

## Call for Participation

The 9th ACM Conference on Embedded Networked Sensor Systems (SenSys 2011)

November 1 – 4, 2011

Grand Hyatt Hotel, Seattle, WA

<http://sensys.acm.org/2011/>

\*\* Early [registration](#) and [hotel](#) deadline: Oct. 2nd, 2011\*\*

\*\* [Student Travel Awards available](#)\*\*

On behalf of the organization committee, we warmly invite you to SenSys 2011 in Seattle.

SenSys is a highly selective, single-track forum for the presentation of research results on systems issues in the area of embedded, networked sensors. Distributed systems based on networked sensors and actuators with embedded computation capabilities allow for an instrumentation of the physical world at an unprecedented scale and density, thus enabling a new generation of applications. This year's program features exciting advances in classical topics such as networking and localization, as well as explorations into new frontiers and application domains.

SenSys'11 Program Highlights:

- Keynote by Michel Maharbiz (UC Berkeley).
- 24 research papers, including 2 industrial papers
- 19 poster papers
- 33 demos
- 3 workshops: PhoneSense, BuildSys, and mHealthSys
- Doctorial Colloquium

The conference will also provide opportunities for researchers to exchange ideas and experiences through social events such as a reception at Demo and Poster floor and a banquet at Seattle's landmark Space Needle.

Look forward to seeing you at SenSys in Seattle!

Cheers,

Jie Liu

SenSys 2011 General Chair

Thanks to our sponsors:

ACM SIGCOMM, SIGMOBILE, SIGARCH, SIGOPS, SIGMETRICS, SIGBED  
NSF, Microsoft Research, Google, HP Labs, IBM Research

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**\*\*Technical Program, Demos, and Posters\*\***  
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**11/1/2011 (Tuesday):** Workshops, Doctorial Colloquium

**11/2/2011 (Wednesday)**

8:45 - 10:00     **Keynote by Michel Maharbiz**

10:30 - 12:00     **Networking**

- Industry: Beyond Interoperability - Pushing the Performance of Sensor Network IP Stacks  
*JeongGil Ko (Johns Hopkins University), Joakim Eriksson and Nicolas Tsiftes (SICS), Stephen Dawson-*

*Haggerty (UC Berkeley), Jean-Philippe Vasseur and Mathilde Durvy (Cisco Systems), Andreas Terzis (Johns Hopkins University), Adam Dunkels (SICS), and David Culler (UC Berkeley)*

- Lossy Links, Low Power, High Throughput  
*Simon Duquenooy, Fredrik Österlind, and Adam Dunkels (SICS)*
- On the Implications of the Log-normal Path Loss Model: An Efficient Method to Deploy and Move Sensor Motes  
*Yin Chen and Andreas Terzis (Johns Hopkins University)*

**13:30 - 15:00 Classification**

- Hierarchical Aggregate Classification with Limited Supervision for Data Reduction in Wireless Sensor Networks  
*Lu Su, Yong Yang, Bolin Ding, Jing Gao, Tarek F. Abdelzaher, and Jiawei Han (University of Illinois at Urbana-Champaign)*
- Balancing Energy, Latency and Accuracy for Mobile Sensor Data Classification  
*David Chu (Microsoft Research), Nicholas D. Lane (Microsoft Research Asia), Ted Tsung-Te Lai (National Taiwan University), Cong Pang (National University of Singapore), Xiangying Meng (Peking University), Qing Guo (Microsoft), Fan Li and Feng Zhao (Microsoft Research Asia)*
- EasyTracker: Automatic Transit Tracking, Mapping, and Arrival Time Prediction Using Smartphones  
*James Biagioni, Tomas Gerlich, Timothy Merrifield, and Jakob Eriksson (University of Illinois at Chicago)*

**15:30 - 17:00 Localization**

- Mobility Prediction-based Smartphone Energy Optimization for Everyday Location Monitoring  
*Yohan Chon, Elmurod Talipov, Hyojeong Shin, and Hojung Cha (Yonsei University)*
- Acoustic Shooter Localization with a Minimal Number of Single-Channel Wireless Sensor Nodes  
*Janos Sallai, Akos Ledeczi, and Peter Volgyesi (Vanderbilt University)*
- Stochastic Radio Interferometric Positioning in the 2.4 GHz  
*B.J.Dil and P.J.M.Havinga (University of Twente)*

**18:30 - 21:00 Banquet**

**11/3/2011 (Thursday)**

**8:30 - 10:00 New Frontiers**

- Programming Micro-Aerial Vehicle Swarms With Karma  
*Karthik Dantu, Bryan Kate, and Jason Waterman (Harvard University), Peter Bailis (UC Berkeley), and Matt Welsh (Google, Inc.)*
- CarMA: Towards Personalized Automotive Tuning  
*Tobias Flach, Nilesch Mishra, and Luis Pedrosa (University of Southern California), Christopher Riesz (Rutgers University, Camden Campus), and Ramesh Govindan (University of Southern California)*
- EasiCPRS: Design and Implementation of a Portable Chinese Pulse-wave Retrieval System  
*Jingjing Zhang, Rui Wang, Shilong Lu, Jibing Gong, Ze Zhao, Haiming Chen, and Li Cui (Institute of Computing Technology, Chinese Academy of Sciences), Nanyue Wang and Youhua Yu (Experimental Research Center, Chinese Academy of Chinese Medical Science)*

**10:30 - 12:00 Phones**

- Data Muling with Mobile Phones for Sensornets  
*Unkyu Park and John Heidemann (USC/ISI)*
- YouProve: Authenticity and Fidelity in Mobile Sensing  
*Peter Gilbert (Duke University), Jaeyeon Jung (Microsoft Research), Kyungmin Lee, Henry Qin, Daniel Sharkey (Duke University), Anmol Sheth (Technicolor Research), and Landon P. Cox (Duke University)*
- On the Feasibility of Real-Time Phone-to-Phone 3D Localization  
*Jian Qiu (China Mobile Research Institute), David Chu (Microsoft Research), Xiangying Meng (Peking University), and Thomas Moscibroda (Microsoft Research Asia)*

13:30 - 15:00     **Applications**

- Steam-Powered Sensing  
*Chengjie Zhang (USC/ISI), Affan Syed (USC/ISI and National University of Computer and Emerging Sciences, Pakistan), Young Cho and John Heidemann (USC/ISI)*
- Industry: Using dynamic WSNs in Smart Logistics for Fruits and Pharmacy  
*Dennis J.A. Bijwaard, Wouter A.P. van Kleunen (Ambient Systems), Paul J.M. Havinga (Ambient Systems and University of Twente), Leon Kleiboer and Mark J.J. Bijl (Ambient Systems)*
- The Hitchhiker's Guide to Successful Residential Sensing Deployments  
*Timothy W. Hnat, Vijay Srinivasan, Jiakang Lu, Tamim I. Sookoor, Raymond Dawson, John Stankovic, and Kamin Whitehouse (U. Virginia)*

15:30 - 19:30     **Demo and poster session with reception**

**11/4/2011 (Friday)**

8:30 - 10:00     **Human Sensing**

- PBN: Towards Practical Activity Recognition Using Smartphone-Based Body Sensor Networks  
*Matthew Keally and Gang Zhou (College of William and Mary), Guoliang Xing (Michigan State University), Jianxin Wu (Nanyang Technological University), and Andrew Pyles (College of William and Mary)*
- E-Gesture: A Collaborative Architecture for Energy-efficient Gesture Recognition with Hand-worn Sensor and Mobile Devices  
*Taiwoo Park, Jinwon Lee, Inseok Hwang, Chungkuk Yoo (Korea Advanced Institute of Science and Technology), Lama Nachman (Intel), and Junehwa Song (Korea Advanced Institute of Science and Technology)*
- AutoSense: Unobtrusively Wearable Sensor Suite for Inferring the Onset, Causality, and Consequences of Stress in the Field  
*Emre Ertin and Nathan Stohs (The Ohio State University), Santosh Kumar (University of Memphis), Andrew Raij (University of South Florida), Mustafa al'Absi (University of Minnesota), Siddharth Shah (The Ohio State University), Somnath Mitra (University of Memphis), Taewoo Kwon and Jae Woong Jeong (The Ohio State University)*

10:30 - 12:00     **Systems**

- Aveksha: A Hardware-Software Approach for Non-intrusive Tracing and Profiling of Wireless Embedded Systems  
*Matthew Tancreti, Mohammad Sajjad Hossain, Saurabh Bagchi, and Vijay Raghunathan (Purdue University)*
- Offline GC: Trashing Reachable Objects on Tiny Devices  
*Faisal Aslam (LUMS & University of Freiburg), Luminous Fennell, Christian Schindelbauer, and Peter Thiemann (University of Freiburg) and Zartash Afzal Uzmi (Lahore University of Management Sciences)*
- A Database in Every Sensor  
*Nicolas Tsiftes and Adam Dunkels (SICS)*

**Demos (Preliminary):**

- Demo: Achieving Robust Sensor Networks through Close Coordination between Narrow-Band Power Line and Low-Power Wireless Communications  
*Yanjun Sun, Xiaolin Lu, Soon-Hyeok Choi, Sandeep Bhadra, and Minghua Fu (Texas Instruments)*
- Demo: Achieving a 10x Lifetime Increase with IEEE 802.15.4e Motes  
*Sandeep Bhadra, Soon-Hyeok Choi, Yanjun Sun, and Xiaolin Lu (Texas Instruments)*

- Demo: Snap: Rapid Sensornet Deployment with a Sensornet Appstore  
*Simon Duquennoy, Niklas Wirström, and Adam Dunkels (SICS)*
- Demo: Zoom -- A Multi-Resolution Tasking Framework for Crowdsourced Geo-Spatial Sensing  
*Thanh Dang, Wu-chi Feng, Nirupama Bulusu, and Huy Tran (Portland State University)*
- Demo: Organic Solar Cell-based EnHANT Prototypes  
*Robert Margolies, Maria Gorlatova, Gerald Stanje, Paul Miller, Jianxun Zhu, Olivia Winn, John Sarik, Marcin Szczodrak, Baradwaj Vigraham, Luca Carloni, Peter Kinget, Ioannis Kymissis, and Gil Zussman (Columbia University)*
- Demo: Uno - A Sharing Infrastructure for Smartphone Sensors and Files  
*Jilong Liao and Qing Cao (The University of Tennessee, Knoxville)*
- Demo: A Mesh-based Command and Control Sensing System for Public Safety Scenarios  
*Nils Aschenbruck (University of Bonn & Fraunhofer FKIE), Jan Bauer and Raphael Ernst (University of Bonn), Christoph Fuchs (University of Bonn & Fraunhofer FKIE), and Jonathan Kirchhoff (University of Bonn)*
- Demo: Friendbook: Privacy-preserving Friend Matching based on Shared Interests  
*Zhibo Wang, Clayton Edward Taylor, Qing Cao, and Hairong Qi (University of Tennessee, Knoxville) and Zhi Wang (Zhejiang University)*
- Demo: HierTrack: An Energy-efficient Target Tracking System for Wireless Sensor Networks  
*Zhibo Wang, Zhi Wang, Honglong Chen, Jianfeng Li, and Hongbin Li (Zhejiang University)*
- Demo: AD-Sense: Activity-driven Sensing for Mobile Devices  
*Bin Xu, Jian Cui, and Guodong Sun (Tsinghua University)*
- Demo: Towards Bug-free Implementations for Wireless Sensor Networks  
*Manchun Zheng@comp.nus.edu.sg (National University of Singapore), Jun Sun and David Sanán (Singapore University of Technology and Design), Yang Liu and Jin Song Dong (National University of Singapore), and Yu Gu (Singapore University of Technology and Design)*
- Demo: Automatic Personal Identification System for Security in Critical Services - A Case Study  
*Stefano Tennina (CISTER Research Center, Polytechnic Institute of Porto (ISEP/IPP), Porto, Portugal), Marco Di Renzo (Laboratory of Signals and Systems (L2S), UMR 8506 CNRS - SUPELEC Univ Paris-Sud (Paris), France), and Luigi Pomante, Roberto Alesii, Fortunato Santucci, and Fabio Graziosi (Center of Excellence DEWS, University of L'Aquila, Italy)*
- Demo: An Environmentally-Powered Wireless Parking Guidance System for Open Car Parks  
*Pius Lee, Mingding Han, and Hwee-Pink Tan (Institute for Infocomm Research)*
- Demo: Tracking Vehicles in a Container Terminal  
*Jeonghoon Kang (Korea Electronics Technology Institute), Jongmin Hyun (Ohkyung Computer Technology), Dongik Kim, Kooklae Jo, Pil Mhan Jeong, and Taejoon Choi (Sonnonet), and Sukun Kim (Sinbinet)*
- Demo: Creating Interactive Virtual Zones in Physical Space with Magnetic-Induction  
*Xiaofan Jiang, Chieh-Jan Mike Liang, Kaifei Chen, Ben Zhang, Jeff Hsu, Jie Liu, and Feng Zhao (Microsoft Research Asia)*
- Demo: TRIDENT, Untethered Observation of Physical Communication Made to Share  
*Matteo Chini (University of Trento, Italy), Matteo Ceriotti (FBK-IRST, Italy), Ramona Marfievici (University of Trento, Italy), Amy L. Murphy (FBK-IRST, Italy), and Gian Pietro Picco (University of Trento, Italy)*
- Demo: Automatically Generating Interesting Events with LifeJoin  
*Alvin Cheung, Arvind Thiagarajan, and Samuel Madden (MIT CSAIL)*
- Demo: Rhinopithecus roxellana Monitoring and Identification using Wireless Sensor Networks  
*Chen Liu, Dingyi Fang, and Xiaojiang Chen (School of Information Science and Technology, Northwest University, Xi'an, China), Baoguo Li and Songtao Guo (School of Life Science, Northwest University, Xi'an,*

*China), Bin Wang (School of Information Science and Technology, Northwest University, Xi'an, China), and Tianzhang Xing (School of Information Science and Technology, Northwest University, Xi'an, China)*

- Demo: WISP-based Access Control Combining Electronic and Mechanical Authentication  
*Yuanchao Shu, Fachang Jiang, Zhiyu Dai, and Jiming Chen (Zhejiang University), Yu Gu (Singapore University of Technology and Design), and Tian He (University of Minnesota)*
- Demo: WiFlow - Real Time Travel Time Estimation Using Wi-Fi Monitors  
*A.B.M. Musa and Jakob Eriksson (University of Illinois at Chicago)*
- Demo: An Interoperability Development and Performance Diagnosis Environment  
*JeongGil Ko (Johns Hopkins University), Joakim Eriksson and Nicolas Tsiftes (Swedish Institute of Computer Science), Stephen Dawson-Haggerty (University of California, Berkeley), Jean-Philippe Vasseur and Mathilde Durvy (Cisco Systems), Andreas Terzis (Johns Hopkins University), Adam Dunkels (Swedish Institute of Computer Science), and David Culler (University of California, Berkeley)*
- Demo: INGA - An Inexpensive Node for General Applications  
*Felix Büsching, Ulf Kulau, and Lars Wolf (Technische Universität Braunschweig)*
- Demo: Tracking Transit with EasyTracker  
*Tomas Gerlich, James Biagioni, and Jakob Eriksson (University of Illinois at Chicago)*
- Demo: A Complete Framework for Programming Event Driven, Self-Reconfigurable Low Power Wireless Networks  
*Marcin Szczodrak and Luca Carloni (Columbia University)*
- Demo: Micro energy efficiency system based on QR code mote  
*Jeonghoon Kang and Hojung Lim (KETI), Jaechul Kim and Du-Hwan Yeo (SKCC), Pil Mhan Jeong, Taejoon Choi, and Dongik Kim (Sonnonet), Wonyoung Yang (Samsung C&T), and Sukun Kim (Sinbinet)*
- Demo: Capacitor Leakage Aware Duty Cycle Control for Energy Harvesting Wireless Sensor Networks  
*Ryo Shigeta, Yoshihiro Kawahara, and Tohru Asami (Graduate School of Information Science and Technology, The University of Tokyo)*
- Demo: A Robot-in-Residence for Data Center Thermal Monitoring and Energy Efficiency Management  
*Kevin Deland (Dept. of Electrical Engineering, Duke University), John Nelson (Dept. of Mechanical Engineering, Villanova University), James Thoensen (IBM Corporation), and Jonathan Lenchner, Canturk Isci, Jeffrey O. Kephart, and Jonathan Connell (IBM T.J. Watson Research Center)*
- Demo: Distilling Likely Truth from Noisy Streaming Data with Apollo  
*Hieu Le, Dong Wang, Hossein Ahmadi, Hongyan Wang, Yusuf Sarwar, Omid Fatemieh, Jeff Pasternack, Tarek Abdelzaher, Jiawei Han, and Dan Roth (University of Illinois at Urbana Champaign), Boleslaw Szymanski and Sibel Adali (Rensselaer Polytechnic Institute), and Raghu Ganti, Fan Ye, and Hui Lei (IBM Research)*
- Demo: Smarter Data Center Power Monitoring and Management  
*Wael El-Essawy, Alexandre Ferreira, Juan Rubio, Tom Keller, Malcolm Ware, Karthick Rajamani, Michael A. Schappert, and Hendrik Hamann (IBM)*
- Demo: Sword Fight With Smartphones  
*Zengbin Zhang (UC Santa Barbara), Jian Qiu (China Mobile Research), and David Chu and Thomas Moscibroda (Microsoft Research)*
- Demo: AVEKSHA: A Hardware-Software Approach for Non-intrusive Tracing and Profiling of Wireless Embedded Systems  
*Matthew Tancreti, Mohammad Sajjad Hossain, Saurabh Bagchi, and Vijay Raghunathan (Purdue University)*

- Demo: An Unobtrusively Wearable Sensor Suite for Inferencing of Onset, Causality, and Consequences of Stress in the Field  
*Emre Ertin and Nathan Stohs (The Ohio State University), Andrew Rajj (University of South Florida), Santosh Kumar (University of Memphis), and Mustafa al'Absi (University of Minnesota)*
- Demo: Gecko A Networking Energy-Scavenging Tag Sensor  
*Apoorva Bansal, Lohit Yerva, and Prabal Dutta (UMich) and Thomas Schmid (Utah)*

Posters (Preliminary):

- POSTER: A Novel Measurement System for Environmental Exposure Monitoring  
*Oliver Lauer, Patrick Leidenberger, Michael Mueri, Marco Zahner, Juerg Froehlich (ETH Zurich, Switzerland )*
- POSTER: Impulse Radio UWB Testbed for Indoor and Sensor Network Applications  
*Marco Zahner, Oliver Lauer, David Barras, Jürg Fröhlich (ETH Zurich, Switzerland)*
- POSTER: Securing the Internet of Things with DTLs  
*Thomas Kothmayr(Technical University of Munich), Wen Hu(CSIRO), Corinna Schmitt(Technical University of Munich), Michael Bronig(CSIRO), Georg Carle(Technical University of Munich)*
- POSTER: Reality-Check: Energy-Efficiency of WSN Concast Communication  
*Joachim Wilke, Christian Haas (Karlsruhe Institute of Technology)*
- POSTER: Deploying a Mesh-based Command and Control Sensing System in a Disaster Area Maneuver  
*Nils Aschenbruck, Jan Bauer, Raphael Ernst, Christoph Fuchs, Jonathan Kirchhoff (University of Bonn)*
- POSTER: Click Based IP Border Router for Low-power and Lossy Networks  
*Jongsoo Jeong, Haeyong Kim, Gysang Shin, Seontae Kim (ETRI, Korean)*
- POSTER: Phones and Robots: Brains and Brawn  
*Avraham Klausner, Ari Trachtenberg, David Starobinski (Boston University)*
- POSTER: Statistical Learning Strategies for Indoor RF-based Passive Localization  
*Chenren Xu, Bernhard Firner, Yanyong Zhang, Richard Howard, Jun Li (Rutgers University)*
- POSTER: EMMON - A WSN System Architecture for Large-Scale and Dense Real-Time Embedded Monitoring  
*Stefano Tennina, Ricardo Gomes, Mario Alves (CISTER Research Center, ISEP/IPP, Porto, Portugal), Malanie Bouroche, Farrukh Mirza (TCD, Ireland), Gabriella Carrozza, Vincenzo Ciriello (SESM scarl, Giugliano in Campania, Naples, Italy), Pedro Braga, Pedro Oliveira (Critical Software, Coimbra, Portugal)*
- POSTER: Group-based Neighbor Discovery Design in Mobile Low-Duty-Cycle Wireless Sensor Networks  
*Liangyin Chen, Shuo Guo (University of Minnesota), Yuanchao Shu, Fan Zhang (Zhejiang University), Yu Gu (University of Minnesota), Jiming Chen (Zhejiang University), Tian He (University of Minnesota)*
- POSTER: SUNSHINE Extension: A Hardware-Software Emulator for Flexible Sensor Nodes in Wireless Networks  
*Jingyao Zhang, Srikrishna Iyer, Patrick Schaumont, Yaling Yang (Virginia Tech)*
- POSTER: Smart Buildings, Sensor Networks, and the Internet of Things  
*Bernhard Firner, Robert S. Moore, Richard Howard, Richard P. Martin, Yanyong Zhang (Rutgers University)*
- POSTER: Earthen Site Protection using Wireless Sensor Networks  
*Jinzhong Han, Dingyi Fang, Xiaojiang Chen, Zhan Li, Na An, Zhouhu Deng (Northwest University, Xi'an, China), Baoying Liu (University of Salento, Lecce, Italy)*
- POSTER: Node Placement Adviser for Sensor Network Deployment  
*Shinji Mmotegi, Yasutaka Nishimura, Kiyohito Yoshihara, (KDDI R&D Laboratories)*

- POSTER: INPRESS: Indoor Climate Prediction and Evaluation System for Energy Efficiency using Sensor Networks  
*Jae Yoon Chong, Jinwook Baek (IRISEN.org), Sukun Kim (Sinbinet)*
- POSTER: Reducing Power Consumption of Human Activity Sensing using Compressed Sensing  
*Daito Akimura, Yoshihiro Kawahara, Tohru Asami (University of Tokyo)*
- POSTER: Enhanced Collaborative Sensing Scheme for User Activity Recognition  
*Yuki Nishida, Yoshihiro Kawahara, Tohru Asami (University of Tokyo)*
- POSTER: Single Channel Full-Duplex Wireless  
*Mayank Jain, Jung Il Choi(Stanford), Kannan Srinivasan (UT Austin), Siddharth Seth, Philip Levis, Sachin Katti (Stanford)*
- POSTER: dQuorum: Neighbor Discovery With Distributed Quorum System  
*Desheng Zhang, Tian He (University of Minnesota), Yunhuai Liu (Shenzhen Institute of Advanced Technology, China), Yu Gu (Singapore University of Technology and Design, Singapore), Fan Ye, Raghu k. Ganti, Hui Lei (IBM T.J. Watson Research Center)*