Call for Papers and Panel Proposals

7th International Workshop on Software Cybernetics

IWSC 2010

In conjunction with ***COMPSAC 2010,***

Seoul, Korea, July 19-23, 2010

The effectiveness of software technology and the quality of generated software have greatly impact on technological products and services, economic activities, defense, scientific research and social life. This is particularly true as software tends to be services and operate in open and violate environments, such as Internet. In order to achieve the objective that software can serve well in dynamic environment with changing user requirements, the software must be adaptive based on the external input and feedback of the application physical system.

This workshop, the 7th International Workshop on Software Cybernetics, which has been held in conjunction with the annual international Computer Software and Applications Conference (COMPSAC) since 2004, will focus on software cybernetics, to explore the interplay between software behavior and control in physical or/and digital environments and is intimately related to cyber-physical systems. It intends to unify and expand various seemingly unrelated research topics under different umbrellas, such as adaptive software, adaptive rejuvenation, active security enhancement, runtime monitoring and adapting of software behavior, QoS control, and supervisory control approaches for software synthesis. The major question is how software can continuously satisfy the requirements under dynamic situation, such as disturbances of network environments, system failures, capacity saturation, security attacks, and/or changed requirements.

The following major issues will be covered in the workshop:

- Modeling of cyber physical systems for critical applications
- Formalization and quantification of feedback and self-adaptive control mechanisms in software
- Adaptation of control theory principles to software processes and systems, including the monitoring and adjusting runtime software behavior or QoS
- Integration of software, networking and control engineering to achieve adaptive software with satisfactory QoS under dynamic situation

Topics of emphasis will include, but not limited to, the following:

- Modeling languages, architecture, control, and prototyping techniques for cyber-physical systems
- Models and use of feedback control mechanisms in runtime software behavior, software evolution, processes and systems
- Modeling, assessment, control, and adaptation techniques for QoS
- Situation-aware, self-adaptive, self-managing, and learning software
- Dynamic decision-making methods for requirement engineering
- Feedback control in fault-tolerant computing
- Control of software security and safety
- Adaptive testing and test case generation
- Software reliability modeling, assessment and testing
- Control of adaptive software rejuvenation
- Control of embedded-software behavior
- Relationship between simulation and controllability
- Software-enabled control; software architectures for control systems
- Adaptive system design and architecture
- Modeling of evolving environments and dynamic situations
- Web services modeling, testing and evaluation
- Machine learning techniques for software engineering and QoS control
- Use of cybernetic theory in application and systems, such as smart transportation, climate change, critical physical infrastructures, and biological systems

IMPORTANT DATES

- Deadline for submission: ***1 March 2010***
- Notification of Acceptance: ***31 March 2010***
- Camera-ready copy: ***30 April 2010***

SUBMISSION

Authors are invited to submit original, unpublished research papers as well as industrial practice papers. Simultaneous submissions to other publications or conferences are not permitted. Detailed instructions for electronic paper submission, panel proposals and review process can be found at http://www.compsac.org/. The length of the camera-ready of an accepted paper will be limited to 6 pages (IEEE Proceedings style) with up to two additional pages (with charges for each of the additional pages), and printed on 10-12 point fonts. Follow the IEEE Computer Society Press Proceedings Author Guidelines to prepare your papers. At least one of the authors of each accepted paper is required to pay full registration fee and presented the paper. Arrangements are being made to publish selected accepted papers in reputable journals. Upload regular papers in PDF, Postscript, or RTF format at compsac.org

Submit panel proposals in plain text via email to program co-chair Professor Zhi Jin at *zhijin@sei.pku.edu.cn*

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