

IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS

J-BHI Special Issue on “AI-Driven Multimodal Predictive Models for Personalized Healthcare and Remote Patient Monitoring”

The healthcare industry is undergoing a significant transformation with the advent of Artificial Intelligence (AI)-driven multimodal predictive models. These models leverage a variety of data sources, including clinical, physiological, and behavioral data, to provide comprehensive insights into patient health. As preventive and patient-centered approaches become more prevalent, the integration of AI into remote monitoring has proven invaluable for managing chronic diseases, offering real-time alerts, and improving patient outcomes through continuous observation and predictive analytics. This shift towards AI-enhanced healthcare is driven by the need for more personalized and efficient medical care, especially in the face of global health challenges such as pandemics and aging populations.

This special issue aims to highlight the personalized and predictive capabilities of AI in remote settings. The increasing demand for remote healthcare solutions underscores the importance of this research. We invite contributions from healthcare practitioners, biomedical engineers, AI researchers, and industry professionals to explore topics such as multimodal data fusion, predictive analytics, AI-enhanced monitoring systems, and the ethical considerations of AI in healthcare. This special issue seeks to drive innovation and address emerging challenges in personalized healthcare, ultimately contributing to better patient outcomes and more efficient healthcare delivery.

Topics of interest include, but are not limited to, the following:

- Multimodal data fusion techniques in AI for healthcare.
- Predictive analytics for chronic disease management.
- AI-enhanced remote patient monitoring systems.
- Personalized healthcare using AI-driven models.
- Applications of AI in wearable and sensor-based healthcare systems.
- Challenges in multimodal data integration and ethical considerations.
- Real-time AI-based diagnostic tools for home healthcare.
- Use of digital twins in personalized treatment and remote care.
- AI and telemedicine in post-acute care.
- Role of the Internet of Medical Things (IoMT) in enabling remote patient monitoring and personalized healthcare.
- Security and privacy frameworks for IoMT in healthcare.
- Big Data analytics in AI-driven healthcare systems.
- Blockchain and AI for secure data sharing in IoMT.
- AI in early detection and prevention using wearable IoMT devices.
- Ethical considerations of AI and IoMT in personalized healthcare, e.g., managing privacy, bias, and accountability challenges.

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