Spatial and COllective PErvasive Computing Systems (SCOPES)

Workshop at IEEE SASO 2015, located at MIT, Cambridge, USA on September 21, 2015

Overview

This workshop aims at combining three distinct, yet closely related areas of research, which will likely together play a major role in producing the key technical results needed to develop large-scale adaptive distributed systems of future networked scenarios.

- **Spatial computing:** Spatial computing systems are systems of individual entities, typically situated in a physical environment, in which the ``functional goals'' of the system are generally defined in terms of the system's spatial structure. Typically, such systems are developed following a self-organisation approach, making spatial patterns arise by emergence.
- **Collective adaptive systems:** Collective computing systems are systems of tightly entangled components, achieving an overall goal through widespread cooperation, typically relying on self-adaptation techniques and collective/social intelligence.
- **Pervasive computing:** Pervasive computing systems and the "Internet of Things" deal with current and emerging scenarios in which humans, sensors, mobile, and embedded devices engage in complex interactions in a shared environment.

The goal of this workshop is to foster the creation of general-purpose solutions for supporting the development of these kinds of systems, particularly as regards generalizable techniques and architectures. Topics of interest include:

- Foundational models of spatially embedded collective systems, exhibiting resilience, robustness and scalability properties as required by emerging pervasive computing scenarios.
- Tools and tool-chains targeting large-scale situated systems: programming or specification languages, compilers and proof-checking techniques, simulators, tools for property verification, libraries and APIs, supporting platforms, whole infrastructures.
- Innovative methods and techniques for system development, including design patterns, software methodologies, best practices, and practical experience reports.
- Applications contexts and scenarios of general interest to foster the identification of new problems and solutions, taking inspiration from cyber-physical systems, the Internet of things, sensor networks, smart-cities, etc.

Paper Submission

Papers should present original work and be no longer than 6 pages in the standard IEEE two-column format. All manuscripts should be submitted in PDF form through the submissions system for SCOPES at EasyChair.

Papers will be peer reviewed on the basis of originality, readability, relevance to themes, soundness, and overall quality. Workshop proceedings will be published on IEEE Xplore in parallel with the main conference proceedings. Post-proceedings publication in a journal is planned.

Questions should be addressed to saso.scopes2015@easychair.org.

Important Dates

- Workshop paper submission: July 11, 2015
- Notification of accepted papers: July 31, 2015
- Camera-ready paper deadline: August 10, 2015
- Workshop at SASO: September 21, 2015

Organizers

- Dr. Jacob Beal (Raytheon BBN Technologies, USA)
- Dr. Jane Hillson (University of Edinburgh, UK)
- Dr. Mirko Viroli (Univ. of Bologna, Italy)

Program Committee

TBA