

Call for Papers - SS 11

AI driven Safe, Secure, and Sustainable (I)-IoT/CPS

Organized and Chaired by

Muhammad Taimoor Khan¹, Dimitrios Serpanos², Howard Shrobe³, Kunio Uchiyama⁴

¹ University of Greenwich, UK

² ISI Athena, ECE, University of Patras, Greece

³ MIT CSAIL, USA

⁴ AI Chip Design Centre, Japan

FOCUS. Computing underpins emerging paradigms such as Society 5.0, Industry 5.0, Healthcare 5.0, and Agriculture 5.0, integrating cyber and physical processes that require advanced control and monitoring. These ecosystems connect people, devices, and systems using AI and machine learning, enabling new societal and industrial value. Cyber-physical systems (CPS), often built on IoT and industrial CPS, support critical infrastructures like healthcare, energy, and transportation, where failures or attacks can have severe consequences. Ensuring secure design is challenging due to system complexity, necessitating robust modelling, verification, and runtime monitoring. This work highlights AI, machine learning, and formal methods to develop secure, resilient, and trustworthy CPS and smart systems.

TOPICS. Topics of interest include, but are not limited to:

- ❖ Design-time and run-time safety, security, privacy and law in modern systems like X 5.0, Digital Twins, ICPS, and IIoT.
 - ❖ Data-driven (AI and Machine Learning or model)-based
 - ❖ Safety, security, privacy and law in cyber-physical systems (CPS), networks and communication
 - ❖ Prevention, detection and mitigation techniques for real-time protection against cyber, and non-cyber threats
 - ❖ Hardware design for safe, secure, privacy and law-aware RT-CPS
 - ❖ Vulnerability analysis of RT-CPS applications
 - ❖ Attack modeling and performance analysis of RT-CPS
 - ❖ Formal methods (FM)-based safety and security of critical systems at design-time and run-time
 - ❖ Safety, security and privacy of citizens in X 5.0 including manmade and natural threats, pandemics and disasters
 - ❖ Methodologies and tools for analysis, compliance and enforcement of law and regulations for safety, security and/or privacy
 - ❖ Methodologies and tools for compliance testing and standardization
 - ❖ AI tools for safe, secure, privacy, and law-aware RT-CPS
 - ❖ Case studies for AI or model driven digital law compliance and regulations in RT-CPS
 - ❖ Benchmarks for security, safety, privacy and or/law in RT-CPS
 - ❖ Challenges and confidence in modelling, analysis, safety, security, privacy and law of RT-CPS
- ❖ **AIM.** The Special Session aims to unite researchers and practitioners from academia and industry to share advances in security, safety, privacy, and law within Society 5.0. It focuses on IIoT and ICPS infrastructures, addressing design-time and run-time challenges using AI, machine learning, and formal methods.
- ❖ **CONFERENCE FORMAT.** The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations, as well as work-in-progress (WiP) and industry practice sessions.

AUTHOR'S SCHEDULE (2026)

Regular and special sessions papers

Submission deadline April 19
 Acceptance notification May 25
 Deadline for final manuscripts July 4

Work-in-progress/Industry practice papers

Submission deadline May 31
 Acceptance notification June 19
 Deadline for final manuscripts July 4

SS Program Committee

- ❖ Aris Lalos, ISI/ATHENA, Greece
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