Special Issue

Towards Efficient and Reliable AI at the Edge

Message from the Guest Editor

The deployment of AI models on edge devices has gained significant traction due to its potential to enable real-time decision-making and alleviate the dependency on cloud-based services. However, this burgeoning field faces numerous challenges such as limited computational resources, power constraints, and unreliable network connectivity. Moreover, with critical infrastructure embracing AI-capable devices, ensuring reliability and security also becomes crucial.

- Efficient AI model design for edge devices: Model compression and quantization; Lightweight network architecture; Federated learning and collaborative approaches
- Optimization of edge device resources: Energy efficient computing and communication: Dynamic resource management: Edge-cloud collaboration
- Reliable operation of edge AI: Robustness against hardware failures; Fault tolerance and resilience
- Security and privacy in edge AI: Secure model deployment; Privacy preservation techniques; Defense against adversarial attacks
- Evaluation and benchmarking of edge AI: Real-world case studies and evaluation; Comparative analysis of edge AI frameworks; Evaluation frameworks for edge AI systems

Guest Editor

Dr. Palden Lama

Department of Computer Science, the University of Texas at San Antonio, San Antonio, TX 78249, USA

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Electronics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
electronics@mdpi.com

mdpi.com/journal/electronics

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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 guest-edited by leading experts in selected topics of interest.

Editor-in-Chief

Prof. Dr. Flavio Canavero
Department of Electronics and Telecommunications, Politecnico di Torino, 10129 Torino, Italy

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