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Association for
Computing Machinery

DCOSS 2018

The 14th Annual International Conference on
Distributed Computing in Sensor Systems

Bronx, New York, USA
June 18-19, 2018



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Day 1: June 18, 2018

8:15 am – 8:30 am

Welcome Message

Prof. George Hong, Chief Research Officer, Associate Vice President for Academic Affairs
(Fordham University, USA)

8:30 am – 9:30 am

Keynote Speech: Prof. Wendi Heinzelman, University of Rochester, USA

Chair: Habib M. Ammari (Fordham University, USA)

9:30 am – 10:00 am

Coffee Break

10:00 am – 12:00 pm

Session 1: Signals

Chair: Simone Silvestri (University of Kentucky, USA)

- Distributed Mining of Popular Paths in Road Networks
Panagiota Katsikouli (Univ.Lyon, Inria, INSA-Lyon, CITI & Univ. Edinburgh, Informatics), Maria Sinziana Astefanoaei (Univ.Edinburgh, Informatics), Rik Sarkar (Univ.Edinburgh, Informatics)

- White Space Prediction for Low-power Wireless Networks: A Data-Driven Approach
Indika S. A. Dhanapala (Nimbus Centre, Cork Institute of Technology, Ireland), Ramona Marfievici (Nimbus Centre, Cork Institute of Technology, Ireland), Sameera Palipana (Nimbus Centre, Cork Institute of Technology, Ireland), Piyush Agrawal (United Technologies Research Centre, Cork, Ireland), Dirk Pesch (Nimbus Centre, Cork Institute of Technology, Ireland)

- Projection-Based Constrained Fusion Performance with Link Loss and Measurement Bias
Qiang Liu (Oak Ridge National Laboratory)

- Recursive Truth Estimation of Time-Varying Sensing Data from Online Open Sources
Hang Cui (University of Illinois, Urbana Champaign), Tarek Abdelzaher (University of Illinois, Urbana Champaign), Lance Kaplan (Army Research Laboratories)

12:00 pm – 1:30 pm

Lunch

1:30 pm – 3:00 pm

Session 2: Industrial IoT

Chair: Ramona Marfievici (Cork Institute of Technology, Ireland)

- Dynamic Context for Static Context Header Compression in LPWANs
Khaled Q. Abdelfadeel (Nimbus Centre, Cork Institute of Technology, Ireland), Victor Cionca (Nimbus Centre, Cork Institute of Technology, Ireland), Dirk Pesch (Nimbus Centre, Cork Institute of Technology, Ireland)

- On Designing Provably Correct DODAG Formation Criteria for the IPv6 Routing Protocol for Low-Power and Lossy Networks (RPL)
Agnieszka Paszkowska (University of Warsaw), Konrad Iwanicki (University of Warsaw)

- Duty-Cycle-Aware Real-Time Scheduling of Wireless Links in Low Power WANs
Md Tamzeed Islam (UNC), Bashima Islam (UNC), Shahriar Nirjon (UNC)

3:00 pm – 3:30 pm

Coffee Break

3:30 pm – 5:30 pm

Session 3: Applications I

Chair: Panagiota Katsikouli (INRIA, INSA-Lyon, France)

- Knowledge Transfer Between Embedded Controllers
Seulki Lee (UNC Chapel Hill), Shahriar Nirjon (UNC Chapel Hill)

- PulseHV: Opportunistic Data Transmissions over High Voltage Pulses for Smart Farming Applications
Jana Huchtkoetter (TU Clausthal), Andreas Reinhardt (TU Clausthal), Ulf Kulau (TU Braunschweig)

- FnS: Enhancing Traffic Mobility and Public Safety based on a Hybrid Transportation System
Allan M. de Souza (UNICAMP), Leonardo C. Botega (UNIVEM), Leandro A. Villas (UNICAMP)

8:00 pm

Banquet

Day 2: June 19, 2018

8:30 am – 9:30 am

Keynote Speech: Prof. Marco Gruteser, Rutgers University, USA

Chair: Guevara Noubir (Northeastern University, USA)

9:30 am – 10:00 am

Coffee Break

10:30 am – 12:00 am

Session 4: Algorithms

Chair: Habib M. Ammari (Fordham University, USA)

- Distributed Coordination for Multi-Task k -Assignment Using Autonomous Mobile IoT systems
Lukas Esterle (Aston University)

- Resilient Distributed Diffusion for Multi-task Estimation
Jiani Li (Institute for Software Integrated Systems, Vanderbilt University), Xenofon Koutsoukos (Institute for Software Integrated Systems, Vanderbilt University)

- Leveraging Knowledge for Path Exposure
Simon Shamoun (City University of New York), Jie Mei (City University of New York), Tarek F. Abdelzaher (University of Illinois Urbana-Champaign), Amotz Bar-Noy (City University of New York)

12:00 pm – 1:00pm

Lunch

1:00 pm – 2:00pm

Posters and Demos

Chairs: Ulf Kulau (Technical University Braunschweig Germany)

Damian M. Lyons (Fordham University, USA)

Lars Wolf (Technical University Braunschweig Germany)

- Poster: SCARAB² - Scalable, Robust and Adaptive on Board Ballistocardiography
Nico Jähne-Raden (Peter L. Reichertz Institute for Medical Informatics University of Braunschweig - Institute of Technology and Hannover Medical School), Henrike Gütschleg (Peter L. Reichertz Institute for Medical Informatics University of Braunschweig - Institute of Technology and Hannover Medical School), Mario Kallenbach (TU Braunschweig), Thomas Feuerle (TU Braunschweig), Ulf Kulau (TU Braunschweig)

- Poster: Frequency Scaling in Time Synchronization for Wireless Sensor Networks
Farzad Asgarian (University of Michigan), Khalil Najafi (University of Michigan)

- Poster: On Cost-Sensitive Task Allocation in Social Sensing: An Online Learning Approach
Yang Zhang (University of Notre Dame), Dong Wang (University of Notre Dame)
- Poster: Quality-Aware Voice Convergecast in Mobile Low Power Wireless Networks
Michael Adkins (Colorado School of Mines), Qi Han (Colorado School of Mines), Sudeep Pasricha (Colorado State University)
- Demo: Taking Advantage of the Shock Hazard: How to Use an Electric Fence for Data Transfers
Jana Huchtkoetter (TU Clausthal), Andreas Reinhardt (TU Clausthal)
- Poster: Semantic Clustering in Credible Human Sensed Event Detection
Sikder Tahsin Al-Amin (University of Houston), Suraiya Tairin (Bangladesh University of Engineering and Technology), Sharmin Afrose (Bangladesh University of Engineering and Technology), Walid Mohammad (Bangladesh University of Engineering and Technology), Mahmuda Naznin (Bangladesh University of Engineering and Technology)

Invited Posters:

- Poster: Hierarchical Local Sensor Selection Algorithms
Simon Shamoun (City University of New York), Tianyi Tu (Brooklyn College), Tarek F. Abdelzaher (University of Illinois), Amotz Bar-Noy (City University of New York)
- Poster: Adaptive Wireless Power Transfer in Mobile Ad Hoc Networks
Adelina Madhja (University of Patras), Sotiris Nikolettseas (University of Patras), Alexandros A. Voudouris (University of Patras)

2:00 pm – 3:30 pm

Session 5: Systems

Chair: Lukas Esterle (Aston University, UK)

- Adaptive Secrecy Amplification With Radio Channel Key Extraction
Lukas Nemeč (Faculty of Informatics, Masaryk University Brno, Czechia), Radim Ostadal (Faculty of Informatics, Masaryk University Brno, Czechia), Vashek Matyas (Faculty of Informatics, Masaryk University Brno, Czechia), Petr Svenda (Faculty of Informatics, Masaryk University Brno, Czechia)
- Marrying Stationary Low-Power Wireless Networks and Mobile Robots in a Hybrid Surveillance System
Eduardo Ferrera (University of Duisburg-Essen), Matteo Ceriotti (University of Duisburg-Essen), Sascha Jungen (University of Duisburg-Essen), Ninja Heisse (University of Duisburg-Essen), Jesús Capitan (University of Duisburg-Essen), Pedro José Marrón (University of Duisburg-Essen)

- How Different Transceiver Hardware Effects Concurrent Transmissions in WSNs
Georg von Zengen (Technische Universität Braunschweig), Alexander Baumstark (Technische Universität Braunschweig), Alexander Willecke (Technische Universität Braunschweig), Ulf Kulau (Technische Universität Braunschweig), Lars C. Wolf (Technische Universität Braunschweig)

3:30 pm – 4:00 pm

Coffee Break

4:00 pm – 5:30 pm

Session 6: Applications II

Chair: Lars Wolf (Technical University Braunschweig Germany)

- Deep Beacon: Image Storage and Broadcast over BLE Using Variational Autoencoder Generative Adversarial Network
Chong Shao (University of North Carolina at Chapel Hill), Shahriar Nirjon (University of North Carolina at Chapel Hill)
- On Opinion Characterization in Social Sensing: A Multi-View Subspace Learning Approach
Yang Zhang (University of Notre Dame), Nathan Vance (University of Notre Dame), Daniel (Yue) Zhang (University of Notre Dame), Dong Wang (University of Notre Dame)
- Social-Behavioral Aware Optimization of Energy Consumption in Smart Homes
Valeria Dolce (Missouri S&T), Courtney Jackson (Missouri S&T), Denise Baker (Missouri S&T), Simone Silvestri (University of Kentucky), Alessandra De Paola (University of Palermo)

Closing Remarks