Special Issue on Dependable Cyber Physical Systems (SI:DCPS19)

Cyber-Physical Systems (CPS), featured by the systematic integration of computation, communication, and physical processes, have become increasingly important. Typical applications of CPS include civil infrastructure monitoring, automotive and transportation systems, smart buildings, smart energy systems, cyber-physical biochip, and wearable devices. CPS is an interdispliary field that requires perspectives from different levels of abstraction. Due to the deeply complex intertwining among different components, CPS design and management pose fundamental challenges in multiple aspects of system dependability including real-time responsiveness, fault tolerance, privacy and security, sustainability, reliability, scalability, and flexibility. Tackling these challenges requires innovative interdisplinary efforts. This special section aims to present the state-of-the-art advances in the following topics of dependable CPS:

- Dependability measurement, modelling, evaluation, and tools for CPS
- Architectural framework and hardware design methodologies for dependable CPS
- Tools and methods of data analytics for dependable CPS
- Dependable software platforms for managing CPS
- Dependability issues in automotive CPS, social CPS, mobile CPS, Cloud-assisted CPS, smart grid CPS, biological and medical CPS
- Fault models and fault-tolerant techniques in CPS
- Hardware and software co-design methodologies for dependable CPS
- Embedded system design for dependable CPS
- Unsupervised, semi-supervised, and supervised learning for dependable CPS
- Cybersecurity, privacy, safety, availability, and reliability issues in CPS
- Dependable CPS applications (including robotics, autonomous vehicles, manufacturing, transportation, smart energy, smart civil infrastructure, and healthcare)

All original manuscripts that fit within the scope are welcome. Authors of papers presented at the 2019 IEEE International Conference on Cyber, Physical and Social Computing (CPSCom-2019) are especially encouraged to submit to this SI.

Submission Details:

General information for submitting papers to JSA can be found at https://www.journals.elsevier.com/journal-of-systems-architecture (please note the "Guide for Authors" link). Submissions to this Special Issue (SI) should be made using Elsevier's editorial system at the journal website (https://www.evise.com/profile/api/navigate/JSA), under the "Submit Your Paper" link). Please select the "SI:DCPS19" option as the type of the paper during the submission process.

JSA has adopted the Virtual Special Issues model to speed up the publication process, where an SI paper is published in a regular issue as soon as it is accepted. Therefore, authors are encouraged to submit papers early, and need not wait until the submission deadline.

Important Dates:

First Submission of manuscripts: 30 May 2019
Submission due: 30 July 2019
Final decision due: 30 Jan 2020

Guest Editors:

Junlong Zhou, PhD
School of Computer Science and Engineering
Nanjing University of Science and Technology, China
Email: jlzhou@njust.edu.cn

Xun Jiao, PhD
Department of Electrical and Computer Engineering
Villanova University, USA
Email: xun.jiao@villanova.edu

Qingling Zhao, PhD
School of Computer Science and Engineering
Nanjing University of Science and Technology, China
Email: ada_zhao@njust.edu.cn

Xiaokang Wang, PhD
Department of Computer Science
St. Francis Xavier University, Antigonish, Canada
Email: xkwang@stfx.ca

Shiyan Hu, Ph.D.
School of Computer Science and Electronic Engineering
University of Essex, UK
Email: shiyan.hu@essex.ac.uk