

IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS

J-BHI Special Issue on “Securing Tomorrow's Care: Navigating Privacy and Security Challenges in the Integration of AI Algorithms for Healthcare and Biomedical Applications”

Artificial intelligence (AI) is on the verge of reshaping the healthcare and biomedical sectors, presenting unparalleled prospects for improved patient care. As we embark on this transformational path, incorporating AI algorithms into healthcare systems presents intricate issues in terms of privacy and security. This special issue is dedicated to exploring the dynamic convergence of AI and healthcare, with the goal of understanding the complexities involved in ensuring future healthcare. In the rapidly growing field of AI-driven healthcare, the interdependence of technical advancement and patient welfare necessitates a thorough analysis of security dynamics. This special issue seeks contributions from scholars, researchers, and practitioners to further the discussion on privacy and security difficulties. Topics include protecting sensitive health data, resolving ethical concerns, and researching the secure integration of augmented reality. Through this collaborative effort, our goal is to fully understand the complexities of this assimilation while establishing a foundation for promoting the standards of security and privacy in the era of AI-enhanced healthcare and biological applications.

This special issue focuses specifically on AI's privacy and security aspects in healthcare. This SI aims to provide a comprehensive understanding of the challenges and opportunities presented by AI in healthcare, ultimately contributing to the advancement of patient-centered, secure, and ethical AI-driven healthcare solutions. We encourage original research, reviews, and case studies examining the security problems emerging from integrating AI algorithms into healthcare and biomedical applications. Submissions may include, but are not limited to:

- Privacy-preserving strategies in AI-enhanced healthcare interactions.
- Security implications for AI-driven medical training simulations.
- Securing patient data in the context of AI-integrated biomedical applications.
- Ethical dimensions of employing AI algorithms in healthcare environments.
- Augmented reality applications and their security implications in healthcare.
- Integration of healthcare the Internet of Things (IoT) with AI algorithms.
- Security challenges in AI-driven clinical environments.
- Ensuring informed consent and fair access to AI-enhanced healthcare services.

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Key Dates

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Final Decision: 01 May, 2025

