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the problems landscape, we adopt a simple probabilistic graph model where sensing and communication devices of the nodes fail independently. We illustrate the development of such approaches for WSN tasks involving surveillance and area coverage. We also discuss possible future research directions.

Bio: Prof. E. Elmallah is a Professor at the Department of Computing Science at the University of Alberta in the areas of networks architecture, resource management algorithms and protocols, performance evaluation, and combinatorial algorithms for scheduling and network reliability analysis. Dr. Elmallah obtained Ph.D. in Computing Science from the University of Waterloo, M.Sc. in Computing Science from the University of Saskatchewan, and B.Sc. in Computer and Systems Engineering from Alexandria University. He has numerous publications in reputable journals and conferences in various areas of computer networks and combinatorial algorithms. He delivered invited talks to a wide spectrum of audience including academics in the fields of combinatorial algorithms, computer networks, and modelling and performance evaluation. He is a Foundation Fellow of the Institute of Combinatorics and its Applications and a senior member of the IEEE. He has served on the organizing and program committees of numerous international conferences.

SenseApp: Applications I

Room: Salon B

Where is That Car Parked? A Wireless Sensor Network-Based Approach to Detect Car Positions
Daniel Burgstahler (Technische Universität Darmstadt, Germany), Fabian Knapp (Technische Universität Darmstadt, Germany), Sebastian Zöller (Technische Universität Darmstadt & Multimedia Communications Lab - KOM, Germany), Tobias Rueckelt (Technische Universität Darmstadt, Germany) and Ralf Steinmetz (Technische Universität Darmstadt, Germany)
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On the Potential of Wireless Sensor Networks for the In-Field Assessment of Bio-Physical Crop Parameters
Jan Bauer (University of Osnabrück & Institute of Computer Science, Germany), Bastian Siegmann (University of Osnabrück, Germany), Thomas Jarmer (University of Osnabrück, Germany) and Nils Aschenbruck (University of Osnabrück, Germany)
pp. 523-530

PowerSAX: Fast Motif Matching in Distributed Power Meter Data Using Symbolic Representations
Andreas Reinhardt (The University of New South Wales, Australia) and Sebastian Koessler (The University of New South Wales, Germany)
pp. 531-538

Real-time On-Demand Multi-Hop Audio Streaming with Low-Resource Sensor Motes
CongDuc Pham (University of Pau, France), Philippe Cousin (eGlobalMark, France) and Arnaud Carer (University of Rennes 1 & IRISA, France)
pp. 539-543

10:30 - 11:00

Coffee break

11:00 - 12:00

SenseApp: Keynote: Wireless Beyond Wi-Fi

Dr. Matt Reynolds
Room: Salon B

Abstract: Wireless communication has already enabled the phenomenal growth of mobile computing. But what other impacts can Maxwell's four humble equations have on the world of computing? In this talk I will show some examples of how advances in the wireless world can change the way we think about computing through innovations in energy, communication, sensing, and imaging.

One example is a tiny wireless backpack that enables neural and EMG telemetry from dragonflies in flight, with a 5 Mbps uplink, 1.2mW total power, and a weight of only 38 mg. The backpack is wirelessly powered and employs a modulated backscatter communication link that achieves an energy cost of only a few pJ/bit, over 100X lower energy per bit than Wi-Fi. I will then present results that extend MIMO techniques from communication to wireless power transmission, to enhance long range wireless

power delivery to mobile devices, and some results, recently reported in Science, on lensless compressive imaging at millimeter wavelengths.

Bio: Matt Reynolds is an Associate Professor in the Departments of Electrical Engineering and Computer Science and Engineering at the University of Washington. He was previously the Nortel Networks Assistant Professor in the Department of Electrical and Computer Engineering at Duke University. He is also co-founder of the RFID systems firm ThingMagic Inc (acquired by Trimble Navigation), the energy conservation firm Zensi (acquired by Belkin), and the home sensing company SNUPI Inc.

Matt's research interests include RFID, energy efficiency at the physical layer of wireless communication, and the physics of sensing and actuation. Matt received the Ph.D. from the MIT Media Lab in 2003, where he was a Motorola Fellow, as well as S.B. and M.Eng. degrees in Electrical Engineering and Computer Science from MIT. He is a Senior Member of the IEEE, has received five Best Paper awards, and has 17 issued and over 40 pending patents.

11:00 - 12:30

P2MNet: Session2: Wireless Sensor networks

Room: Lacombe

Reconnection Strategies in WSN Running RPL
Anne-Lena Kampen (Bergen University College & NTNU, Norway), Knut Ovsthus (Bergen University College, Norway) and Øivind Kure (Norwegian University of Science and Technology (NTNU), Norway)
pp. 602-609

Greedy Path Planning for Maximizing Value of Information in Underwater Sensor Networks
Fahad Khan (University of Central Florida & University of Engineering & Technology Lahore, USA), Saad Khan (University of Central Florida & University of Engineering and Technology Lahore, USA), Damla Turgut (University of Central Florida, USA) and Ladislau Bölöni (University of Central Florida, USA)
pp. 610-615

Connectivity Restoration in Disjoint Wireless Sensor Networks Using Centrality Measures
Izzet F Senturk (The Ohio State University, USA) and Kemal Akkaya (Southern Illinois University, USA)
pp. 616-622

12:00 - 12:40

SenseApp: Applications II

Room: Salon B

Distributed Mobile Group Detection Algorithms: Application to Cycling Race
Matthieu Lauzier (INRIA - CITI Laboratory, France), Antoine Fraboulet (HiKoB, France), Jean-Marie Gorce (INSA-Lyon, France) and Tanguy Risset (CITI Laboratory - INSA Lyon, France)
pp. 544-551

Simple RESTful Sensor Application Development Model Using CoAP
Girum K Teklemariam (Ghent University - iMinds & Ghent University - iMinds, Belgium), Jeroen Hoebeke (Ghent University - iMinds, Belgium), Floris Van den Abeele (Ghent University - iMinds, Belgium), Ingrid Moerman (Ghent University - IBBT, Belgium) and Piet Demeester (Ghent University - iMinds, Belgium)
pp. 552-556

12:30 - 13:30

Lunch break

13:30 - 15:00

P2MNet: Session 3: QoS Analysis of Mobile Networks

Room: Lacombe

Modelling Download Throughput of LTE Networks
Joe Cainey (OpenSignal, United Kingdom), Brendan Gill (OpenSignal, United Kingdom), Samuel Johnston (OpenSignal, United Kingdom), James Robinson (OpenSignal, United Kingdom) and Sam Westwood (OpenSignal, United Kingdom)
pp. 623-628

A Fuzzy Logic Approach for Quality of Service Quantification in Wireless and Mobile Networks
Farnaz Farid (University of Western Sydney, Australia), Seyed Shahrestani (University of Western Sydney, Australia) and Chun Ruan (UWS, Australia)
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An Intelligent Traffic Light Scheduling Algorithm Through VANETs
Maram Bani Younes (University of Ottawa, Canada) and Azzedine Boukerche (University of Ottawa, Canada)
pp. 637-642

13:30 - 14:10

WNM: Keynote: Listening to Noise (and making sense of it)

Ioanis Nikolaidis (University of Alberta, Canada)
Room: Klondike

The research on Wireless Sensor Networks (WSNs) is often motivated through applications that involve monitoring of the natural environment far from, or rarely involving, human presence. The upshot of such deployments is that, apart from the whimsical nature of wireless propagation, the wireless channel is expected to be "quiet". On the contrary, urban environments, where every imaginable machine and electrical gadget might be in operation are unfriendly to WSNs because interference is ever-present and likely to become rampant in the future. Not all interference is due to communication devices. Microwave ovens, electrical motors, lighting systems, internal combustion engine ignition systems, etc. are some of the many faces of interference WSN deployments face in urban environments. All the same, in keeping with the WSN design philosophy of making nodes as inexpensive as possible, we do not wish to endow each node with elaborate physical layer capabilities beyond what one can find in off-the-shelf components. In other words, WSN nodes may have to learn to live amidst a sea of interference. Is there at least something we can do about it using information that the nodes are already capable of collecting?

We review some of the interesting observations made with respect to interference based on data we collected in an urban indoor WSN, as well as other relevant experiments that have appeared in the literature. We find that, equipped with the bare minimum of (and inexpensive to conduct) observations, namely using the Received Signal Strength Indicator (RSSI) listening to the background noise, we can distinguish a handful of interference patterns. We therefore develop classification schemes for those patterns. We address some of the questions of how classification of interference can be performed accurately and in the small resource footprint of WSN nodes such that each node can, on its own, decide on the nature of the interference it is observing. We also explore a few ideas on how, once classified, interference can be exploited to the WSN nodes' advantage, and whether per-node classification and subsequent consensus across nodes is a useful strategy.

13:45 - 15:00

SenseApp: Deployment and Programming

Room: Salon B
Chair: Andreas Reinhardt (The University of New South Wales, Australia)

WRENSys: Large-Scale, Rapid Deployable Mobile Sensing System
Kyeong T Min (University of Utah, USA), Andrzej Forys (University of Utah, USA), Anh Luong (University of Utah, USA), Enoch Lee (University of Utah, USA), Jon Davies (University of Utah, USA) and Thomas Schmid (University of Utah, USA)
pp. 557-565

SensEH: From Simulation to Deployment of Energy Harvesting Wireless Sensor Networks
Riccardo Dall'Ora (University of Trento, Italy), Usman Raza (University of Trento, Italy), Davide Brunelli (University of Trento, Italy) and Gian Pietro Picco (University of Trento, Italy)
pp. 566-573

Design and Compilation of an Object-Oriented Macroprogramming Language for Wireless Sensor Networks
Felix Jonathan Oppermann (Graz University of Technology, Austria), Kay Römer (Graz University of Technology, Austria), Luca Mottola (Politecnico di Milano-Italy and Swedish Institute of Computer Science (SICS), Italy), Gian Pietro Picco (University of Trento, Italy) and Andrea Gaglione (Imperial College London, United Kingdom)
pp. 574-582

14:10 - 15:00

WNM: Session 1

Room: Klondike

BoxingExperience: Measuring QoS and QoE of Multimedia Streaming Using NS3, LXC and VLC
Javier Bustos-Jiménez (Universidad de Chile, Chile), Rodrigo Alonso (Universidad de Chile, Chile), Camila Faúndez (NIC Chile Research Labs, Chile) and Hugo Méric (INRIA Chile, Chile)
pp. 658-662

Identification of Network Measurement Challenges in OpenFlow-based Service Chaining
RajaRevanth Narisetty (University of Houston, USA) and Deniz Gurkan (University of Houston, USA)
pp. 663-670

15:00 - 15:30

Coffee break

15:30 - 16:25

SenseApp: Radio and MAC

Room: Salon B

Estimating Packet Reception Rate in Noisy Environments
James Brown (Lancaster University, United Kingdom), Utz Roedig (Lancaster University, United Kingdom), Carlo Alberto Boano (Graz University of Technology, Austria) and Kay Römer (Graz University of Technology, Austria)
pp. 583-591

Predicting RF Path Loss in Forests Using Satellite Measurements of Vegetation Indices
Sujuan Jiang (University of Alberta, Canada), Carlos Portillo (University of Alberta, Canada), Arturo Sanchez-Azofeifa (University of Alberta, Canada) and Mike H. MacGregor (University of Alberta, Canada)
pp. 592-596

Optimizing Guard Time for TDMA in a Wireless Sensor Network - Case Study
Oday Jubran (University of Oldenburg, Germany) and Bernd Westphal (University of Freiburg, Germany)

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15:30 - 18:00

P2MNet: Session 4: Performance Analysis of Wireless Networks

Room: Lacombe

Deployment Strategies and Performance Analysis of Macrocell and Femtocell Networks in Suburban Environment with Modern Buildings

Syed Fahad Yunas (Tampere University of Technology, Finland), Ari Asp (Tampere University of Technology, Finland), Jarno Niemelä (Tampere University of Technology, Finland) and Mikko Valkama (Tampere University of Technology, Finland)

pp. 643-651

Empirical Investigation of the Effect of the Door's State on Received Signal Strength in Indoor Environments At 2.4 GHz

Alaa Alhamoud (Darmstadt University of Technology, Germany), Michael Kreger (Darmstadt University of Technology, Germany), Haitham Afifi (German University in Cairo, Egypt), Christian Gottron (Technische Universität Darmstadt, Germany), Daniel Burgstahler (Technische Universität Darmstadt, Germany), Frank Englert (Technische Universität Darmstadt, Germany), Doreen Böhnstedt (Technische Universität Darmstadt, Germany) and Ralf Steinmetz (Technische Universität Darmstadt, Germany)

pp. 652-657

15:30 - 16:10

WNM: Keynote: Network Performance Measurement for Real-Time Multiplayer Mobile Games

Dwight Makaroff (University of Saskatchewan, Canada)

Room: Klondike

Player satisfaction with real-time multiplayer mobile games is known to be directly correlated with performance of the communications network, particularly with variation in latency (jitter). The network is the most dynamic component of such games, and congestion and channel loss figure prominently in achieving the latency bounds required for real-time response. The upper bound on message delivery latency for a game to be considered playable varies with game type, but is typically less than 250 milliseconds. In many cases, the underlying network cannot reliably deliver messages within the required window and game developers must use a variety of predictive techniques to maintain the believability of the game experience. Additional complexity in game play requiring additional bandwidth and/or game state processing could be possible under favourable network conditions.

In this talk, we describe our efforts to provide a light weight, embedded measurement framework that can be integrated into the game play experience at the application level. We implement these features on top of the industry standard UNITY-3D game engine, and deploy a test game over WiFi, Cellular, and Bluetooth networks. Particular measures of interest are the frame rate, one-way latency, and frame processing period within a gameplay session. The captured data can be used by game designers to tune game complexity and to manage predictive algorithm parameters. Game designers use these predictive algorithms to maintain an approximation of what occurs in real-time, despite delays from network transmission, and can use this information in providing game options that appropriately restrict the resource utilization to provide the maximum-sustainable-quality game experience. This provides the best opportunity to retain engaged players, who contribute to the data collection loop. The network measurements can also be of use to service providers as delay and congestion indications can be piggy-backed on game traffic packets. This enables their capacity planning with respect to quality of service for the user base.

We will present results characterizing various Cellular environments to provide bounds on game designs feasible with current network technology as it is deployed in urban and rural areas around North America and Europe. As well, development and use of the performance models in game design techniques will be outlined as deployed in the multiplayer network game environment on mobile networks.

16:10 - 17:00

WNM: Session 2

Room: Klondike

On the Analysis of Backscatter Traffic
Eray Balkanli (Dalhousie University, Canada) and Nur Zincir-Heywood (Dalhousie University, Canada)
pp. 671-678

Annotating Network Trace Data for Anomaly Detection Research
Andreas Löf (University of Waikato, New Zealand) and Richard Nelson (University of Waikato, New Zealand)
pp. 679-684

16:25 - 16:40

Conclusion

Room: Salon B

18:00 - 19:00

Workshops Monday - End of the technical program

Tuesday, September 9

08:00 - 09:00

Registration

09:00 - 09:30

Opening and Welcome

Room: Salon A

09:30 - 10:30

Keynote 1: Communication Ecosystem in Motion

Ravinder Shergill, Principal Technology Architect Chief Technology Office, TELUS
Room: Salon A
Chair: Damla Turgut (University of Central Florida, USA)

Abstract: Communication Eco-System is in Motion at an unprecedented pace. This is driven by Consumerization of IT and Democratization of the Internet by Social Media, etc.

This talk will look at the following trends:
• Services are becoming Access Independence
• Wireline and Wireless network boundaries are blurring
• Network Functions are being Virtualized

18:00 - 18:30

LCN Wednesday - End of the technical program

Thursday, September 11

08:30 - 09:00

Registration

09:00 - 09:45

goSmart: Keynote

Energy Management Systems for Microgrids: Creation of a Sustainable Energy Ecosystem for Smart Cities
Room: Salon B

Abstract:

Urban communities comprise a significant portion of the human population both in numbers and economic value produced. With rise in energy demand and depletion of resources, sustainability of urban communities is at risk. Energy Microgrids address these issues by integrating modular energy sources coupled with energy storage to local demand creating a coordinated, controllable entity. In this context, local generation systems also called distributed energy resources (DER) support local thermal and electrical demand while ensuring reliability and power quality with lower emission footprint. While microgrids can be a source of renewable and reliable energy for end users, significant challenges exist in stable operation and meeting economic goals of the microgrid owners. Current installations are cost prohibitive and heavily subsidized by incentives, unsustainable in a free and competitive market . In addition, lack of strong regulatory policies affect the growth of microgrid enterprises in the retail energy market within distribution systems. The three pillars for sustainable energy ecosystem relate to sound technology, proven business models and robust regulatory policies. In this talk, I will address how sophisticated energy management systems (EMS) can help energy microgrids provide economic value to end-users, owners and utilities in current energy markets. While EMS cannot surpass regulatory hurdles, it does engender a sustainable business model for energy microgrids to address the current problems of urban communities .

Bio:

Ratnesh Sharma has over a decade of experience in sustainable energy management for microgrids in buildings and transportation sectors. He has a PhD degree from University of Colorado at Boulder and BTech. (Hons.) degree from Indian Institute of Technology, Kharagpur. He is the founding head of the Energy Management Department at NEC Laboratories America. Prior to that, he was a Principal Scientist at Hewlett-Packard Laboratories leading research in energy management in datacenter microgrids. He is a member of US Technical Advisory Group for IEC TC120 on Energy Storage Systems (ESS) and participated in numerous US DOE working groups for ESS standardization and cyber-physical systems. He has authored more than 200 papers/technical reports and holds over 80 US patents on energy management and related areas.

09:00 - 10:30

ON-MOVE: Techniques and Approaches

Room: Lacombe

A Concept for Vehicle Internet Connectivity for Non-Safety Applications
Tobias Rueckelt (Technische Universität Darmstadt, Germany), Daniel Burgstahler (Technische Universität Darmstadt, Germany), Frank Englert (Technische Universität Darmstadt, Germany), Christian Gottron (Technische Universität Darmstadt, Germany), Sebastian Zöller (Technische Universität Darmstadt & Multimedia Communications Lab - KOM, Germany) and Ralf Steinmetz (Technische Universität Darmstadt, Germany)
pp. 718-721

Analyzing Dynamic IPv6 Address Auto-configuration Techniques for Group IP-based Vehicular Communications
Sofiane Imadali (CEA, LIST, Communicating Systems Laboratory & Commissariat a l'Energie Atomique (CEA), France), Véronique Vèque (University of Paris-Sud 11, France) and Alexandru Petrescu (Commissariat à l'Énergie Atomique, France)

pp. 722-729

Optimal Encounter-Based Routing Via Objects with Periodic Behaviours
Zhiyu Wang (University of Alberta, Canada), Mike H. MacGregor (University of Alberta, Canada) and Mario A Nascimento (University of Alberta, Canada)
pp. 730-737

WLN: Architectural challenges in future wireless networks

Room: Klondike

Tree Bound on Probabilistic Connectivity of Underwater Sensor Networks
Md Asadul Islam (University of Alberta, Canada) and Ehab S. Elmallah (University of Alberta, Canada)
pp. 746-752

Enhancing the Privacy of LTE-based Public Safety Networks
Hamidreza Ghafghazi (University of Ottawa, Canada), Amr El Mougy (Queen's University, Canada) and Hussein T Mouftah (University of Ottawa, Canada)
pp. 753-760

Classification of Participatory Sensing Privacy Schemes
Mohannad A. Alswailim (Queen's University & Qassim University, Canada), Mohammad Zulkernine (Queen's University, Canada) and Hossam S. Hassanein (Queen's University, Canada)
pp. 761-767

Techno-Economical Analysis and Comparison of Legacy and Ultra-dense Small Cell Networks
Syed Fahad Yunas (Tampere University of Technology, Finland), Jarno Niemelä (Elisa Corporation, Finland), Mikko Valkama (Tampere University of Technology, Finland) and Tero Isotalo (Tampere University of Technology, Finland)
pp. 768-776

09:45 - 10:30

goSmart: Smart Energy

Room: Salon B

SMARTENERGY.KOM: An Intelligent System for Energy Saving in Smart Home
Alaa Alhamoud (Darmstadt University of Technology, Germany), Felix Ruettiger (Darmstadt University of Technology, Germany), Andreas Reinhardt (The University of New South Wales, Australia), Frank Englert (Technische Universität Darmstadt, Germany), Daniel Burgstahler (Technische Universität Darmstadt, Germany), Doreen Böhnstedt (Technische Universität Darmstadt, Germany), Christian Gottron (Technische Universität Darmstadt, Germany) and Ralf Steinmetz (Technische Universität Darmstadt, Germany)
pp. 685-692

Autonomous Cooperative Energy Trading Between Prosumers for Microgrid Systems
Yuan Luo (NEC Smart Energy Research Laboratories, Japan), Satoko Itaya (NEC, Japan), Shin Nakamura (NEC Smart Energy Research Laboratories, Japan) and Peter Davis (Telecognix Corporation, Japan)
pp. 693-696

10:30 - 11:00

Coffee break

11:00 - 12:15

goSmart: Smart Services

Room: Salon B

Sector-based RTS/CTS Access Scheme for High Density WLAN Sensor Networks
Stefan Aust (NEC Communication Systems, Ltd., Japan), R Venkatesha Prasad (TU Delft, India) and Ignas G.M.M. Niemegeers (Delft University of Technology, The Netherlands)
pp. 697-701

A SUMO Based Evaluation of Road Incidents' Impact on Traffic Congestion Level in Smart Cities
David Smith (University College Dublin, Ireland), Soufiene Djahel (University College Dublin, Ireland) and John Murphy (University College Dublin, Ireland)
pp. 702-710

Experimental Studies of the ZigBee Frequency Agility Mechanism in Home Area Networks
Mohd Adib Sarijari (Universiti Teknologi Malaysia & Delft University of Technology, Malaysia), Mohd Sharil Abdullah (Delft University of Technology & Universiti Teknologi Malaysia, The Netherlands), Anthony Lo (Delft University of Technology, The Netherlands) and Rozeha A. Rashid (Universiti Teknologi Malaysia, Malaysia)
pp. 711-717

11:00 - 12:00

ON-MOVE: Keynote

Bridging the gap between infrastructure based V2I and decentralized V2V communication
Room: Lacombe

Abstract:
Extensive research activities and field operation tests on V2I and V2V communication have been carried out for more than a decade. However, there are still some unsolved issues for successful and sustainable deployment of cooperative systems based on vehicular communication. Open challenges for a deployment of cooperative applications with high reliability and user acceptance include: minimal performance requirements on positioning accuracy and wireless performance to ensure interoperability, congestion control and adaptive data aggregation for reliable communications, life cycle management and security & privacy issues to ensure the user acceptance and protect the investments.

Advanced cooperative applications require a deployment of vehicles equipped with V2V communication at high penetration rate. However, presently only applications which do not require time-critical communication and high penetration rate can be deployed based on cellular communication (3G/4G). But how can we bridge the penetration rate gap and introduce also time-critical applications step-by-step? One promising solution might be selective infrastructure support: Roadside units with 802.11p technology, initially deployed on accident prone spots, extend the coverage and enable time-critical applications for every equipped vehicle from the start of deployment. It is also possible to reduce the latency of cellular communication by moving the applications closer to the road. Thereby, applications reside directly on mobile base stations and do not need additional connectivity to the core network.

A second approach is hybrid communication providing seamless connectivity. Vehicles equipped with multiple wireless technologies are able to decide which interface to use based on the availability of the technology, its current coverage, or requirements of the applications. With this approach, all traffic participants including pedestrians and vulnerable users can be integrated seamlessly into one common ITS system. Hence, the overall question is: What will bring us closest to the goal of seamless V2X connectivity? Is the full V2V penetration rate the ultimate solution? Do we have to wait for the next evolution of cellular communication technologies? Or will the hybrid concept with seamless connectivity and evolutionary integration of other technologies pave the way?

Bio:
Mr. Josef Jiru heads the Automotive Connectivity group at the Fraunhofer Institute for Embedded Systems and Communication Technologies ESK which he joined in 2006. He has been in charge of several projects in the field of Vehicle-to-X Communication and Advanced Driver Assistance Systems based on communication. His research activities focus on efficient networking concepts and adaptive data aggregation in vehicular networks. Josef Jiru studied electrical engineering and information technology at the Technical University Munich and graduated as "Diplom-Ingenieur".

11:00 - 12:30

WLN: Novel paradigms in Wireless Local Networks

Room: Klondike

Utilizing Sprouts WSN Platform for Equipment Detection and Localization in Harsh Environments
Abdallah Alma'aitah (Queen's University, Canada) and Hossam S. Hassanein (Queen's University, Canada)
pp. 777-783

Presence Detection Identification and Tracking in Smart Homes Utilizing Bluetooth Enabled Smartphone
Alaa Alhamoud (Darmstadt University of Technology, Germany), Arun Nair (IIT Madras, India), Christian Gottron (Technische Universität Darmstadt, Germany), Doreen Böhnstedt (Technische Universität Darmstadt, Germany) and Ralf Steinmetz (Technische Universität Darmstadt, Germany)
pp. 784-789

Data Delivery and Gathering in IoT Applications: An Overview
Elisha Colmenar (University of Guelph, Canada), Fadi M. Al-Turjman (University of Guelph, Canada) and Mohammad Biglarbegian (University of Guelph, Canada)
pp. 790-795

12:00 - 12:30

ON-MOVE: Applications

Room: Lacombe
Chair: Dan Johansson (Luleå University of Technology, Sweden)

VeDi: A Vehicular Crowd-sourced Video Social Network for VANETs
Kazi Masudul Alam (University of Ottawa, Canada), Mukesh Saini (University of Ottawa, Canada), Dewan T Ahmed (University of North Carolina at Charlotte, USA) and Abdulmotaleb El Saddik (University of Ottawa, Canada)
pp. 738-745

12:30 - 13:30

Lunch break

13:30 - 14:00

Workshops Thursday - End of the technical program