

CALL FOR PAPERS

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Track on Cyber-Physical Systems (CPS)

The 35th ACM Symposium on Applied Computing (SAC 2020)

March 30th – April 3rd, 2020, Brno, Czech Republic

<http://www.sigapp.org/sac/sac2020/>

ACM Symposium on Applied Computing (SAC 2020)

Sponsored by ACM Special Interest Group on Applied Computing

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Aims and Scope

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. CPS has emerged as a unifying name for systems where the cyber parts, i.e., the computing and communication parts, and the physical parts are tightly integrated, both at the design time and during operation. Such systems use computations and communication deeply embedded in and interacting with physical processes to add new capabilities to physical systems. Such systems must be operated safely, dependably, securely, efficiently and in real-time. These cyber-physical systems include a wide range of applications, such as transportation, healthcare, automotive, energy, manufacturing, entertainment, consumer electronics, environmental monitoring, aerospace, robotics, etc., and all of which will be essential pieces of our social infrastructure. Therefore, advances in this field will have great technical, economic and societal impacts in the near future. However, the vision of CPS faces some core challenges of multidisciplinary research, as their relevant technologies appear in diverse areas of science and engineering. Therefore, there is an emerging consensus that new methodologies and tools are urgently needed to support cyber-physical systems.

Topics of Interest

The topics of interest include but not limited to the following:

- Ubiquitous and pervasive computing for enhanced user interactions with CPS
- Mobile computing and devices for CPS
- Wearable cyber-physical systems and applications
- Design automation and tool chains for CPS
- Networking and communication for CPS applications
- Cloud computing and distributed systems to support scalability and complexity of CPS
- Real-time data analytics and machine learning for CPS
- Control of CPS

- Security and privacy of CPS
- Resilient and Robust System Design for CPS
- Simulation and experimental prototypes of CPS
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- Simulation and experimental prototypes of CPS

Important Dates

Paper submission: ~~September 16, 2019~~ **September 29, 2019**
Acceptance notification: ~~November 15, 2019~~ **November 22, 2019**
Camera-ready copies: ~~December 1, 2019~~ **December 15, 2019**
Author registration: ~~December 1, 2019~~ **December 15, 2019**

Submission Guidelines

Authors are invited to submit original and unpublished papers of research and applications for this track. Full papers are limited to 8 pages with the option for up to 2 additional pages at extra charge. The author(s) name(s) and address(es) must not appear in the body of the paper, and self-reference should be in the third person. This is to facilitate double-blind review. Only the title should be shown at the first page without the author's information. Papers must be formatted according to the ACM SAC template. Contributions must contain original unpublished work. Papers that have been concurrently submitted to other conferences or journals (double submissions) will be automatically rejected. For full submission guidelines, please follow the instructions on the ACM SAC 2020 website. Please submit your contribution via SAC 2020 Web page.

Student Research Competition (SRC) Program

Graduate students seeking feedback from the scientific community on their research ideas are invited to submit abstracts of their original unpublished and in-progress research work in areas of experimental computing and application development related to SAC 2020 Tracks. The Student Research Competition (SRC) program is designed to provide graduate students the opportunity to meet and exchange ideas with researcher and practitioners in their areas of interest.

All research abstract submissions will be reviewed by researchers and practitioners with expertise in the track focus area to which they are submitted. Authors of selected abstracts will have the opportunity to give poster presentations of their work and compete for three top winning places. The SRC committee will evaluate and select First, Second, and Third place winners. The winners will receive cash awards and SIGAPP recognition certificates during the

conference banquet dinner. Authors of selected abstracts are eligible to apply to the SIGAPP Student Travel Award program for support.

SRC Submission - Graduate students are invited to submit abstracts of their original unpublished and in-progress research work following the instructions published at SAC 2020 website. The abstracts are limited to 3 pages with the option for 1 additional page at extra charge. The submissions must address research work related to a SAC track, with emphasis on the innovation behind the research idea, including the problem being investigated, the proposed approach and research methodology, and sample preliminary results of the work. In addition, the abstract should reflect on the originality of the work, innovation of the approach, and applicability of anticipated results to real-world problems.

Please note SRCs and regular papers must be submitted at different pages of the START web system. Submitting the same abstract to multiple tracks is not allowed. It is recommended to refer to the official SRC Information Sheet for further details.

Registration

Paper registration is required, allowing the inclusion of the paper/poster in the conference proceedings. An author or a proxy attending SAC MUST present the paper: This is a requirement for the paper/poster to be included in the ACM/IEEE digital library. No-show of scheduled papers and posters will result in excluding them from the ACM/IEEE digital library.

Track Chairs

Dr. Song Han (University of Connecticut, US),
Dr. Jingtong Hu (University of Pittsburgh, US),
Dr. Chun Jason Xue (City University of Hong Kong, Hong Kong)