CPSWeek 2013

Submitted by Katie Dey on Fri, 08/24/2012 - 5:26pm
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The CPSWeek brings together five leading conferences - **HSCC**, **ICCPS**, **IPSN**, **HiCoNS**, and **RTAS** - as well as several workshops & tutorials on various aspects on the research and development of cyber-physical systems: Embedded Systems, Hybrid Systems, Real-Time and Sensor Networks.

Cyber-Physical Systems (CPS) are engineered systems whose operations are monitored, coordinated, controlled, and integrated by a computing and communication core embedded in all types of objects and structures in the physical environment. Such systems must be operated safely, dependably, securely, efficiently and in real-time. Advances in this field will have great technical, economic and societal impacts in the near future.

**IMPORTANT DATES**

The submission deadline for the conferences is **Oct 15th, 2012 GMT-12**.

**16th International Conference on Hybrid Systems: Computation and Control (HSCC)** focuses on research that involves a blend of concepts, tools, and techniques from computer science, control theory, and applied mathematics for analysis and control of dynamical systems that exhibit combined continuous and discrete (hybrid) dynamics. By drawing on strategies from both computation and control, this field offers techniques applicable to both man-made, cyber-physical systems (ranging from mixed signal circuits and small robots to global infrastructure networks) and natural systems (ranging from biochemical networks to physiological models). HSCC has long been a leading, single-track conference for such rigorous, interdisciplinary approaches to dynamical systems with an emphasis on computational aspects. Researchers from academia and industry are invited to submit manuscripts on their latest research in this area.

**HSCC 2013 Call for Papers**
4th International Conference on Cyber-Physical Systems (ICCPS) will put specific emphasis on (but not limited to) the following overarching themes: Transportation, Robotics, and Energy

Work focused on theory, algorithms, implementation and field deployments will be of great interest to the conference. Areas of interest to support these applications include (but not limited to): control, optimization, machine learning, verification, data mining, signal processing, information theory. Tools and technologies of interest include (but not limited to): sensor networks, embedded systems, human in the loop systems, social networks, mobile computing, participatory sensing, crowd-sourcing, cloud computing.

ICCPS 2013 Call for Papers

The 12th International Conference on Information Processing in Sensor Networks (IPSN) is a leading, single-track, annual forum on research in networked sensing and control, broadly defined. IPSN brings together researchers from academia, industry, and government to present and discuss recent advances in both theoretical and experimental research. Its scope includes signal and image processing, information and coding theory, databases and information management, distributed algorithms, networks and protocols, wireless communications, collaborative objects and the Internet of Things, machine learning, mobile and social sensing, and embedded systems design. Of special interest are contributions at the confluence of a multiple of these areas.

IPSN 2013 Call for Papers

The 2nd ACM International Conference on High Confidence Networked Systems (HiCoNS) aims to bring together novel concepts and theories that will help in the development of the science of high confidence networked systems, in particular those considered cyber-physical systems (CPS) and their interactions with human decision makers. The conference will focus on system theoretic approaches to address fundamental challenges to increase the confidence of networked CPS by making them more secure, dependable, and trustworthy. An emphasis will be the control and incentive challenges arising as a result of complex interdependencies between networked systems, in particular those at the intersection of cyber and physical dynamics. In doing so, the conference will advance the development of a principled approach to high-confidence networked CPS.

HiCoNS 2013 Call for Papers

The 19th IEEE Real-Time Embedded Technology & Applications Symposium (RTAS) consists of three tracks:

Track 1: Applications, Systems, RTOSs and Tools. Papers submitted to this track are aimed at presenting specific systems and implementations. They must
introduce the application context and clearly define motivating application examples. Authors must introduce the related research challenges and illustrate the theoretical foundations of the methodology adopted in the considered application/tool/RTOS, with applicability. Papers in this session must include a section on experimental results with a real implementation of the proposed system or applicability to an industrial case study or working system. The experiment/use case discussion must highlight problems/bottlenecks encountered in the implementation and show the measurements/evaluations on the prototype. Simulation-based results are acceptable when the authors motivate the impossibility of an actual system development.

**Track 2:** Applied Methodologies and Foundations. Papers submitted to this track are aimed at basic methodologies and algorithms that are applicable to real systems to solve specific problems. Authors must introduce the application context and clearly define motivating application examples. The system models and any assumptions used in the derivation of the results must be applicable to real systems and reflect actual needs. Papers must also include a section on experimental results, preferably on real case studies or models of real systems, although the use of synthetic workloads and models is acceptable if motivated. Papers failing to address applicability as defined in the previous guidelines are not considered as acceptable.

**Track 3:** Hardware-Software Co-design. This track focuses on design methodologies and tools for hardware/software integration and co-design of modern embedded systems for real-time applications. General topics relevant to this track include, but are not limited to, architecture description languages and tools, WCET analysis, software architectures, design space exploration, synthesis and optimization. Of special interest are SoC design for real-time applications, special purpose functional units, specialized memory structures, multi-core chips and communication aspects, FPGA simulation and prototyping, software simulation and compilation for novel architectures and applications, as well as power, timing and predictability analyses.

**RTAS 2013 Call for Papers**

**Workshops**

1. 5th Workshop on AdaPtive and Reconfigurable Embedded Systems (APRES 2013)
2. 4th International Workshop on Networks of Cooperating Objects for Smart Cities (CONET/UBICITEC 2013)
3. 3rd International Workshop on Mobile Sensing: The Future, brought to you by Big Sensor Data
5. 2nd Workshop on Formal Composition of Motion Primitives
6. 1st Workshop on Cyber-Physical Systems Education (CPS-Ed)
7. Medical Cyber-Physical Systems Workshop (MCPS 2013)
8. Numerical Software Verification (NSV) VI
9. Workshop on Computation and Control (COMCO)
10. Workshop on Signal Processing Advances in Sensor Networks
Tutorials

1. Introduction to Control Theory and Its Application to Feedback Computing
2. Model Checking for Probabilistic Hybrid Systems
3. Model-based design of cyber physical systems
7. Experimenting For Everyone With a Hexacopter: Getting Practical Data for your Research


Event Details

Location: Philadelphia, PA, USA
URL: http://rtg.cis.upenn.edu/cpsweek/

Sync this event to your calendar