Special Issue

Symmetry and Asymmetry in Hardware Security

Message from the Guest Editor

- Hardware security represents one of the most critical frontiers in modern cybersecurity, as the foundational trust in computing systems depends on secure hardware implementations. This Special Issue explores the concept of symmetry and asymmetry in hardware security, examining how symmetric and asymmetric cryptographic paradigms each present unique security challenges and opportunities when implemented in hardware. It also explores how vulnerabilities in the semiconductor supply chain and hardware root of trust impact the end goal of secure silicon and hardware.
- Modern computing systems face multifaceted security challenges at the hardware level, from power-based side-channel leakage that extracts cryptographic keys to hardware trojans embedded during manufacturing. As cryptographic workloads migrate to specialized hardware accelerators and processors incorporate trusted execution environments for sensitive operations, the need for comprehensive hardware security testing and validation has become paramount...

Guest Editor

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

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