

Special Issue

Quantum Machine Learning in Medical Image and Signal Processing

Message from the Guest Editor

This Special Issue aims to gather recent theoretical and applied research exploring the integration of quantum computing techniques with artificial intelligence methods for medical diagnosis, prognosis, and clinical decision support. The issue focuses on innovative methodologies combining quantum algorithms, variational quantum circuits, hybrid quantum–classical models, and quantum-inspired learning approaches with medical imaging modalities such as MRI, CT, PET, ultrasound, histopathology, and radiomics, as well as biomedical signals including ECG, EEG, EMG, and multimodal physiological data. Contributions addressing feature extraction, dimensionality reduction, classification, segmentation, clustering, explainability, optimization, and generative modeling are especially encouraged. The Special Issue also welcomes studies investigating practical implementations on noisy intermediate-scale quantum (NISQ) devices, reproducibility challenges, benchmarking against classical deep learning approaches, and the clinical translation of QML systems in medical diagnosis.

Guest Editor

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