



Secure, Sustainable, and Trustworthy Cyber-Physical Systems as Embodiments of Digital Ecosystems

Theme: In our increasingly interconnected world, Cyber-Physical Systems (CPS) are playing an ever-expanding role across diverse domains such as the War on Terror, Communication, healthcare, transportation, energy management, and smart cities. The rapid evolution of CPS, driven by technologies like the Internet of Things (IoT) and 5G, presents unprecedented opportunities and complex challenges. This special collection focuses on three critical pillars in the realm of CPS: security, sustainability, and trustworthiness. We aim to explore innovative approaches to fortify the security of CPS, enhance their sustainability through intelligent resource management, and foster trust in these systems. These elements are vital for ensuring the continued success and reliability of CPS. The overarching theme centres on adapting and advancing CPS in our dynamic digital ecosystems. We invite contributions that unravel the intricacies of CPS, from securing data exchanges and safeguarding privacy to optimizing sustainability through smart energy utilization. Furthermore, we seek interdisciplinary insights that merge computer science principles with other scientific and engineering disciplines to achieve the essential goals of safety, security, and sustainability in CPS. This special collection serves as a comprehensive repository of state-of-the-art research, promoting collaboration and knowledge sharing among experts in the field. Together, we endeavour to shape the future of CPS, bridging the gap between technological advancements and their profound impacts on our interconnected world.

This special collection will focus on (but not limited to) the following topics:

- **Cyber-Physical Systems (CPS) as Embodiment of Digital Ecosystems (DES).** DES focuses on humanity and the environment and consideration of cyber information engineering and human space computing, and focuses on technology advancement including security, defence, trust, risks, and privacy of CPS as the embodiment of Digital Ecosystems.
- **Secure CPS Solutions for Sustainable Digital Ecosystems:** AI/ML, and quantum computing approaches for security solutions for CPS, including architectures, data privacy, data collection, data storage, and data processing including fault tolerance, self-healing mechanisms, and cyber and physical securities within CPS as embodiment of Digital Ecosystems.
- **Trustworthiness CPS Inspired by Blockchain technology with NOSTR protocols in industrial Applications:** The new protocol technology for people, partnership, prosperity, planet, and peace, from social media to industrial applications. The trust that is always needed and now has become available on the internet for CPS and DES.
- **Sustainable CPS Solutions:** Solutions to bolster the resilience of CPS and its impact on the sustainable transformation of humanity, society, and environment, including energy-efficient and environmentally sustainable CPS, such as CPS-powered green technologies, zero-waste, circular supply chain, green energy production, CPS powered decarbonization plants, and green environment.

Guest Editors

- Professor Elizabeth Chang, Griffith University, Gold Coast, Australia e.chang@griffith.edu.au
- Professor Christian Wagner, City University of Hong Kong, Hong Kong, isew@cityu.edu.hk
- Professor Stefanie Betz, Furtwangen University and LUT Germany, Stefanie.betz@hs-furtwangen.de
- Professor Marc-Oliver Pahl, IMT Atlantique, France, marc-oliver.pahl@imt-atlantique.fr

Timetable:

The deadline for manuscript submissions is 20 Feb 2024

Expected publication date 2024