IPSN 2008 Schedule Summary

Monday, April 21, 2008

IPNS Workshops: *Please see http://ipsn.acm.org/2008/#Workshops*

Tuesday, April 22, 2008

7:45 – 8:45	Breakfast
8:45 – 9:00	Conference Opening Announcements
9:00 – 10:00	CPS Week Keynote Presentation
10:00 – 10:30 Break	
10:30 – 12:30 IP Track, Session 1: Localization	
12:30 – 1:30	Lunch
1:30 – 3:30	IP Track, Session 2: Networking
4:00 – 6:00	IP Track, Session 3: Sensor Network Algorithms
6:00 – 8:30	IP Track Poster Session
6:00 – 8:30	SPOTS Track Poster Session
6:00 – 8:30	IPSN Demo Session

Wednesday, April 23, 2008

7:45 – 9:00	Breakfast
9:00 – 10:00	CPS Week Keynote Presentation "Development of a Self-Driving Car as a Mobile Sensing Platform" by Dr. Seth Teller, MIT
10:00 – 10:30 Break	
10:30 – 12:30	SPOTS/IP Combined Session: Programming and Debugging
12:30 – 1:30	Lunch
1:30 – 3:30	SPOTS Track, Session 1: Applications and Software
4:00 – 6:00	SPOTS Track, Session 2: Hardware and Platforms
7:30 – 9:00	IPSN Conference Banquet

Thursday, April 24, 2008

7:45 – 9:00	Breakfast
9:00 – 10:00	CPS Week Keynote Presentation
10:00 – 10:30 Break	
10:30 – 12:30	IP Track, Session 4: Data Dissemination and Collection
1:30 – 4:00	IP Track, Session 5: Applications

IPSN 2008 Conference Program

7:45 – 8:45 Breakfast

8:45 – 9:00 Conference Opening Announcements
9:00 – 10:00   CPS Week Keynote Presentation
10:00 – 10:30   Break

10:30 – 12:30   IP Track, Session 1: Localization

Passive Localization: Large Size Sensor Network Localization Based on Environmental Events
YoungMin Kwon,
Gul Agha (University of Illinois)

Moving-Baseline Localization
Jun-Geun Park,
Erik Demaine,
Seth Teller (MIT CSAIL)

Pareto Frontiers of Sensor Networks for Localization
Volkan Cevher,
Lance Kaplan (University of Maryland)

A Wireless Sensor Network for Real-time Indoor Localisation and Motion Monitoring
Lasse Klingbeil,
Tim Wark (CSIRO ICT Centre)

1:30 – 3:30 IP Track, Session 2: Networking

Y-MAC: An Energy-efficient Multi-channel MAC Protocol for Dense Wireless Sensor Networks
Youngmin Kim,
Hyojeong Shin,
Hojung Cha (Yonsei University)

On the network coding advantage for wireless multicast in Euclidean space
Ashish Goel (Stanford University),
Sanjeev Khanna (University of Pennsylvania)

A Practical Multi-Channel Medium Access Control Protocol for Wireless Sensor Networks
Hieu Le,
Dan Henriksson,
Tarek Abdelzaher (University of Illinois at Urbana Champaign)

Effects of Correlated Shadowing: Connectivity, Localization, and RF Tomography
Neal Patwari,
Piyush Agrawal (University of Utah)

4:00 - 6:00 IP Track, Session 3: Sensor Network Algorithms

Sensor Selection For Minimizing Worst-case Prediction Error
Abhimanyu Das,
David Kempe (Univ of Southern California)

Towards Real-Time Information Processing of Sensor Network Data using Computationally Efficient Multi-output Gaussian Processes
Michael Osborne (University of Oxford),
Alex Rogers,
Sarvapali Ramchurn,
Stephen Roberts,
Nicholas Jennings (University of Southampton)

Composable Information Gradients in Wireless Sensor Networks
Huijia Lin,
Maohua Lu,
Nikola Milosavljevic,
Jie Gao (Stony Brook),
Leonidas Guibas (Stanford University)

Distributed Online Simultaneous Fault Detection for Multiple Sensors
Ram Rajagopal,
Xuanlong Nguyen,
Sinem Ergen,
Pravin Varaiya (UC Berkeley)

6:00 – 8:30 IP Track Poster Session

ACE in the Hole: Adaptive Contour Estimation Using Collaborating Mobile Sensors
Sumana Srinivasan,
Krithivasan Ramamritham,
Purushottam Kulkarni (IIT Bombay)

Alert: An Adaptive Low-Latency Event-Driven MAC Protocol for Wireless Sensor Networks
Vinod Namboodiri (University of Massachusetts Amherst),
Abtin Keshavarzian (Robert Bosch Research and Technology Center, Palo Alto, CA)

Fountain Codes Based Distributed Storage Algorithms for Large-scale Wireless Sensor Networks
Salah Aly (Texas A&M University),
Zhenning Kong (Yale University),
Emina Soljanin (Bell Labs, Alcatel-Lucent)

Joint Routing and 2D Transform Optimization for Irregular Sensor Network Grids Using Wavelet Lifting
Godwin Shen,
Antonio Ortega (Univ. of Southern California)

LOCALE: Collaborative Localization Estimation for Sparse Mobile Sensor Networks
Pei Zhang,
Margaret Martonosi (Princeton University)

IP Track Poster Session (continued)

On Boundary Recognition without Location Information in Wireless Sensor Networks
Olga Saukh,
Robert Sauter,
Matthias Gauger,
Pedro Marron (Universitat Bonn),
Kurt Rothermel (Universitat Stuttgart)

Using Echo State Networks for Anomaly Detection in Underground Coal Mines
Oliver Obst,
Mikhail Prokopenko,
Rosalind Wang (CSIRO ICT Centre)

6:00 – 8:30 SPOTS Track Poster Session

LiteOS, A Unix-like Operating System and Programming Platform for Wireless Sensor Networks
Qing Cao,
Tarek Abdelzaher (UIUC),
John Stankovic (UVA),
Tian He (Univ. of Minnesota)

TinyECC: A Configurable Library for Elliptic Curve Cryptography in Wireless Sensor Networks
An Liu,
Peng Ning (North Carolina State University)

Towards Energy Efficient Design of Multi-Radio Platforms for Wireless Sensor Networks
Dimitrios Lymberopoulos (Yale),
Nissanka B. Priyantha,
Michel Goraczko,
Feng Zhao (Microsoft Research)

6:00 – 8:30 IPSN Demo Session

Air Quality Monitoring with SensorMap
Peter Volgyesi,
Andras Nadas,
Xenofon Koutsoukos,
Akos Ledeczi (Vanderbilt University)

Asynchronous Neighbor Discovery: Finding Needles of Connectivity in Haystacks of Time
Prabal Dutta,
David Culler,
Scott Shenker (University of California, Berkeley)

BehaviorScope: Real-Time Remote Human Monitoring Using Sensor Networks
Dimitrios Lymberopoulos,
Athanasios Bamis,

Thiago Teixeira,
Andreas Savvides (Yale University)

Cyclic Cellular Automata : A Tool for Self-organizing Sleep Scheduling in Sensor Networks
K. J. Kwak (Columbia University NY),
Y. M. Baryshnikov (Bell Labs),
E. G. Coffman (Columbia University NY)

Tuesday, April 22, 2008

IPSN Demo Session (continued)

Demonstration of Active Guidance with SmartCane
Lawrence Au,
Winston Wu,
Maxim Batalin,
Thanos Stathopoulous,
William Kaiser (University of California, Los Angeles)

Demonstration of Location Information Based Network
Younghwan Jung,
Songmin Kim,
Sunshin An (Korea University, Seoul)

Demonstration of a WSN Application in Relic Protection and an Optimized System Deployment Tool
Dong Li,
Wei Liu,
Ze Zhao,
Li Cui (Chinese Academy of Sciences, Beijing)

Demonstration of a Wireless Sensor Network for Real-time Indoor Localisation and Motion Monitoring
Lasse Klingbeil,
Tim Wark (CSIRO ICT Centre)

EcoDAQ: A Densely Distributed, High Bandwidth Wireless Data Acquisition System
Chong-Jing Chen,
Pai H. Chou (University of California, Irvine)

Epic: An Open Mote Platform for Application-Driven Design
Prabal Dutta,
David Culler (University of California, Berkeley)

Faithful Reconstruction of Application Behavior based on Event Traces in the LiteOS Operating System
Qing Cao,
Tarek Abdelzaher (University of Illinois at Urbana-Champaign)

Image Registration in Low Resolution Visual Sensor Networks
Harini Balasubramanian,
Praveen Kumar Mitikiri,
Kamesh R. Namuduri (Wichita State University)

Interference Detection and Mitigation in IEEE 802.15.4 Networks
Rahul C. Shah,
Lama Nachman (Intel Corp.)

Locomotion Monitoring using Body Sensor Networks
Jaime Barnes,
Vikram Ramachandra,
Roozbeh Jafari (University of Texas at Dallas, Richardson)

MetroNet: Case Study for Collaborative Data Sharing on the WorldWide Web
Robert F. Dickerson,
Jian Lu,
Jiakang Lu,
Kamin Whitehouse (University of Virginia)

Missouri S&T Mote-based Demonstration of Energy Monitoring Solution for Network Enabled Manufacturing using Wireless Sensor Networks (WSN)
James W. Fonda (Boeing Phantom Works),
Maciej J. Zawodniok,
S. Jagannathan (Missouri University of Science and Technology),
Al Salour (Boeing Phantom Works),
Donald Miller Jr. (Boeing Facilities and Maintenance)

Secure and DoS-Resistant Code Dissemination in Wireless Sensor Networks Using Seluge
An Liu,
Young-Hyun Oh,
Peng Ning (North Carolina State University)

Sensible Doctor - A Mobile Diagnosis Tool for Wireless Sensor Networks
Seunghun Cha,
Hyojeong Shin,
Hojung Cha (Yonsei University, Seoul)

Sensor Node Interoperability Using Light Weight Web Services
Bodhi Priyantha,
Aman Kansal,
Michel Goraczko,
Feng Zhao (Microsoft Research)

SenseWorld: Towards Cyber-Physical Social Networks
Raghu K. Ganti,
Yu-En Tsai,
Tarek F. Abdelzaher (University of Illinois, Urbana-Champaign)

7:45 – 9:00 Breakfast
9:00 – 10:00   CPS Week Keynote Presentation "Development of a Self-Driving Car as a Mobile Sensing Platform" by Dr. Seth Teller, MIT
10:00 – 10:30   Break

10:30 – 12:30 SPOTS/IP Combined Session: Programming and Debugging

Deriving State Machines from TinyOS programs using Symbolic Execution
Nupur Kothari (University of Southern California),
Todd Millstein (University of California, Los Angeles),
Ramesh Govindan (University of Southern California)

Energy Metering for Free: Augmenting Switching Regulators for Real-Time Monitoring
Prabal Dutta (UC Berkeley),
Mark Feldmeier (MIT),
Joseph Paradiso (MIT),
David Culler (UC Berkeley)

TRANSACT: A Transactional Framework for Programming Wireless Sensor/Actor Networks
Murat Demirbas,
Onur Soysal,
Muzammil Hussain (SUNY Buffalo)

Opportunistic Aggregation Duty Cycled Communications in Wireless Sensor Networks
Jonathan Benson,
Tony O'Donovan (University College Cork, Ireland),
Utz Roedig (Lancaster University, UK),
Cormac J. Sreenan (University College Cork, Ireland)

1:30 – 3:30 SPOTS Track, Session 1: Applications and Software

Real-Time Human Posture Reconstruction in Wireless Smart Camera Networks
Chen Wu,
Hamid Aghajan (Stanford),
Richard Kleihorst (NXP Semiconductors Research, the Netherlands)

SensorScope: Out-of-the-Box Environmental Monitoring
Guillermo Barrenetxea,
Francois Ingelrest,
Gunnar Schaefer, Martin Vetterli,
Olivier Couach,
Marc Parlange (EPFL),

When Timing Matters: Enabling Time Accurate & Scalable Simulation of Sensor Network Applications
Olaf Landsiedel,
Hamad Alizai,
Klaus Wehrle (RWTH Aachen University, Germany)

On the Design of MAC Protocols for Low-Latency Hard Real Time Latency Applications Over 802.15.4 Hardware

Krishna Chintalapudi,
Lakshmi Venkatraman (Robert Bosch Research and Technology Center, Palo Alto, CA)

Wednesday, April 23, 2008

4:00 – 6:00 SPOTS Track, Session 2: Hardware and Platforms

VoxNet: An Interactive, Rapid-Deployable Acoustic Monitoring Platform
Michael Allen (Coventry University),
Lewis Girod,
Ryan Newton,
Samuel Madden (MIT),
Daniel T. Blumstein,
Deborah Estrin (UCLA)

The Energy Endoscope: Real-time Detailed Energy Accounting for Wireless Sensor Nodes
Thanos Stathopoulos,
Dustin McIntire,
William J. Kaiser (UCLA)

HERMES: A Software Architecture for Visibility and Control in Sensor Network Deployments
Nupur Kothari (USC),
Kiran Nagaraja (NEC Laboratories America, Princeton),
Vijay Raghunathan (Purdue Univ.),
Florin Sultan,
Srimat Chakradhar (NEC Laboratories America, Princeton)

Design, Modeling, and Capacity Planning for Micro-Solar Power Sensor Networks
Jay Taneja,
Jaein Jeong,
David Culler (UC Berkeley)

7:30 – 9:00 IPSN Conference Banquet

7:45 – 9:00 Breakfast
9:00 – 10:00   CPS Week Keynote Presentation
10:00 – 10:30   Break

10:30 – 12:30 IP Track, Session 4: Data Dissemination and Collection

Koala: Ultra-Low Power Data Retrieval inWireless Sensor Networks
Razvan Musaloiu-E.,
Chieh-Jan Liang,
Andreas Terzis, (Johns Hopkins University)

Data Detection and Dissemination with DIP
Kaisen Lin (UC San Diego),
Phil Levis (Stanford)
Seluge: Secure and DoS-Resistant Code Dissemination in Wireless Sensor Networks
Sangwon Hyun,
Peng Ning,
An Liu (North Carolina State University),
Wenliang Du (Syracuse University)

Rateless Deluge: Over-the-Air Programming in Wireless Sensor Networks using Random Linear Codes
Andrew Hagedorn,
David Starobinski,
Ari Trachtenberg (Boston University)

1:30 – 4:00 IP Track, Session 5: Applications and Potpourri

Design and Implementation of a Dual-Camera Wireless Sensor Network for Object Retrieval
Dan Xie,
Tingxin Yan,
Deepak Ganesan,
Allen Hanson (Univ. of Massachusetts Amherst)

Community Sensing: Foundations and Applications
Andreas Krause (Carnegie Mellon University)
Eric Horvitz,
Aman Kansal,
Feng Zhao (Microsoft Research)

Identification of Low-Level Point Radiation Sources Using a Sensor Network
Nageswara Rao,
Mallikarjun Shankar (Oak Ridge National Laboratory),
Jren-Chit Chin,
David Yau (Purdue University),
Srinivasan Srivathsan,
Sitharama Iyengar (Louisiana State University),
Yong Yang,
Jennifer Hou (University of Illinois at Urbana-Champaign)

On the Use of Mutual Information to Compare the Performance of Wireless Sensor Networks in Detection Applications
Benedito Fonseca Jr (Motorola Labs),
John Gubner (University of Wisconsin - Madison)

High Performance Sleep-Wake Sensor Systems based on Cyclic Cellular Automata
Yuliy Baryshnikov (Bell Labs),
Edward Coffman,