37th SAC Symposium on Applied Computing
April 25-29, 2022, Brno, Czech Republic

SAC'22
Symposium on Applied Computing

Cyber-Physical Systems - Call for Papers

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 components, 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 CPS 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 CPS.

Paper submission and acceptance

Authors are invited to submit original and unpublished papers of research and applications for this track.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 ($80 per page). The author 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 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 Contributions must contain original unpublished work.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 2022 website. Please submit your contributions via SAC 2022 Webpage.

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

Student research competition

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. Authors of selected abstracts will have the opportunity to share and discuss their research work through poster and oral presentations and compete for the three top winning places as selected by the SRC committee. The winners will receive cash awards and SIGAPP recognition certificates. Furthermore, invited authors are eligible to apply for the SIGAPP Student Travel Award Program (STAP) for support. SRC abstracts are limited to 4 pages and submitted via SAC 2022 Webpage. Please visit https://src.acm.org/ for more information.

Topics of interest

- Ubiquitous and pervasive computing with CPS
- Mobile computing and devices for CPS
- Wearable CPS and applications
- Design automation and tool chains for CPS
- Networking and communication for CPS applications
- Cloud computing and distributed systems for CPS
- Real-time CPS
- Control of CPS
- Safety and dependability for CPS
- Security and privacy of CPS
- Resilient and robust systems design for CPS
- Machine learning for CPS
- Simulation and experimental prototypes of CPS

Dates

Submission deadline:	~~15 October 2021~~ 24 October 2021
Notification of acceptance:	10 December 2021
Deadline for final manuscript:	21 December 2021
Author registration:	21 December 2021

Track chairs

Wanli Chang – Hunan University, China
Pi-Cheng Hsiu – Academia Sinica, Taiwan
Jingtong Hu – University of Pittsburgh, USA

TPC members

Amir Aminifar	Lund University, Sweden
Jim Anderson	UNC Chapel Hill, USA
Samarjit Chakraborty	UNC Chapel Hill, USA
Wei-Ming Chen	MIT, USA
Ya-Shu Chen	NTUST, Taiwan
Tullio Facchinetti	University of Pavia, Italy
Nan Guan	City University of HK, China
Song Han	University of Connecticut, USA
Hyoseung Kim	UC Riverside, USA
Christoph Kirsch	University of Salzburg, Austria
Jinkyu Lee	SKKU, Korea
Chung-Wei Lin	NTU, Taiwan
Shan Lin	Stony Brook University, USA
Cong Liu	UT Dallas, USA
Hashan Mendis	Academia Sinica, Taiwan
Tatsuo Nakajima	Waseda University, Japan
Daniele Jahier Pagliari	Polytechnic University of Turin, Italy
Chen Pan	TAMUCC, USA
Kyung-Joon Park	DGIST, Korea
Debayan Roy	TU Munich, Germany
Julian Rrushi	Oakland University, USA
Lucia Seno	National Research Council, Italy
Mo Sha	Florida International University, USA
Qixin Wang	HK Polytechnic University, China
Jason Xue	City University of HK, China
Lei Yang	University of New Mexico, USA
Mengying Zhao	Shandong University, China
Dakai Zhu	UTSA, USA