

Biomedical Computing and Health Engineering

Intelligent Computing, Biomedical Signal Processing, AI-Driven Diagnostics, and Digital Health Technologies

Special Session Chair



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About the Special Session

Biomedical Computing and Health Engineering is transforming modern healthcare by integrating **Artificial Intelligence (AI), Machine Learning (ML), Biomedical Signal Processing, Medical Imaging, Internet of Medical Things (IoMT), Wearable Technologies, Digital Health, and Computational Intelligence**. The convergence of advanced computing with biomedical engineering enables intelligent diagnosis, personalized healthcare, remote monitoring, clinical decision support, and precision medicine.

This special session aims to bring together researchers, academicians, healthcare professionals, clinicians, biomedical engineers, and industry experts to discuss recent advances, innovative methodologies, and real-world applications in biomedical computing and intelligent healthcare systems. The session welcomes both theoretical developments and practical implementations addressing emerging challenges in healthcare technologies.

Topics of Interest Include

Biomedical Computing

- Biomedical Computing and Computational Intelligence

- AI and Machine Learning in Healthcare
- Deep Learning for Biomedical Applications
- Explainable AI (XAI) in Healthcare
- Federated Learning for Medical Applications
- Edge AI for Healthcare Systems

Biomedical Signal Processing

- ECG, EEG, EMG and PPG Signal Processing
- Biomedical Signal Analysis and Interpretation
- Brain-Computer Interface (BCI)
- Sleep Disorder and Arrhythmia Detection
- Intelligent Biomedical Monitoring Systems
- Physiological Signal Analytics

Medical Imaging and Diagnostics

- Medical Image Analysis
- Computer Vision in Healthcare
- MRI, CT, PET, Ultrasound and X-ray Imaging
- Disease Detection using AI
- Radiomics and Intelligent Diagnosis
- Image Reconstruction and Enhancement

Digital Health Technologies

- Internet of Medical Things (IoMT)
- Wearable Healthcare Devices
- Remote Patient Monitoring
- Telemedicine and eHealth
- Mobile Health (mHealth)
- Smart Healthcare Systems

Health Data Analytics

- Electronic Health Records (EHR)
- Clinical Decision Support Systems
- Predictive Healthcare Analytics
- Personalized and Precision Medicine
- Healthcare Big Data Analytics
- Digital Twin Technologies in Healthcare

Emerging Biomedical Engineering

- Computational Biology and Bioinformatics
- Biomedical Sensors and Instrumentation
- Healthcare Cybersecurity
- Blockchain for Healthcare
- Human-Centered Healthcare Technologies
- Sustainable and Intelligent Healthcare Solutions

Target Audience

- Researchers
- Academicians
- Biomedical Engineers
- Healthcare Professionals
- Medical Practitioners
- AI Researchers
- Data Scientists
- Industry Professionals
- Research Scholars
- Postgraduate Students

Publication

All accepted and registered papers will be submitted for publication in the **IEEE Xplore® Digital Library**, subject to meeting IEEE quality requirements.

The conference proceedings are expected to be indexed in **Scopus** through IEEE Xplore.