Special Issue

Next-Generation Biosignal Engineering: AI-Driven Diagnostics, Prosthetic Interfaces and Multimodal Physiological Sensing

Message from the Guest Editors

Recent advances in AI, multimodal signal processing, and biosensor design are transforming biomedical engineering, enabling higher resolution and clinical relevance in physiological monitoring. This Special Issue highlights research at the intersection of computational biosignal analytics, wearable/implantable sensors, and intelligent diagnostic systems. We welcome contributions that integrate machine learning with advanced signal-processing techniques—such as sparse representation, adaptive feature extraction, and low-signal-density learning—to improve early disease detection, neuromusculoskeletal assessment, and next-generation prosthetics or rehabilitation interfaces. Translational studies, validation frameworks, and real-world deployment in clinical or public health settings are particularly encouraged. By bridging engineering, medicine, neuroscience, and data science, this issue aims to define the emerging landscape of AI-driven bioengineering and its potential to advance personalized diagnostics, population health monitoring, and patient-centered care.

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You are invited to contribute a research article or a comprehensive review for consideration and publication in *Bioengineering* (ISSN 2306-5354). *Bioengineering* is published in open access format – research articles, reviews and other contents are released on the Internet immediately after acceptance. The scientific community and the general public have unlimited and free access to the content as soon as it is published. *Bioengineering* provides an advanced forum for the science and technology of bioengineering. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

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