Special Issue

Managing Data and Computation in the Edge–Cloud Continuum: Challenges and Innovations

Message from the Guest Editors

The proliferation of Internet of Things (IoT) devices has introduced significant challenges in efficiently distributing data and computation across the edge–cloud continuum. Traditional cloud-centric approaches struggle with latency, bandwidth constraints, and privacy concerns, necessitating intelligent edge solutions. However, deploying and managing machine learning (ML) models in this distributed environment remain a critical challenge. ML inference at the edge must balance computational efficiency, model accuracy, and adaptability to resource-constrained devices. Additionally, orchestrating workloads dynamically across heterogeneous edge and cloud nodes requires novel architectures and optimization strategies. This Special Issue aims to explore advancements in AI-driven edge computing for IoT scenarios, focusing on decentralized learning, adaptive offloading, and lightweight ML techniques to enhance performance, scalability, and real-time decision making in IoT systems.

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