

Artificial Intelligence in Healthcare Services through Big Data Research

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ABSTRACT

The rapid advancement of digital systems in healthcare has generated massive volumes of data, creating new opportunities for innovation through Artificial Intelligence (AI). This conference lecture examines how AI, powered by Big Data research, is transforming health services by enhancing clinical decision-making, predicting disease risks, and improving patient outcomes. AI tools—such as machine learning, deep learning, and natural language processing—enable the analysis of complex health datasets from electronic health records, diagnostic images, wearable technologies, and population health systems. These technologies support early detection, personalized treatment, operational efficiency, and automated workflows. While the potential is significant, challenges remain related to data quality, interoperability, privacy, and ethical use. This lecture highlights current applications, emerging trends, and the need for robust governance frameworks to ensure responsible and equitable AI integration. Thus, AI-driven Big Data research is reshaping healthcare into a more proactive, efficient, and patient-centered system.

Keywords: Artificial Intelligence (AI), Big Data, Healthcare transformation