MC^3: Mobility and Communication for Cooperation and Coordination

in conjunction with The International Conference on Computing, Networking and Communications (ICNC 2012)

Maui, Hawaii, USA, January 30 - February 2, 2012

Scope of the Workshop

Networks of devices that are able to control and use their motion and communication capabilities constitute a new remarkable perspective for the cooperation and coordination of groups of heterogeneous devices in order to accomplish task oriented applications.

To date, the networking community has addressed the inclusion of some control mechanisms, especially for energy consumption and mobility control, inside the classical ISO/OSI stack. However, this approach introduced very limited results and innovations whereas the inclusion of mechanisms such as optimization, evolution, coordination and cooperation directly among the network primitives would offer a totally new perspective. On the other hand, the robotics community has used communications among the agents for coordination, but it completely neglects or merely focuses partially on the possibilities given by the consideration of motion and communication aspects and issues in the direct control of the devices, both singularly and seen as a whole.

Mobile wireless sensors and actuators, robots and drones represent the basic entities of Wireless Networked Robotics (WRN). Wireless networked robotics proposes to bridge the gap between objectives and methodologies of wireless networking and robotics research communities, laying the pathway toward information-centric design of cooperative, autonomous and self-organized networks. A broad multidisciplinary approach is needed to lead this pathway that involves, besides networking and robotics also optimization, machine learning, swarm intelligence, adaptive systems and often draws inspiration from natural and biological systems.

This workshop aims to bring together state-of-the-art contributions on the design and implementation of architectures, algorithms and protocols for current and future applications of wireless networked robotics. Original, unpublished contributions are solicited in all aspects of this discipline.

Topics of Interests

Possible topics include, but are not limited to:

- ✓ communication and motion aware protocols for coordination and cooperation of group of heterogeneous devices
- ✓ communication approaches for machine-to-machine wireless communications
- ✓ modelisation, simulation and evaluation of coordination and cooperation schemes in wireless networked robotics
- ✓ task profiling, assigning and scheduling in groups of cooperative devices
- ✓ impact and optimization of network performance through mobility and communication control of the devices
- ✓ machine learning schemes in communication and motion aware algorithms for wireless networked robotics
- ✓ bio-inspired algorithms for cooperation and coordination in wireless networked robotics
- ✓ self-organization in wireless networked robotics
- ✓ swarm intelligence and swarm robotics algorithms in wireless networked robotics
- ✓ cognitive radio and wireless networked robotics
- ✓ use cases and applications for wireless networked robotics
- ✓ experiences with testbeds of wireless networked robotics

Submission Instructions

For authors: Please follow the author instructions at `http://www.conf-icnc.org/author.htm`.
For submission: Workshop papers should be submitted via EDAS at the conference page: `http://edas.info/N10993`.

Important Dates

Paper submission: August 31, 2011
Paper acceptance: September 30, 2011
Camera-ready paper: October 20, 2011

Program Committee

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