Special Issue

Design Explorations and Novel Architectures on FPGA

Message from the Guest Editors

The remarkable evolution of FPGA technology—from simple logic devices to heterogeneous, billion-transistor systems-on-chip—has established FPGAs as a cornerstone of modern computing. Today's FPGAs not only support high-performance and ultra-low-power implementations but also provide unique opportunities to realize secure and real-time critical systems across domains ranging from edge AI to 5G infrastructure. This SI seeks to present new benchmarks for various applications in performance, power efficiency, security, or reliability, which thoughtfully exploit FPGA-specific capabilities such as dynamic reconfiguration and DSP/memory blocks. Topics:

- Reconfigurable hardware for cryptography
- Engineering of zero-knowledge proof systems
- Image/Signal processing algorithms and implementations
- FPGA/ASIC methodologies
- Hardware–Algorithm co-design
- Synthesis, physical design, timing closure, and PPA optimization
- System-level design for reconfigurable and adaptive computing
- High-performance FPGA implementations of compute-intensive algorithms
- Design studies that inform FPGA device architectures, or heterogeneous integration strategies
- Novel application domains enabled or significantly enhanced by FPGA

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

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