

Special Issue on Software and Hardware Co-Design for Sustainable Cyber-Physical Systems

Software: Practice and Experience (Wiley Press)

Call for Papers

Cyber-Physical Systems (CPS), featured by the systematic integration of computation, communication, and physical processes, are becoming increasingly important. Typical application domains of CPS include robotics and automation, transportation, manufacturing, civil infrastructure, healthcare, smart energy systems, etc. CPS are expected to play a major role in the development of next-generation smart energy systems. The design and management of CPS pose significant challenges in multiple aspects of system sustainability, including energy efficiency, natural resources preservation, and use of multiple energy sources as needed in computing devices and infrastructure. To enable the sustainable development of such systems, innovative technologies of software and hardware designs for green and energy-efficient CPS, such as reducing energy consumption of computing infrastructures, improving computational efficiency in smart energy systems, and exploring renewable energy resources to mitigate classical energy usages, need to be investigated.

This special issue aims to provide a platform for the researchers, academia and industry to present their novel solutions, applications, tools, software, hardware, and algorithms designed for addressing various sustainability challenges in CPS. Topics of interest for this special issue include, but are not limited to, the following topics:

- Sustainability modelling, evaluation, and tools for CPS
- Modelling, analysis, simulation, and verification of software for sustainable CPS
- Software engineering methodologies for sustainable CPS
- Architectural frameworks and design methodologies for sustainable CPS
- Hardware platforms for sustainable CPS
- Embedded systems design, including hardware/software co-design, for sustainable CPS
- Cloud, edge and fog computing for sustainable CPS
- Advanced and next generation communication technologies for sustainable CPS
- Data analytics and machine learning in sustainable CPS
- Algorithms and optimizations for sustainable CPS
- Resource managements in sustainable CPS
- Sustainable CPS with renewable energy integration
- Sustainable CPS applications

Important Dates

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