Artificial Intelligence for Health & Healthcare

Prof. Borhade G. L.

Professor, Electronics & Telecommunication Engineering Department

Amrutvahini Polytechnic, Sangamner, India

Abstract: *This paper presents a systematic review of the role of Artificial Intelligence (AI) in healthcare, highlighting its applications and challenges. AI technologies, including machine learning, natural language processing, and predictive analytics, are transforming healthcare through diagnostic assistance, treatment personalization, patient monitoring, optimization of healthcare operations, and public health. Despite the potential benefits, the integration of AI in healthcare faces significant challenges, such as data privacy and security concerns, ethical and legal issues, interoperability and integration difficulties, scalability and accessibility obstacles, and the intricacies of human-AI interaction. This review emphasizes the need for robust cybersecurity measures, ethical guidelines, clear legal frameworks, universal standards for interoperability, and equitable access to AI technologies. Recommendations for overcoming these challenges include fostering interdisciplinary collaboration, enhancing healthcare professional education, and promoting research and development. AI can realize its full potential in enhancing healthcare delivery and patient outcomes by addressing these challenges.*

Keywords: Artificial Intelligence, Healthcare, Diagnostic Assistance, Treatment Personalization, Data Privacy, Ethical Considerations