Second International Workshop on the Swarm at the Edge of the Cloud (SWEC)

April 13, 2015, Seattle, Washington

General Chair:
Alberto Sangiovanni-Vincentelli, UC Berkeley

Program Co-Chairs:
Roozbeh Jafari, UT Dallas
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Logistics Co-Chairs:
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Description

Sensor and actuator swarms, which can be wirelessly interconnected and combined with cloud-based services and applications on handheld devices, offer an unprecedented ability to monitor and act on a range of evolving physical quantities. Sensor and actuator-based systems have been proposed and deployed for a broad range of applications, but the potential goes far beyond what has been accomplished so far. When realized in full, these technologies can integrate the cyber world (centered today in the cloud) with our physical/biological world. This can enable humans, machines and infrastructure that are far more aware and adaptive to their environment. Just as today much of our data resides "in the cloud," tomorrow much of our physical world will have a presence "in the swarm." From the perspective of the information world, this revolution gives the information network eyes, ears, hands, and feet to interact with the physical world. From the perspective of the physical and biological world, this revolution enables coordination, intelligence, and efficient use of resources. This workshop will bring together world-class experts on the enabling technology, potential applications, and risks of swarm technologies.

Topics of Interest

- Architectures, including APIs, sensors, actuators, computing devices and protocols
- Assurance, including security, privacy, and verification
- Control, including adaptation, verification and synthesis
- Data management, including aggregation, storage, learning, and mining
- Modeling of swarm systems
- Ontologies of sensors, actuators, and services
- Methodologies, including formal methods, contracts, co-simulation, and co-design
- Energy-optimized services and devices
- Localization technologies and location-aware services
- Resource identification, management, allocation, and optimization
- Temporal dynamics, including safety-critical networked operation
- User interaction, including novel interfaces, omnipresence
- Applications to CPS Systems such as health, transportation, energy, smart buildings and smart cities.
- Relationships among Swarm Systems, Systems-of-Systems
- Internet-of-Things

Program Committee:

- Jeff Bilmes, UW
- David Blaauw, U. Michigan
- Prabal Dutta, U. Michigan
- Emily Fox, UW
- Alex Halderman, U. Michigan
- Doug Jones, UIUC
- Carlos Guestrin, UW
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- Rahul Mangharam, U. Pennsylvania
- Richard Murray, Caltech
- George Pappas, U. Pennsylvania
- Jan Rabaey, UC Berkeley
- Tajana Simunic Rosing, UCSD
- John Wawrzynek, UC Berkeley

Schedule

January 31, 2015	Submission deadline
February 14, 2015	Notifications
February 21, 2015	Camera Ready
April 13, 2015	Workshop day

Guidelines for Manuscripts

Papers should describe original work and be maximum 6 pages in length using the ACM SIGS style. A maximum of two extra pages is allowed.