Special Issue

Emerging Computing Paradigms for Efficient Edge AI Acceleration

Message from the Guest Editors

The continuous advancements in AI algorithms, particularly deep learning models, have made their integration into modern applications essential. Many of these applications are required to simultaneously operate “at the edge” and process data in real time to avoid latency and bandwidth issues caused by exchanging data with centralized servers. With traditional computing and processing techniques pushing devices to their limits, new and emerging computing paradigms are being explored as solutions to balance the computational accuracy–hardware efficiency trade-off. Driven by the requirements of resource-constrained devices, this Special Issue aims to advance innovative circuits, architectures, systems and signal processing techniques that accelerate AI applications, with emphasis placed on approaches beyond the conventional computing ones.

- Analog computing;
- Approximate computing;
- Hybrid computing techniques;
- Hyperdimensional computing;
- In-memory and near-memory computing;
- Memristor-based devices and computing;
- Neuromorphic computing;
- Pruning techniques;
- Quantization techniques;
- Reservoir computing;
- Stochastic computing;
- Unconventional computing.

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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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