira Loureiro (Universidade Federal de Minas Gerais, Brazil)

Updating Wireless Signal Map with Bayesian Compressive Sensing

Bo Yang and Suining He and S.-H. Gary Chan (The Hong Kong University of Science and Technology, China)

An Energy-Detection-Based Cooperative Spectrum Sensing Scheme for Minimizing the Effects of NPEE and RSPF

Oladiran G. Olaleye and Muhammad Iqbal and Ahmed Aly and Dmitri Perkins and Magdy Bayoumi (University of Louisiana at Lafayette, USA)

[15:00 - 15:30] Coffee Break

[13:30 - 15:00] Session 12: Wireless Networks

Dynamic Sensitivity Control to improve Spatial Reuse in Dense Wireless LANs

Parag Kulkarni and Fengming Cao (Telecommunications Research Laboratory, Toshiba Research Europe Ltd., United Kingdom)

Normalization of Application Performance in IEEE 802.11 Networks

Joseph Beshay and Ravi Prakash (The University of Texas at Dallas, USA); Andrea Francini (Nokia Bell Labs, USA)

An Efficient Content Delivery Infrastructure Leveraging the Public Transportation Network

Qiankun Su and Katia Jaffres-Runser and Gentian Jakllari and Charly Poulliat (IRIT-INPT/ENSEIHT, University of Toulouse, France)

Coverage Properties of One-Dimensional Infrastructure-Based Wireless Networks

Naveen Kolar Purushothama (Indian Institute of Technology Madras, India); Anurag Kumar (Indian Institute of Science, India)

[17:15] Closing Remarks

Thursday, November 17

[7:30] Registration Opening

[All Day] Concurrent Symposia IV
(Check Individual Symposia Schedules)

MobiWAC 2016

14th ACM International Symposium on Mobility Management and Wireless Access

PE-WASUN 2016

12th ACM International Symposium on Performance Evaluation of Wireless Ad Hoc, Sensor and Ubiquitous Networks

Posters

These works will be presented during Poster Session either I or II.

- **A Deployment Algorithm for Multi-hop Wireless Networks**
- **Effect of Traffic Arrival Distributions on Routing Strategy in Multi-Hop Wireless Networks**
- **Semi-Supervised Manifold Learning Based Localization Algorithm for Vehicular Adhoc Networks**
- **Power in Silence: Revealing the Stationarity of Private-owned Vehicle in Urban Vehicular Ad Hoc Networks**
- **Performance evaluation of link metrics in vehicle networks: a study from the Cologne case**
- **Evaluate the Impact of Mutual Friends and Load Distribution on Epidemic Routing in Delay Tolerant Networks**
- **Flexible Spectrum Sharing in OFDMA Cellular Networks**
- **Channel Access Fairness in IEEE 802.11ac: A Retrospective Analysis and Protocol Enhancement**
- **Stay or Switch? Analysis and Comparison of Delays in Cognitive Radio Networks with Interweave and Underlay Spectrum Access**
- **Architecture Design for the Environmental Monitoring System over the Winter Season**
- **A distributed algorithm using path dissemination for publish-subscribe communication patterns**
- **A Genetic-based Localization Algorithm for Elderly People in Smart Cities**
- **Maximizing Network Lifetime in Wireless Video Sensor Networks Under Quality Constraints**
- **User Mobility under LTE based VPN: QoS and Handover Management**
- **Towards Future Situation-Awareness: A Conceptual Middleware Framework for Opportunistic Situation Identification**
- **Lifetime-Aware Clustering and DAG-Based Routing in WSNs**
- **Anti-Starvation Channel Assignment With Global Conflict Set Selection in IEEE 802.11 WMNs**
- **Wireless network MAC layer performance evaluation with full-duplex capable nodes**
- **Virtual Path Assignment based on Load Balancing for SDNs**
- **Missing Tag Identification in Blocker-enabled RFID Systems**
- **A Distributed and Adaptive Trust Evaluation Algorithm for MANET**
- **Decoupled Uplink/Downlink User Association in HetNets: A Matching with Contracts Approach**
- **Range Based Wireless Sensor Node Localization using Bat Algorithm**
- **RMT, a Wireless Sensor Network Monitoring Tool**
- **A design method for WSN's automatic scheduling generation**
- **INLyD: Inter-Network-Layer Delay as a low-cost quality metric for multi-hop routing in wireless networks**

Symposium/Workshop Technical Program

ACM Q2SWINET Symposium

Sunday, November 13

[07:30] Registration Opens

[08:45 - 9:15] Welcome Message from chairs

[09:15 - 10:30] Session 01: Emerging Trends in Wireless and Mobile Systems-I

Hybrid Storage Service for the Management of Big e-Health Data

Maria Fazio (University of Messina, Italy); Alessia Bramanti (IRCCS Centro Neurolesi Bonino Pulejo, Italy); Antonio Celesti (University of Messina, Italy); Placido Bramanti (IRCCS Centro Neurolesi Bonino Pulejo, Italy); Massimo Villari (University of Messina, Italy)

Profitable Task Allocation in Mobile Cloud Computing

Mojgan Khaledi (University of Utah, USA); Mehrdad Khaledi (Rensselaer Polytechnic Institute, USA); Sneha Kumar Kasera (University of Utah, USA)

Decoupled Uplink/Downlink User Association in HetNets: A Matching with Contracts Approach

Mohammed Kassem, Cengis Hassan and Mahesh K. Marina (The University of Edinburgh, UK)

[10:30 - 11:00] Coffee Break

[11:00 - 12:30] Session 02: Security in Wireless Networks-I

Preserving Location Privacy in Radio Networks Using a Stackelberg Game Framework

Mojgan Khaledi (University of Utah, USA); Mehrdad Khaledi (Rensselaer Polytechnic Institute, USA); Sneha Kumar Kasera and Neal Patwari (University of Utah, USA)

An Authentication and Authorization Infrastructure for the Web of Things

Azzedine Boukerche (University of Ottawa, Canada); Michelle Silva Wangham and Marlon C. Domenech (University of Vale do Itajaí (UNIVALI), Brazil)

A Distributed and Adaptive Trust Evaluation Algorithm for MANET

Dexin Zhao and Zhen Ma (TJUT, Australia); Degan Zhang (Tianjin University of Technology, P.R. China); Si Liu and Nana Du (TJUT, P.R. China); Wenbin Li (Tianjin University of Technology, P.R. China)

[13:00 - 14:00] Lunch Break

[14:00 - 15:00] Session 03: Security in Wireless Networks-II

Exploitation of dual channel transmissions to increase security and reliability in classic Bluetooth piconets

André Zúquete (University of Aveiro, Dep. of Electronics, Telecommunications and Informatics & IEETA, Portugal)

ACM Q2SWINET Symposium

Missing Tag Identification in Blocker-enabled RFID Systems

Xia Wang (Nanjing University; Zaozhuang University, P.R. China); Jia Liu, Li-jun Chen, Feng Zhu and Yanyan Wang (Nanjing University, P.R. China)

[15:50 - 16:20] Coffee Break

[16:20 - 18:00] Session 04: QoS, QoE and Reliability in Wireless Systems-I

Energy-efficient Multicast Screen Mirroring for QoS Support over WiFi Network

Yunmin Go and Hwangjun Song (POSTECH (Pohang University of Science and Technology), Korea)

Lifetime-Aware Clustering and DAG-Based Routing in WSNs

Chuanyao Nie and Hui Wu (University of New South Wales, Australia)

SINR and Reliability based Hidden Terminal Estimation for Next Generation Vehicular Networks

Elif Bozkaya (Istanbul Technical University, Turkey); Kaushik Chowdhury (Northeastern University, USA); Berk Canberk (Istanbul Technical University, Turkey)

Virtual Path Assignment based on Load Balancing for SDNs

Xiaomao Wang, Chuanhe Huang, Kai He and Xiying Fan (Wuhan University, P.R. China); Bin Fu (University of Texas-Pan American, USA)

Monday, November 14

[7:30] Registration Opening

[08:15 - 09:30] Welcome Address and Keynote Speaker

Prof. Hossam Hassanein (Queens University, Canada)

[09:30 - 10:00] Coffee Break

[10:15 - 12:00] Session 05: Emerging Trends in Wireless and Mobile Systems-II

Optimal eNodeB Estimation for 5G Intra-Macrocell Handover Management

Tuğçe Bilen (Istanbul Technical University, Turkey); Trung Q. Duong (Queen's University Belfast, United Kingdom); Berk Canberk (Istanbul Technical University, Turkey)

Towards Future Situation-Awareness: A Conceptual Middleware Framework for Opportunistic Situation Identification

Junfeng Zhao, Jiangtao Wang and Yasha Wang (Peking University, P.R. China); Lixia Bao (Shanghai Urban Construction Design and Research Institute, P.R. China); Kai Yang and He Yuanduo (Peking University, P.R. China)

Symposium/Workshop Technical Program

ACM Q2SWINet Symposium

Anti-Starvation Channel Assignment With Global Conflict Set Selection in IEEE 802.11 WMNs

Ying Qu, Bryan Ng and Hang Yu (Victoria University of Wellington, New Zealand)

Wireless network MAC layer performance evaluation with full-duplex capable nodes

William Jones (University of Bristol & Toshiba Research Europe Limited, United Kingdom); R Eddie Wilson (University of Bristol, United Kingdom); Mahesh Sooriyabandara (Toshiba Research Europe Limited, United Kingdom); Angela Doufexi (University of Bristol, United Kingdom)

[12:00 - 14:00] Lunch Break

[14:00 - 16:00] Session 06: QoS, QoE and Reliability in Wireless Systems-II: Short Papers Session

Evaluation of the Power Consumption of Image descriptors on Smartphone Platforms

Abdelhamid Mamperi and Azzedine Boukerche and Depu Zhou (University of Ottawa, Canada)

A Comparative Study of Data Aggregation Approaches for Wireless Sensor Networks Ayesha

Naureen and Ning Zhang (University of Manchester, United Kingdom)

Internet of Things: Security in the Keys

Sabrina Sicari and Alessandra Rizzardi (University of Insubria, Italy); Daniele Miorandi (U-Hopper, Italy); Alberto Coen-Porisini (University of Insubria, Italy)

How interactions between RPL and Radio Duty Cycling protocols affect QoS in Wireless Sensor Networks

Maite Bezugantea (Vrije Universiteit Brussel, Belgium); Miguel Gamallo (Universidad Pública de Navarra, Spain); Jacques Tiberghien (Vrije Universiteit Brussel & Université Libre de Bruxelles, Belgium); Kris Steenhaut (Vrije Universiteit Brussel, Belgium)

[16:00] Closing Remarks

ACM DIVANET Symposium

Sunday, November 13

[08:30] Registration Opens

[10:45 - 11:00] Welcome Message from co-chairs

[11:00 - 12:30] Session 01: Performance and Optimization

Random Access Optimization for M2M Communications in VANET with Wireless Network Virtualization

Meng Li, (Beijing University of Technology, China); Fei Richard Yu, (Carleton University, Canada); Pengbo Si and Enchang Sun and Yanhua Zhang, (Beijing University of Technology, China)

From Random Process to Chaotic Behavior in Swarms of UAVs

Martin Rosalie and Gregoire Danoy, (University of Luxembourg, Luxembourg); Serge Chaumette, (Univ. Bordeaux, France); Pascal Bouvry, (University of Luxembourg, Luxembourg)

Comparative Analysis of BLM detector in AF and DF Relays Based Cooperative Wireless Networks

Omar Gatera, (Istanbul Technical University, Turkey); Haci Ilhan, (Yildiz Technical University, Turkey); Ahmet Hamdi Kayran, (Istanbul Technical University, Turkey)

[12:30 - 13:30] Lunch Break

[13:30 - 15:00] Session 02: Characterization and Security

Paving the way for Intelligent Transport Systems: Privacy Implications of Vehicle Infotainment and Telematics Systems

Kushal Jaisingh, (University of Ontario Institute of Technology (UOIT), Canada); Dr. Khalil El-Khatib, (University of Ontario Institute of Technology (UOIT), Canada); Dr. Rajen Akalu, (University of Ontario Institute of Technology (UOIT), Canada)

Identifying Relationships in Vehicular Sensor Data: A Case Study and Characterization

Paulo H. L. Rettore and André B. Campolina, (Federal University of Minas Gerais, Brazil); Leandro A. Villas, (State University of Campinas, Brazil); Antonio A. F. Loureiro, (Federal University of Minas Gerais, Brazil)

Software-defined Vehicular Ad Hoc Networks with Trust Management

Dajun Zhang and Fei Richard Yu and Zhexiong Wei, (Carleton University, Canada)

[15:00 - 15:30] Coffee Break

[15:30 - 17:00] Session 03: Vehicular Applications

Vehicular Digital Forensics: What Does My Vehicle Know About Me?

Jesse Lacroix and Khalil El-Khatib and Rajen Akalu, (University of Ontario Institute of Technology, Canada)

Symposium/Workshop Technical Program

ACM DIVANET Symposium

Delay Tolerant and Predictive Data Dissemination Protocol (DTP-DDP) for urban and highway vehicular ad hoc networks (VANETs)

Tomo Nikolovski and Richard Werner Pazzi, (University of Ontario Institute of Technology, Canada)

A Media-Aware Transmission Framework for 3D-HEVC Over LTE Networks

Basak Oztas, (University of British Columbia, Canada); Mahsa T. Pourazad, (TELUS Communications Inc., Canada); Panos Nasiopoulos and Victor C. M. Leung, (University of British Columbia, Canada)

Monday, November 14

[09:45 - 10:45] Keynote Speech

Use of Optimization Models for Resource Allocation in Wireless Ad Hoc and Sensor Networks

Prof. Kin K. Leung (Imperial College, UK)

[10:45 - 11:15] Coffee Break

[15:30 - 17:00] Session 04: Networking and the Cloud

The Effect of Hidden Terminal Interference on Safety-Critical Traffic in Vehicular Ad Hoc Networks

Saeed Bastani and Bjorn Landfeldt, (Lund University, Sweden)

LOGR: Joint LLocalization and Geographic Routing-based Data Dissemination in Wireless Sensor Networks with Mobile Sinks

Mauricio Bertanha and Richard W. Pazzi, (University of Ontario Institute of Technology, Canada)

On Developing Smart Transportation Applications in Fog Computing Paradigm

Nam Ky Giang and Victor C.M. Leung and Rodger Lea, (University of British Columbia, Canada)

ACM DIVANET Symposium

[12:30 - 13:30] Lunch Break

[13:30 - 15:00] Session 05: Wireless Communication

A Deployment Algorithm for Multi-hop Wireless Networks

Hongchun Li and Chen Ao and Yi Xu and Jun Tian and Koichiro Yamashita, (Fujitsu Laboratories, LTD., Japan)

Effect of Traffic Arrival Distributions on Routing Strategy in Multi-Hop Wireless Networks

Canan Aydogdu, (Izmir Institute of Technology, Turkey)

Simulating Wireless Links Within a Dynamic Environment

Juan A. Cruz-Carlon, (Universidad Nacional Autonoma de Mexico, Mexico)

[15:00 - 15:30] Coffee Break

[15:30 - 17:00] Session 06: Characterization and Analysis

Performance Evaluation of Link Metrics in Vehicle Networks: a Study from the Cologne Case

Jun Zhang, (Telecom ParisTech, University of Paris-Saclay, France); Meng Ying Ren, (Telecom ParisTech, University of Paris-Saclay & University of Technology of Troyes, France); Houda Labiod, (Telecom ParisTech, University of Paris-Saclay, France)

Power in Silence: Revealing the Stationarity of Private-owned Vehicle in Urban Vehicular Ad Hoc Networks

Heng Li, (Hunan University, China); Yonghe Liu, (The University of Texas at Arlington Arlington, USA); Siwang Zhou, (Hunan University, China)

[17:00 - 17:15] Discussion and Closing Remarks

ACM PE-WASUN Symposium

Wednesday, November 16

[08:30] Registration Opens

[13:30 - 17:15] Poster/Demo Session

Wednesday, November 16

[08:30] Registration Opens

[08:30 - 10:10] Session 01: Vehicular Networks

Adaptive Video-streaming Dissemination in Realistic Highway Vehicular Ad-Hoc Networks

Cristhian Iza-Paredes, Ahmad Mohamad Mezher, and Monica Aguilar Igartua (Universitat Politècnica de Catalunya (UPC), Spain)

Mechanisms for enhancing the performance of routing protocols in VANETs

Christos Bouras, Vaggelis Kapoulas, and Nikos Stathopoulos (University of Patras, Greece); Apostolos Gkamas (University Ecclesiastical Academy of Vellas, Greece)

Prediction Model Analysis of Short-term Traffic Flow for Vehicular Clouds

Fan Zhang, Robson E. De Grande, and Azzedine Boukerche (University of Ottawa, Canada)

A note on the causes degrading communication between RSUs and vehicles in overloaded conditions

Thomas Begin (Université Claude Bernard - Lyon 1, France); Azzedine Boukerche (DIVA Lab, University of Ottawa, Canada)

[10:10 - 10:40] Coffee Break

[10:40 - 11:45] Session 02: Sensor Networks

Statistical Delay Bound for WirelessHART Networks

Neda Petreska (Fraunhofer Institute for Embedded Systems and Communication Technologies, Germany); Hussein Al-Zubaidey (Royal Institute of Technology KTH, Sweden); Barbara Staehle (University of Applied Sciences Konstanz, Germany); Rudi Knorr (Fraunhofer Institute for Embedded Systems and Communication Technologies ESK, Germany); James Gross (Royal Institute of Technology KTH, Sweden)

Range Based Wireless Sensor Node Localization using Bat Algorithm

Eva Tuba and Milan Tuba (John Naisbitt University, Serbia); Dana Simian (Lucian Blaga University, Romania)

ACM PE-WASUN Symposium

RMT, a Wireless Sensor Network Monitoring Tool

Christiana Ioannou, Vasos Vassiliou, and Charalambos Sergiou (University of Cyprus, Cyprus)

[11:45 - 12:10] Session 03: Testbeds and Experiments

Importance of Repeatable Setups for Reproducible Experimental Results in IoT

Georgios Z. Papadopoulos (Telecom Bretagne, France); Antoine Gallais, Guillaume Schreiner, and Thomas Noel (University of Strasbourg, France)

[12:10 - 13:45] Lunch Break

[13:45 - 14:35] Session 03: Testbeds and Experiments (Continued)

Rover. Poor (but Elegant) Man's Testbed

Zacharie Brodard and Hao Jiang (Telecom Bretagne, France); Tengfei Chang (Inria, France); Thomas Watteyne (Inria, France); Xavier Vilajosana (Univ. Oberta de Catalunya, Spain); Pascal Thubert and Geraldine Texier (Telecom Bretagne, France)

Time-independent experiment reproducibility: turning the Walt platform into a time machine

Etienne Dublé (CNRS, France); Pierre Brunisholz, Franck Rousseau, and Andrzej Duda (Grenoble Alps University, France)

[14:35 - 15:05] Coffee Break

[15:05 - 16:10] Session 04: Routing and Broadcast

A Distributed Algorithm for Maximizing Linear Tree Density for One to Many Wireless Communication

James Pope and Robert Simon (George Mason University, USA)

Interplay of Link Quality Estimation and RPL Performance: an Experimental Study

Carlo Vallati (University of Pisa, Italy); Emilio Ancillotti and Raffaele Bruno (IIT-CNR, Italy); Enzo Mingozi and Giuseppe Anastasi (University of Pisa, Italy)

INLyD: Inter-Network-Layer Delay as a low-cost quality metric for multi-hop routing in wireless networks

Syed Rehan Afzal, Majid Nabi, Sander Stuijk, and Twan Basten (Eindhoven University of Technology, Netherlands)

[16:10 - 17:00] Discussion on Reproducible Research and Closing

Symposium/Workshop Technical Program

ACM MOBIWAC Symposium

Wednesday, November 16

[08:30] Registration Opens

[10:30 - 10:45] Welcome Message from co-chairs

[10:45 - 12:30] Session 01: Wireless Sensor Networks

Maximizing Network Lifetime in Wireless Video Sensor Networks Under Quality Constraints

Nesrine Khernane and Jean-Francois Couchot and Ahmed Mostefaoui, (FEMTO-ST Institute University of Franche-Comte, France)

Integrated Connectivity and Coverage Techniques for Wireless Sensor Networks

Peng Sun and Azzedine Boukerche, (University of Ottawa, Canada)

A Design Method for WSN's Automatic Scheduling Generation

Anis Mezni, (University of Tunis El Manar, Tunisia); Emil Dumitrescu, (INSA-Lyon, France); Eric Niel, (INSA-Lyon, France); Samir Ben Ahmed, (University of Tunis El Manar, Tunisia)

Architecture Design for the Environmental Monitoring System over the Winter Season

Koichiro Yamashita and Takahisa Suzuki and Hongchun Li and Chen Ao and Yi Xu and Jun Tian, (Fujitsu Research & Development Center CO., LTD., China); Keiji Kimura and Hironori Kasahara, (Waseda University, Japan)

[12:30 - 13:30] Lunch Break

[13:30 - 15:00] Session 02: Optimization and Performance

Stay or Switch? Analysis and Comparison of Delays in Cognitive Radio Networks with Interweave and Underlay Spectrum Access

Fidan Mehmeti, (University of Waterloo, Canada); Thrasivoulos Spyropoulos, (Institute Eurecom, France)

Evaluate the Impact of Mutual Friends and Load Distribution on Epidemic Routing in Delay Tolerant Networks

Haohao Zhou and Yahui Wu and Su Deng and Hongbin Huang, (National University of Defense Technology, China)

Channel Access Fairness in IEEE 802.11ac: A Retrospective Analysis and Protocol Enhancement

Raja Karmakar, (TICT Kolkata, India); Samiran Chattopadhyay, (Jadavpur University, India); Sandip Chakraborty, (IIT Kharagpur, India)

[15:00 - 15:30] Coffee Break

ACM MOBIWAC Symposium

[13:30 - 15:00] Session 03: Wireless Communications and Applications

Flexible Spectrum Sharing in OFDMA Cellular Networks

Yue Liu and Xu Yang and Ka Seng Chou, (Macao Polytechnic Institute, Macao)

A Distributed Algorithm Using Path Dissemination for Publish-Subscribe Communication Patterns

Stephane Kundig and Pierre Leone and Jose Rolim, (Unige, Switzerland)

A Genetic-based Localization Algorithm for Elderly People in Smart Cities

Zaineb Liouane, (LARATSI - ENIM School, Tunisia); Tayeb Lemlouma, (IRISA University of Rennes1, France); Philippe Roose, (LIUPPA/T2i - UPPA, France); Frederic Weis, (IRISA - University of Rennes1, France); Hassani Messaoud, (LARATSI - ENIM School, France)

User Mobility under LTE based VPN: QoS and Handover Management

Maroua Gharam and Noureddine Boudriga, (Communication Networks and Security Research Lab, University of Carthage, Tunisia)

Wednesday, November 16

[08:30 - 10:15] Session 04: Routing and Data Dissemination

A new Framework for Data Routing Management in Smartphones

Gabriel Tomiatti Andreazi Andreazi, (Federal Institute of São Paulo, Brazil); Azzedine Boukerche, (University of Ottawa, Canada); Luis Hideo Vasconcelos Nakamura and Marcio Andrey Teixeira and Daniel Correa Lobato and Rodolfo Ipolito Meneguette, (Federal Institute of São Paulo, Brazil)

The Emergency Direct Mobile App: Safety Message Dissemination over a Multi-Group Network of Smartphones using Wi-Fi Direct

Marco Di Felice and Luca Bedogni and Luciano Bononi, (University of Bologna, Italy)

QoE QoS Mapping for YouTube Services over LTE Network

Alessandro Vizzarri, (University of Rome Tor Vergata, Italy); Fabrizio Davide, (University of G. Marconi, Italy)

On Fairness Evaluation: LTE-U vs. LAA

Zoraze Ali and Biljana Bojovic and Lorenza Giupponi and Josep Mangues Bafalluy, (Centre Tecnologico de Telecomunicaciones de Catalunya (CTTC), Spain)

[10:15 - 10:45] Coffee Break

Symposium/Workshop Technical Program

ACM MOBIWAC Symposium

[10:45 - 12:30] Session 05: Vehicular networks and applications

SecVLC: Secure Visible Light Communication for Military Vehicular Networks

Seyhan Ucar and Sinem Coleri Ergen and Oznur Ozkasap, (Koc University, Turkey); Dobroslav Tsonev and Harald Burchardt, (PureLifi Ltd., United Kingdom)

Exploring Interactions in Vehicular Networks

Felipe Domingos da Cunha, (Federal University of Minas Gerais, Brazil); Davidsson A. Alvarenga, (PUC Minas, Brazil); Guilherme Maia, (Federal University of Minas Gerais, Brazil); Aline Carneiro Viana, (INRIA, France); Raquel Aparecida de Freitas Mini, (PUC Minas, Brazil); Antonio Alfredo Ferreira Loureiro, (Federal University of Minas Gerais, Brazil)

MoVeNet: Mobility Management for Vehicular Networking

Tobias Rueckelt, (Adam Opel AG, Germany); Halis Altug, (Daimler AG, Germany); Daniel Burgstahler and Doreen Bohnstedt and Ralf Steinmetz, (Technische Universität Darmstadt, Germany)

Localization with Guaranteed Bound on the Position Error using a Drone

Cristina M. Pinotti, (University of Perugia, Italy); Francesco Betti Sorbelli, (University of Florence, Italy); Pericle Perazzo, (University of Pisa, Italy); Gianluca Dini, (University of Pisa, Italy)

[12:30 - 13:30] Lunch Break

[13:30 - 15:30] Session 06: Mobility Profiling and Analysis

Leveraging on Mobility Models for Sensor Network Lifetime Modeling

Lorenzo Donatiello, (University of Bologna, Italy); Gustavo Marfia, (University of Bologna, Italy)

Wi(deband)-Fi: a Proposal for an Opportunistic Wideband Architecture based on Wi-Fi

Guevara Noubir, (Northeastern University, USA); Muriel Medard, (MIT, USA); Peter Chin, (Boston University, USA)

Comparison of Point to Point and MBSFN transmissions in Next Generation Mobile Networks

Christos Bouras and Nikos Kanakis and Vasileios Kokkinos, (Computer Technology Institute & Press Diophantus, Computer Engineering and Informatics Dept., Greece); Nikolaos Papachristos and Demosthenes Vouyioukas, (Dept. of Information & Communication System Engineering, Univ. of Aegean, Greece)

User Profiling Through NFC Interactions: Mining NFC-based User Information from Mobile Devices and Back-End Systems

Anders Andersen and Randi Karlsen, (UiT The Arctic University of Norway, Norway)

[15:03 - 16:00] Discussion and Closing Remarks

The Reginald Fessenden Award

The ACM MSWiM main Conference has established the Reginald Fessenden award to be given each year to a conference participant in recognition of exceptional scientific contributions to the field of wireless communication and networking, and mobile systems. The award was initiated in 2014 and named after Reginald Fessenden (October 6, 1866 - July 22, 1932), a Canadian pioneering of Radio Broadcasting who designed the first radio transmission of the human voice. He is widely known as the "Father" of Radio Broadcasting, and he developed amplitude modulation (AM), as well as perfected new means of sending Morse code, presenting over 200 additional patents in his portfolios and including a earlier version of sonar. The selection committee is composed by the Steering Committee Chairs, and the awardee is appointed upon recommendation from the Technical Program Chairs and the General Chairs, who have been responsible for the technical program of the conference, including inviting the speakers. The award is presented to the winner at the Conference Banquet for that specific year.

The winner of the ACM MSWiM'16 Reginald Fessenden Award will be announced at the Conference Banquet Dinner.

Past Award Winners



[2015] Prof. Mario Gerla for his outstanding work in the development of Routing, Transport Protocols, and Applications in Mobile Wireless Networks.



[2014] Prof. Ian F. Akyildiz for pioneering contributions for modeling and analysis of cellular and multihop wireless communication systems.



General Information

Conference Venue

MSWiM 2016 Main Conference and its allocated Symposia/Workshops will be hosted at the Excelsior Hotel.

Great Siege Road
Floriana FRN1810
Malta

Tel: +(356) 2125 0520

Wi-Fi

Information about Wi-Fi access will be provided on conference site, at the registration Desk.



Malta

Malta is a Southern European island country consisting of an archipelago in the Mediterranean Sea. Malta is known for its tourist attractions ranging from its beautiful coastline to the British influenced architecture. The uniqueness of Malta has led to many multimedia productions choosing this country as a filming location, including the widely popular series Game of Thrones.

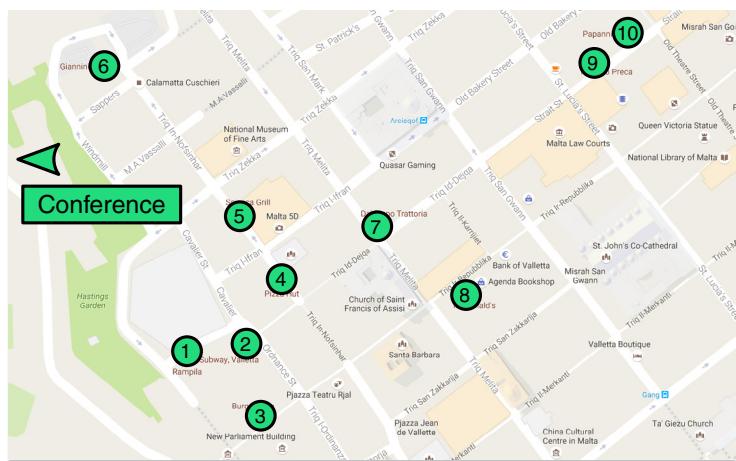
Banquet Evening

MSWiM 2016 is glad to host a banquet evening on Tuesday, November 15th. More details will be provided at the registration Desk.



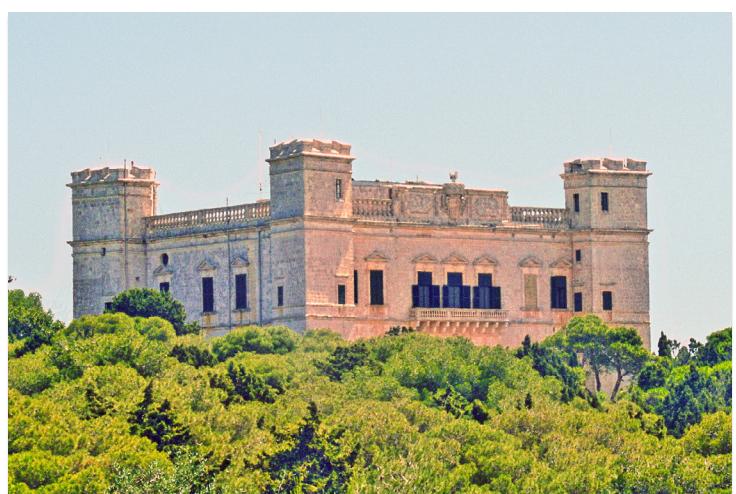
Restaurants

1. **Rampila**
2. **Subway**
3. **Burger King**
4. **Pizza Hut**
5. **Sciacca Grill**
6. **Giannini**
7. **Da' Pippo Trattoria**
8. **McDonald's**
9. **Palazzo Preca**
10. **Papannis**



Verdala Palace

Malta is a Southern European island country consisting of an archipelago in the Mediterranean Sea. Malta is known for its tourist attractions ranging from its beautiful coastline to the British influenced architecture. The uniqueness of Malta has led to many multimedia productions choosing this country as a filming location, including the widely popular series Game of Thrones.



Blue Grotto

The Blue Grotto is a popular destination for tourists on the island of Malta with boat trips to visit the caves, scuba diving snorkeling and rock climbing being the most popular activities here. It also has some typical local restaurants that offer good food with stunning views. The location has been used many times by filmmakers, including a Milk Tray advert showing a cliff diver jumping 30m into the sea, numerous promotional videos about Malta, a scene of the 2004 film Troy and most recently in a RAI TV 2 filming for the popular travel programme Sereno Variabile



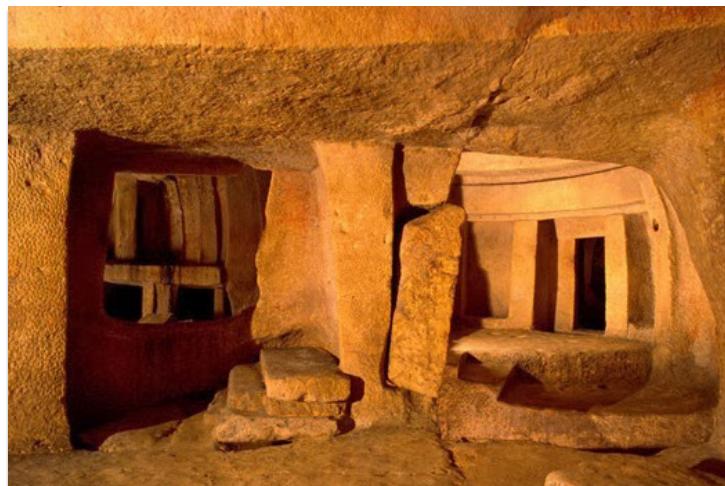
Valletta Waterfront

The Valletta Waterfront, also known as the Valletta Marina, is a waterfront in Floriana, Malta, mainly featuring three prominent buildings; a church in the middle, the Pinto Stores or the Pinto Wharf on the left, and the Forni Stores or the Forni Shopping Complex on the right. The buildings were originally stores and warehouses, built in the 18th century, and designed by Romano Carapecchia. The area now plays a role in Malta's cruise liner business as the Forni Cruise Passenger Terminal, and hosts a concentration of bars, retail outlets and restaurants.



Hipogeu de Hal Saflieni

The Hypogeum of Hal-Saflieni is a subterranean structure dating to the Saflieni phase (~3300 BC) in Maltese prehistory, located in Paola, Malta. It is often simply referred to as the Hypogeum, literally meaning "underground" in Greek. The Hypogeum is thought to have been originally a sanctuary, but it became a necropolis in prehistoric times and more than 7000 individual have been found.



Skorba Temples

The Skorba temples are megalithic remains on the northern edge of Żebbiegħ, in Malta, which have provided detailed and informative insight into the earliest periods of Malta's neolithic culture. The site was only excavated in the early 1960s, rather late in comparison to other megalithic sites, some of which had been studied since the early 19th century. The site's importance has led to its listing as a UNESCO World Heritage Site.





**We are very pleased to welcome you to MSWiM 2016, held in Malta.
We are confident that both the conference and your stay in Malta will be
informative, interesting and above all enjoyable!**

MSWiM 2016 Organizing Committee

VISION

For over a decade, MSWiM has established itself as a premier conference in the areas of modeling, analysis and performance evaluation of wireless and mobile systems. The importance of these areas is becoming more evident, year-by-year, with the unprecedented ubiquity and capability of mobile systems. There is no doubt that research in these areas will remain essential to the design of efficient mobile systems and the future Internet.

STRONG PROGRAM

In 2016, the call for papers attracted a large number of registered papers in all areas of mobile and wireless systems. This allowed us to build a very strong and valuable program through a thorough reviewing process, presenting an acceptance ratio of 27%. The submitted papers came from 36 countries, reflecting the truly international profile of MSWiM. Members of the Technical Program Committee are affiliated to universities and industry in 17 countries spread over five continents.

CO-LOCATED EVENTS

Co-located with the ACM MSWiM 2016 Conference, the Symposia are covering several specializations within mobile and wireless systems: Mobility management and wireless access (MobiWAC); Performance evaluation of wireless ad hoc, sensor, and ubiquitous networks (PE-WASUN); Design and Analysis of Intelligent Vehicular networks and Applications (DIVANet); QoS and Security for Wireless and Mobile Networks (Q2SWinet).