CALL FOR PAPERS - 2nd IFAC Conference on Cyber-Physical & Human Systems

CALL FOR PAPERS | The 2nd IFAC Conference on Cyber-Physical & Human Systems
December 14-15, 2018, Miami, USA

- **Submission Deadline: April 15, 2018**
- **Acceptance notification: September 1, 2018**
- **Final Submission Deadline: October 1, 2018**

Steady advances in controls, communications, and computing are enabling new forms of cyber-physical systems (CPS), and are simultaneously redefining the role and position of humans in broad areas of applications and blurring the traditional boundaries between humans and technology. Therefore, for the most part, human interactions in these technical systems are becoming more complex and raising a range of new technical challenges and broader questions, touching social and even cultural domains. This newfound relationship between humans and technology must be studied from an engineering perspective, a human-factors perspective, and from the perspective of social sciences. This conference series on Cyber-Physical & Human Systems (CPHS) is intended to examine these multidisciplinary dimensions.

The second IFAC conference on CPHS builds on the success of CPHS 2016 and the H-CPS-I meeting in 2014. CPHS 2018 aims to bring together researchers and practitioners from academia and industry to share scientific and technological advances as well as gain a deeper understanding of the interactions between cyber-physical systems and humans. Of particular interest are human-centered technologies in a wide-range of applications including transportation, energy, robotics, manufacturing, and health-care. Examples of topics include human-machine symbiosis, humans as supervisors/operators of complex engineering systems, humans as agents in multi-agent systems, and humans as elements in controlled systems. In addition to the technical and theoretical contributions, CPHS 2018 also invites papers studying the ethical questions, public policies, regulatory issues, and new risks associated with interactions between humans and cyber-physical systems. Towards this end, we invite submissions in the following categories:

- Full conference papers (6-8 pages) addressing relevant CPHS topics, which will be

peer-reviewed, and presented at the conference (if accepted). Review, Tutorial and Vision papers are also welcome.

- Extended abstracts (a minimum of 500 words) addressing topics of interest, subject to the same review process as full papers, and invited to present at the conference (if accepted).
- Invited sessions, consisting of six full papers and/or short abstracts, to fill a two-hour block.
- Tutorials and/or workshops, a half-day or full-day event either before or after the conference (please contact the organizers for guidance and details)

We encourage submissions on human-centered technologies in a wide-range of applications including transportation (ground, air, and space), energy, robotics, manufacturing, and health-care. Example of topics include the following:

- Human-Machine Symbiosis
  - Control of smart prosthetics
  - Neurostimulation
  - Exoskeletons
  - Biomedical implants
  - Augmented Human
- Humans as supervisors/operators of complex engineering systems
  - Human-Machine interaction in flight control
  - Cooperative control in Automotive systems (ex. ADAS)
  - Process plant operation
  - Robotic surgery
  - Spacecraft control
  - Control in hazardous environments
  - Automated or semi-automated trains
  - Remote operation of robotic teams (ex. in rescue scenarios)
- Humans as agents in multi-agent systems
  - Intelligent road transportation
  - Next-generation air traffic management
  - Flexible manufacturing
  - Assistive robotics
  - Smart Grid and Demand Response
  - Urban mobility
- Humans as elements in controlled systems
  - Comfort control in homes
  - Smart cities
  - Rescue robotics
  - Assistive devices
  - Smart infrastructure
  - Connected buildings
- General CPHS topics
  - Semiautonomous and mixed-initiative systems
  - Shared control
  - Cognitive control

- Decision-support for human operators
- Recent theoretical developments impacting the open problems
- Ethics, public policy, and regulatory issues
- Potential impact and open problems

The conference program will only include papers of the highest standard as selected by the IPC, in accordance with the IFAC guidelines www.ifac-control.org/publications/Publications-requirements-1.4.pdf. All papers and abstracts will be accepted with the understanding that the authors will present them at the CPHS Conference. At least one author of every accepted paper will be required to register for the conference before uploading the final version. Accepted papers and abstracts will be presented either in oral or poster format. Accepted papers will be included in the conference ipreprintsi (USB drive) and published online, whereas accepted abstracts will only be included as preprints and not published on-line. All papers, abstracts, and invited session proposals must be submitted through the conference submission website, www.cphs2018.org, and conform to the policy found therein.

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? Call for Papers: Embedded Systems Letters Special Issue on Real-Time Technologies in CPS CfP: 11th International Conference on Model Transformation (ICMT 2018) ?

Calls for Papers