

Technical Program

MobiSys2009

TUESDAY, June 23rd

The 7th ACM/USENIX International Conference on Mobile Systems, Applications, and Services

08:15 Registration

09:15 – 09:30 Opening Announcements

09:30: - 10:30 **Keynote:** (Session Chair: Victor Bahl)

Bruce Tuch, “Wi-Fi to 4G: The Business/Technology Success and Failures Leading to Product Acceptance”

10:30 - 11:00 Coffee Break

11:00 - 12:30 **Session 1: Security and Privacy** (Session Chair: Doug Terry)

SPATE: Small-group PKI-less Authenticated Trust Establishment

Yue-Hsun Lin, *National Tsing Hua University*, Ahren Studer, Hsu-Chun Hsiao, Jonathan McCune, *Carnegie Mellon University*, King-Hang Wang, *National Tsing Hua University*, Maxwell Krohn, *Carnegie Mellon University*, Phen-Lan Lin, *Providence University*, Adrian Perrig, *Carnegie Mellon University*, Hung-Min Sun, *National Tsing Hua University*, and Bo-Yin Yang, *Academia Sinica*

xShare: Supporting Impromptu Sharing of Mobile Phones

Yunxin Liu, *Microsoft Research Asia and Shanghai Jiao Tong University*, Ahmad Rahmati, *Rice University*, Yuanhe Hang, *Microsoft Research Asia and Tsinghua University*, Hyukjae Jang, *Microsoft Research Asia and KAIST*, Lin Zhong, *Rice University*, Yongguang Zhang, *Microsoft Research Asia*, Shensheng Zhang, *Shanghai Jiao Tong University*.

Attacks on Public WLAN-based Positioning Systems

Nils Ole Tippenhauer, Kasper Rasmussen, Christina Pöpper, and Srdjan Capkun, *ETH Zurich*

12:30 - 2:00 Lunch

2:00 - 3:30 **Session 2: Experimental Platforms** (Session Chair: Mahadev Satyanarayanan)

BlueMonarch: A System for Evaluating Bluetooth Applications in the Wild

Timothy J. Smith, *University of Toronto*, Stefan Saroiu, and Alec Wolman, *Microsoft Research*

PEIR, the Personal Environmental Impact Report, as a Platform for Participatory Sensing Systems Research Min Mun, Sasank Reddy, Katie Shilton, Nathan Yau, Jeff Burke, Deborah Estrin, Mark Hansen, Eric Howard, Ruth West, *UCLA*, and Peter Boda, *Nokia Research Center*.

Longitudinal Study of a Building-Scale RFID Ecosystem

Evan Welbourne, Karl Koscher, Emad Soroush, Magdalena Balazinska, and Gaetano Borriello, *University of Washington*

3:30 - 4:00 Coffee Break

4:00 - 5:30 **Session 3: Resource Management** (Session Chair: Ed Nightingale)

Fidelity-Aware Replication for Mobile Devices

Kaushik Veeraraghavan, Venugopalan Ramasubramanian, Thomas L. Rodeheffer, Douglas B. Terry, and Ted Wobber, *Microsoft Research Silicon Valley*

Majab: Improving Resource Management for Web-Based Applications on Mobile Devices

Du Li and Manish Anand, *Nokia Research Center*

Leveraging Smart Phones to Reduce Mobility Footprints

Stephen Smaldone, *Rutgers University*, Benjamin Gilbert, *Carnegie Mellon University*, Nilton Bila, *University of Toronto*, Liviu Iftode, *Rutgers University*, Eyal de Lara, *University of Toronto*, and Mahadev Satyanarayanan, *Carnegie Mellon University*

5:30 – 6:00 Break

6:00 – 11:00 **Wieliczka Salt Mine Tour and Dinner**

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WEDNESDAY, June 24th

08:30 Registration

09:00 - 10:30 **Session 4: Discovery and Planning** (Session chair: Roy Want)

Wifi-Reports: Improving Wireless Network Selection with Collaboration

Jeffrey Pang, *Carnegie Mellon University*, Ben Greenstein, *Intel Research Seattle*, Michael Kaminsky, *Intel Research Pittsburgh*, Damon McCoy, *University of Colorado*, and Srinivasan Seshan, *Carnegie Mellon University*

Point&Connect: Intention-based Device Pairing for Mobile Phone Users

Chunyi Peng, Guobin Shen, Yongguang Zhang, *Microsoft Research Asia*, and Songwu Lu, *Univ. of California, Los Angeles*

Using Bluetooth Device Names to Support Interaction in Smart Environments

Nigel Davies, Adrian Friday, Peter Newman, Sarah Rutledge, and Oliver Storz, *Lancaster University*

10:30 - 11:00 Coffee Break

11:00 - 12:30 **Session 5: Mobile Sensing and Inference** (Session Chair: Marco Gruteser)

SoundSense: Scalable Sound Sensing for People-Centric Applications on Mobile Phones

Hong Lu, Wei Pan, Nicholas D. Lane, Tanzeem Choudhury, and Andrew T. Campbell, *Dartmouth College*

A Framework of Energy Efficient Mobile Sensing for Automatic Human State Recognition

Yi Wang, *University of Southern California*, Jialiu Lin, *Carnegie Mellon University*, Murali Annavam, *University of Southern California*, Quinn A. Jacobson, *Nokia Research Center*, Jason Hong, *Carnegie Mellon University*, Bhaskar Krishnamachari, *University of Southern California*, and Norman Sadeh-Konieczpol, *Carnegie Mellon University*

A Methodology for Extracting Temporal Properties from Sensor Network Data Streams

Dimitrios Lymberopoulos, *Microsoft Research*, Athanasios Bamis, and Andreas Savvides, *Yale University*

12:30 - 2:00 Lunch

2:00 – 3:00 **Session 6: Location** (Session Chair: Eyal de Lara)

StarTrack: A Framework for Track-Based Applications

Ganesh Ananthanarayanan, *University of California, Berkeley and Microsoft Research*, Maya Haridasan, Iqbal Mohamed, Douglas B. Terry, and Chandramohan A. Thekkath, *Microsoft Research*

EnTracked: Energy-Efficient Robust Position Tracking for Mobile Devices

Mikkel B. Kjærgaard, Jakob Langdal, Torben Godsk, and Thomas Toftkjær, *Aarhus University*

3:00 - 3:30 Coffee Break

3:30 - 5:30 **Demonstration and Poster Session**

5:30 – 7:00 Break

7:00 – 9:00 **Dinner near Wawel Castle** (walking distance from hotel)

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THURSDAY , June 25th

08:30 Registration

09:00 - 10:30 **Session 7: Wireless networking** (Session Chair: Alec Wolman)

R2D2: Regulating Beam Shape and Rate as Directionality meets Diversity

Kishore Ramachandran, *Rutgers University*, Ravi Kokku, Karthik Sundaresan, *NEC Laboratories America*, Marco Gruteser, *Rutgers University*, and Sampath Rangarajan, *NEC Laboratories America*

Blue-Fi: Enhancing Wi-Fi Performance using Bluetooth Signals

Ganesh Ananthanarayanan and Ion Stoica, *University of California, Berkeley*

Predictive Methods for Improved Vehicular WiFi Access

Pralhad Deshpande, *State University of New York, Stony Brook*, Anand Kashyap, *Symantec Corp.*, Chul Sung, and Samir Das, *State University of New York, Stony Brook*

10:30 - 11:00 Coffee Break

11:00 - 12:30 **Session 8: Applications and Services** (Session Chair: Jason Flinn)

iScope: Personalized Multi-Modality Image Search for Mobile Devices

Changyun Zhu, *Queen's University*, Kun Li, Qin Lv, Li Shang, *University of Colorado at Boulder*, and Robert P. Dick, *University of Michigan*

mFerio: The Design and Evaluation of a Peer-to-Peer Mobile Payment System

Rajesh Balan, Narayan Ramasubbu, *Singapore Management University*, Komsit Prakobphol, Nicolas Christin, and Jason Hong, *Carnegie Mellon University*

Air-dropped Sensor Network for Real-time High-fidelity Volcano Monitoring

Wen-Zhan Song, Renjie Huang, Andy Ma, Mingsen Xu, Behrooz Shirazi, *Washington State University*, and Richard LaHusen, *U.S. Geological Survey*

12:30 – 2:00 Lunch

2:00 - 3:30 **Session 9: Power Management and Optimization** (Session Chair: Rajesh Balan)

Leakage-Aware Energy Synchronization for Wireless Sensor Networks

Ting Zhu, Ziguang Zhong, Yu Gu, Tian He, and Zhi-Li Zhang, *University of Minnesota*

SolarStore: Enhancing Data Reliability in Solar-powered Storage-centric Sensor Networks

Yong Yang, Lili Wang, Dong Kun Noh, Hieu Khac Le, and Tarek Abdelzaher, *University of Illinois at Urbana-Champaign*

Sensor Selection for Energy-Efficient Ambulatory Medical Monitoring

Eugene Shih, Ali Shoeb, and John Guttag, *MIT*

3.30 – 3:45 Closing