

SPECIAL SESSION ON SAFETY AND SECURITY IN MODERN SYSTEM-ON-CHIP (SoC)

SMACD 2024: 2-5 JULY, VOLOS, GREECE

The 2024 edition of the International Conference on Synthesis, Modeling, Analysis and Simulation Methods, and Applications to Circuit Design (SMACD) will be held from 2 to 5 July in Volos, Greece. SMACD is a forum devoted to modeling, simulation, and synthesis for Analog, Mixed-signal, RF (AMS/RF), and multi-domain (nanoelectronics, biological, MEMS, optoelectronics, etc.) integrated circuits and systems, as well as, emerging technologies and applications. Open-source tools and methods for IC design and experiences with modeling, simulation, and synthesis techniques in diverse application areas are also welcomed. Objective technologies include CMOS, beyond CMOS, and More-than-Moore such as MEMs, power devices, sensors, passives, etc. SMACD is technically co-sponsored by IEEE, IEEE CEDA, and IEEE CASS, and its proceedings will be published in IEEE Xplore.

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New challenges require new technologies, and new technologies pose new challenges. This is particularly evident in recent years concerning Cyber-Physical Systems (CPS). Will we be able to cope with the growing complexity of these devices that are increasingly interconnected and capable of acting and manipulating the surrounding reality? The enabling factor for CPS today is the possibility of creating pervasive and interconnected systems through the contribution of increasingly efficient Systems on Chip (SoCs), open-source Instruction Set Architecture (ISA), and AI accelerators. The risk management of these systems involves two orthogonal fields: i) Safety, in terms of hardware error resilience, and ii) Security, in terms of hardware/software solutions to reduce the attack surface of malicious actions. This special session proposes an in-depth exploration of the intricate relationship between the increasing performance of SoCs, the integration of AI, and the adoption of open-source architectures in both the Safety and Security domains. Through carefully examining these dimensions, our objective is to highlight and tackle the multifaceted challenges associated with ensuring the safety and security of next-generation computing systems.

The topics of this special session include, but are not limited to:

- Ensuring the robustness and reliability of AI algorithms in safety-critical applications
- Open-Source ISA Security
- Next-Gen SoCs: Performance and Complexity Challenges
- Secure Boot and Trusted Execution Environments
- Case Studies and Practical Solutions
- Techniques to enhance the dependability and fault tolerance of AI hardware accelerators

IMPORTANT DATES

Spec. Ses. Paper Submission Deadline March 10th, 2024
 Author Notification March 26th, 2024
 Early Registration Deadline April 8th, 2024

TECHNICAL CO-SPONSORSHIP BY



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