



## Preliminary Call for Abstracts – CSCN 2012

### 2012 Southeastern Workshop on Cognitive Sensing, Computing & Networking and Their Applications in Human-Cyber-Physical Systems



August 15 (Wednesday), 2012, UA campus, Tuscaloosa, Alabama

**Workshop URL:** <http://qh.eng.ua.edu/CSCN2012/> (Sponsored by NSF)

*Goal: (1) to provide attendees with such an opportunity to know their colleagues' research activities in nearby schools such as UA, Auburn, GSU, UGA, MSU, etc.; (2) to help attendees find strong collaborators who also work in the field of CSCN (Cognitive Sensing, Computing & Networking), a new research direction for human-cyber-physical system design.*

#### Workshop Theme

"Cognitive" methods have been increasingly important in many fields. In order to deal with a large number of variables in the complex dynamic systems, cognitive techniques such as situation awareness, behavior-based intelligence, and multi-agent based coordination should be adopted by conventional system design. For example, in the study of cognitive sensing, different types of awareness capabilities (spatial, data, group, context) are developed within a multi-agent computing framework to maximize the efficiency of resource utilization and minimize the workload of system management.

This one-day workshop sponsored by NSF aims to bring researchers together to exchange ideas on cognitive sensing, computing and networking (CSCN). We emphasize the applications of CSCN for human-cyber-physical system design such as behavioral biometrics, biomedical systems, structure health monitoring, smart grid, robots, GENI, and other systems with tight human, cyber and physical coupling. We expect that a large part of participants will be from the southeastern schools (i.e., universities in Alabama, Georgia, Tennessee, Mississippi, etc.). No registration fee is needed. Free lunch and coffee breaks. Hotel and travel coverage for long-distance attendees. The workshop will include presentations (12~15), posters, demos, and other activities. Attendees will receive a collection of related documents.

The authors need to prepare **a 2-page abstract** that could be any of the following contents:

- **Cognitive sensing:** Smart sensors, situational compressive sampling, situational reconfigurable sensor arrays, situational data/information/knowledge fusion, and others.
- **Cognitive computing:** Distributed machine learning, multi-agent based computing, behavior-based intelligence, situational reconfigurable computing, and others.
- **Cognitive networking:** Cognitive radios and software radios, intelligent sensor networks, social network behavioral analysis, GENI and next-generation Internet models, etc.
- **CSCN applications to human-cyber-physical systems (HCPS):** Cognitive methods to improve interactions among human (users, subjects), cyber resources (such as computing algorithms, control models, sensing mechanisms, etc.) and physical resources (such as facilities, hardware, analog devices, etc.). CSCN applications to enhance the HCPS design in multiple fields such as behavioral biometrics, biomedical platforms, civil infrastructure, power systems, etc.

The 2-page abstract should include author information, "cognitive" design principles, HCPS application examples, preliminary results, references, etc.. **All abstracts can be uploaded at the workshop website. Please email questions and suggestions to Drs. Fei Hu / Qi Hao (fei@eng.ua.edu; qh@eng.ua.edu).**

#### Important Dates:

By July 1, 2012	Two-page abstract due
By July 15, 2012	Acceptance notice
By August 1, 2012	Email us your participation confirmation letter; prepare your slides or posters
August 15, 2012	See you on UA campus!