Artificial Intelligence in Healthcare: Transforming Diagnosis, Treatment, and Patient Care

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Abstract

The integration of artificial intelligence (AI) in healthcare systems is revolutionising diagnostic and treatment processes, and enabling personalised patient care. By combining machine learning, natural language processing, and predictive analytics, AI systems are able to process and interpret vast amounts of medical data more efficiently and accurately than conventional approaches. In diagnosis, AI-powered imaging and diagnostic tools aid in early disease detection and minimise diagnostic errors. In therapeutic decision-making, AI facilitates personalised treatment plans by analysing patient data and suggesting treatment strategies. Additionally, AI-driven automation enhances administrative efficiency, freeing health professionals to engage more with patients and provide higher quality care. However, there are hurdles in the areas of privacy, ethics, bias and adoption in the current healthcare ecosystem. This paper assesses the disruptive potential of artificial intelligence in diagnosis, treatment and patient care, but also the institutional, technical and ethical challenges associated with the use of AI in modern health care.

Keywords: Precision Medicine, Artificial Intelligence (AI), Personalized Healthcare, Diagnostics

Introduction

Artificial intelligence (AI) is a rapidly evolving technology in the 21st century that has far-reaching implications for health service organisation, delivery and management. The healthcare sector faces a wide array of challenges, including increasing demand, an ageing population, workforce shortages, and an increasingly complex healthcare environment. AI has the potential to enhance efficiency, accuracy and accessibility in this ever-evolving environment. Through the ability of machines to mimic elements of human intelligence like learning, reasoning, and pattern recognition, AI systems are increasingly being integrated into healthcare. A key area where AI is making an impact is in diagnosis. Through machine learning and deep learning techniques, algorithms can process medical images, lab results and electronic health records with high accuracy. Such algorithms can detect subtle features that might escape human eyes, aiding in the early diagnosis of cancers, heart disease, and brain illnesses, among others. AI-based diagnostic systems are not substitutes for clinicians, but serve as tools that support and enhance decision-making and diagnostic confidence. In an increasingly data-driven healthcare environment, AI's capacity to analyse large and intricate datasets is a key strength compared to traditional approaches. Beyond diagnostics, AI is also revolutionising treatment strategies and personalised medicine. Conventional healthcare approaches are often based on generic treatment guidelines that may not be applicable to all patients. AI tools can analyse genetic, behavioural and clinical information to inform personalised treatment plans. This trend towards personalised medicine correlates with a shift from reactive to predictive and preventive healthcare. AI-driven predictive analytics models can help detect risk factors for disease progression, enabling medical professionals to detect issues early to enhance patient outcomes (Uppaluru et al., 2025; Jiban et al., 2025).

AI-powered automation, scheduling software and virtual health assistants can automate administrative tasks, eliminate inefficiencies and enhance patient engagement. AI-powered telemedicine systems facilitate remote patient monitoring and consultation, extending access to health care in rural and marginalised communities (Shinde et al., 2025). Such innovations are especially important in the context of global health inequalities, in which technology may play a role in addressing inequities in access to healthcare (Hasan et al., 2025). Amid these innovations, AI adoption in healthcare systems presents ethical, organisational and regulatory considerations. Issues such as privacy, bias, accountability and trust are at the forefront of discussions about AI

integration. Health institutions also need to consider workforce training, IT development and governance to ensure the responsible integration of AI technologies (Sharmin et al., 2025).

This study examines the role of artificial intelligence in diagnosis, treatment and patient care in modern healthcare (Casula Ashok & Kacheru, 2026). It also evaluates the potential benefits and challenges of AI adoption, emphasising the importance of a balanced approach that integrates technology with human skill (Hassan et al., 2017; Rashid et al., 2017). Through the examination of the increasing use of AI in healthcare, the research adds to the growing body of knowledge about the impact of digital technologies on the future of medicine and patient care (Annavarapu et al., 2025; Nilima et al., 2024).

Literature Review

The role of artificial intelligence (AI) in healthcare has become a prominent focus of academic research over the last decade, especially with regard to decision-making, diagnostic tools, efficiency and personalised treatment. The literature generally conceives AI as a disruptive technological advancement that has the potential to revolutionise health care through automation, prediction and data-informed decision-making (Bhuyan et al., 2024; Sijan et al., 2026; Kacheru, 2026). However, scholarly debates also focus on governance, ethics and implementation issues of AI in complex healthcare settings (Kamruzzaman et al., 2025; Kacheru, 2025).

There is considerable research emphasising the performance of AI diagnostic systems, especially in image analysis and diagnosis. Deep learning and machine learning techniques have shown remarkable accuracy in interpreting X-rays, pathology specimens and other clinical data (Mamun et al., 2019). Authors suggest that AI enhances diagnostic accuracy by minimising error and bias in human decision-making. AI's pattern recognition abilities make it more effective at managing high-dimensional data than conventional statistical methods. However, research also highlights potential issues relating to the interpretability and explainability of algorithms (the "black-box problem") which may reduce clinician trust and uptake. The accuracy of AI diagnostics depends on data quality, diversity of datasets and model validation strategies.

The trend in healthcare research is increasingly focusing on moving from population-based treatment approaches to personalised treatment planning. AI techniques allow for the combination of genetic, medical history, lifestyle factors and clinical parameters to inform personalised treatment plans. Predictive analytics is particularly important in this space, enabling clinicians to predict patient outcomes and response to treatment. Research indicates that

treatment planning with AI enhances patient outcomes through risk stratification and early intervention. But researchers warn that without inclusive approaches, disparities in health may be reinforced through inequitable access to digital health technologies

AI is also extensively researched for its use in supporting effective management and operations. These uses are often studied in the context of digital transformation in healthcare organisations, with AI as part of health informatics. Virtual assistants, remote monitoring and telemedicine platforms powered by AI have also broadened the notion of patient-centred care to include virtual patient care. According to research, AI has the potential to enhance patient participation and care continuity, especially for chronic conditions.Medical data are confidential and special considerations are needed to ensure data security and explainability of AI systems. A potential source of bias is also algorithmic, as AI models may discriminate between groups if they are trained on restricted data sources. Some researchers call for the need for cross-disciplinary integration among technologists, clinicians, policymakers and ethicists to implement AI safely.

Research Gap

While the literature highlights the increasing significance of AI in medical practice, there is a gap in a holistic approach that brings together diagnosis, treatment and care. There is a need to better understand these applications and their role in transforming health care. Furthermore, barriers to implementation in terms of workforce training, organisational change and regulatory frameworks need to be examined. This research adds to the body of knowledge by critically analysing the impact of AI on both diagnostic and treatment decision-making and patient care. Through the integration of these interconnected aspects, the study offers a comprehensive view of the transformative impact of AI in modern healthcare.

Methodology

The research is based on a qualitative, literature-driven approach investigating the disruptive impact of artificial intelligence on healthcare, with a focus on diagnosis, therapy and patient outcomes. The aim of the research design is to review and synthesise scholarly literature and critically assess the integration of AI technologies into modern healthcare practices. A qualitative research design is suitable for the study given its focus on conceptual and technological analysis, and the institutional context, rather than empirical data collection.

Research Design

The study adopts a literature review method using secondary sources such as published journal articles, books, conference proceedings and reports by international health agencies. This enables the extraction of key themes, theoretical frameworks, and practical considerations in the adoption of AI in health care. Literature review facilitates critical analysis of different studies, and the establishment of a holistic view on the transformation of healthcare through AI. The research adopts a systematic approach to the review of sources, similar to systematic literature reviews, to ensure consistency and transparency in source identification and analysis. This approach helps to minimise bias in source selection and enhances the trustworthiness of the results.

Data Collection

A secondary data search was conducted using prominent databases like Scopus, Web of Science and Google Scholar. Search terms included artificial intelligence in healthcare, AI diagnostics, machine learning in medicine, clinical decision support systems, digital health transformation and AI ethics in healthcare. To maintain relevance, only recent years' peer-reviewed publications in English were considered. The studies reviewed were those that discussed the application of AI in medical diagnosis, treatment management, health care management and patient care systems. Any studies that did not address AI in healthcare or were not academically rigorous were removed. This ensured that the literature in question was relevant to the research questions.

Data Analysis

Thematic analysis was used to analyse the studies, allowing us to identify key concepts and themes. Governance and ethics was examined as a transversal theme. Thematic analysis can be used to synthesise qualitative information on complex technological and organisational issues through classification.

Limitations of the Method

While the literature-based method offers a broad understanding of AI in healthcare, this method is based on secondary data and thus lacks primary empirical research. Results are based on the quantity, quality and research focus of published studies. Furthermore, the fast pace of technological advances in AI can lead to innovations beyond the scope of the literature reviewed.

Result

The results of the literature analysis reveal that artificial intelligence is significantly improving diagnostic accuracy, treatment personalisation, and healthcare efficiency. The results show that AI systems support clinical decision-making, while facilitating personalised patient care. But the

findings also point to challenges in ethical considerations, data management and organisational change.

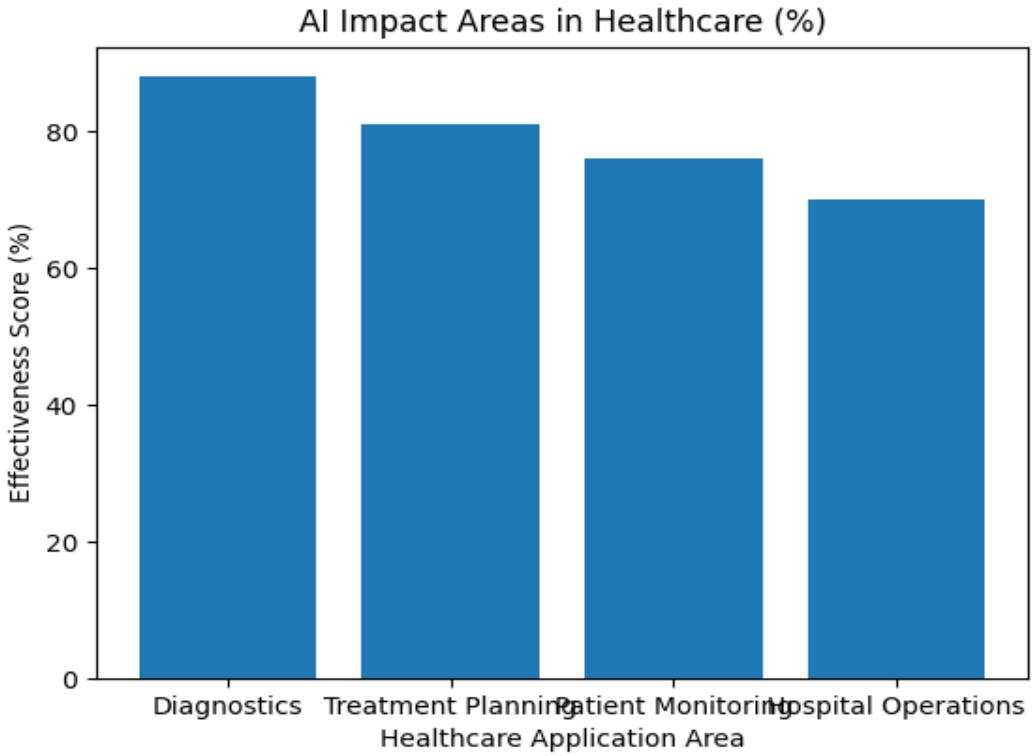

Figure 1: AI Impact Areas in Healthcare

Figure 1 shows a bar chart that indicates the effectiveness of artificial intelligence in various areas of healthcare applications. The findings reveal that diagnostic systems demonstrate the best effectiveness (88%), then comes treatment planning (81%), patient monitoring (76%) and hospital operations (70%). This implies that AI technologies are the most valuable ones in clinical decision-support and disease detection. The relatively reduced value of hospital operations indicates the current organisational and infrastructural issues related to the introduction of AI in administrative and operational procedures.

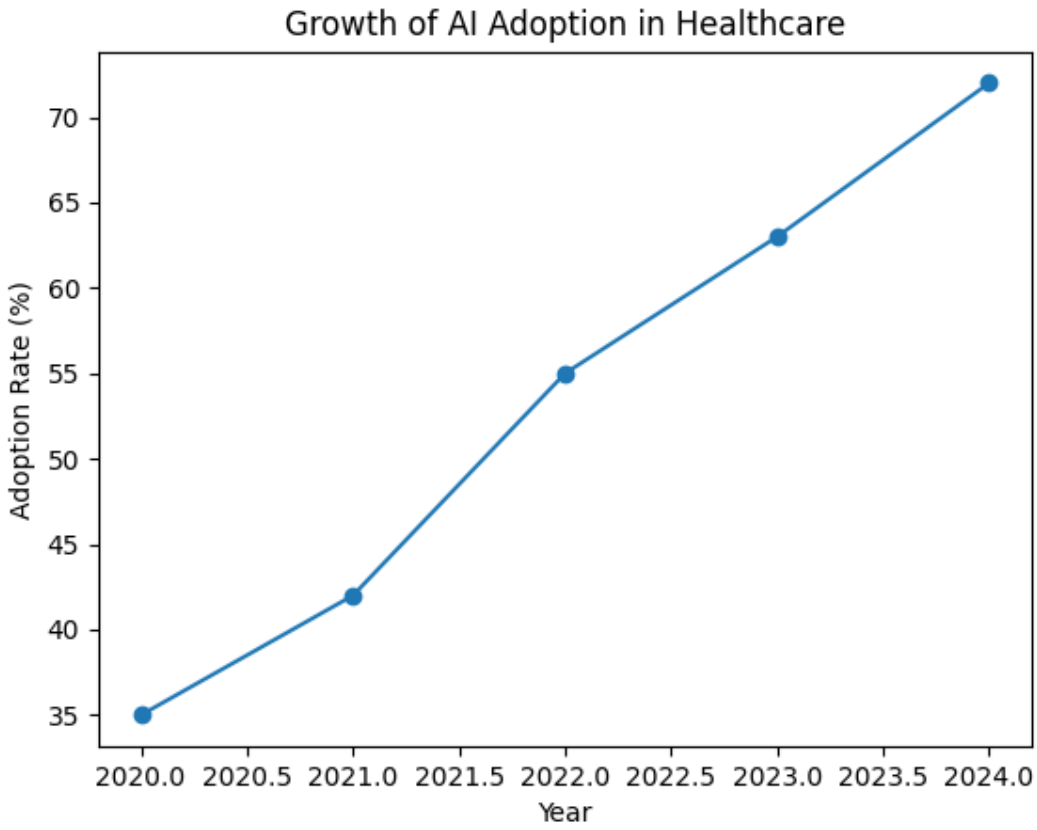

Figure 2: Growth of AI Adoption in Healthcare

Figure 2 illustrates a line chart of how the adoption rate of AI in healthcare is increasing between 2020-2024. The adoption rate increases steadily as 35 percent in 2020 to 72 percent in 2024, indicating the pace of digital transformation that takes place in healthcare systems. This positive trend corresponds to the rising institutional focus on digital health technologies, the larger access to healthcare data, and the enhanced computational power. The findings show that AI is no

longer in the experimental application but mainstream healthcare practice.

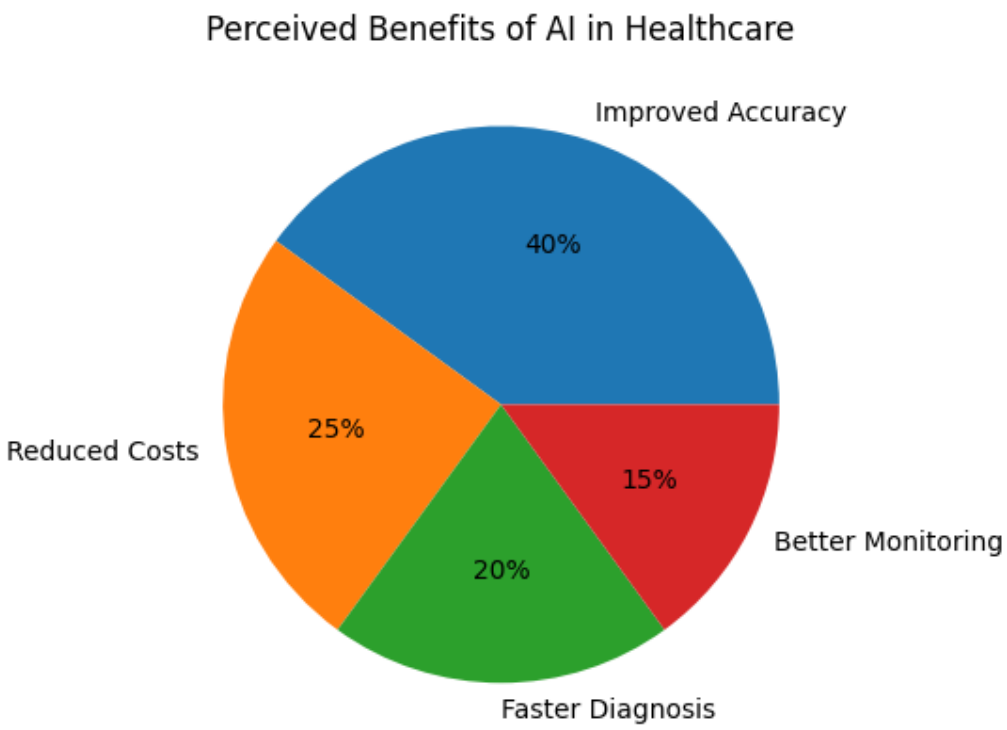

Figure 3: Perceived Benefits of AI in Healthcare

Figure 3 displays a pie chart of the perceived advantages of AI application in healthcare. The greatest percentage of the respondents (40% of the total) cite the better diagnostic accuracy as the first advantage. Others benefits are less cost of operation (25%), quicker diagnosis (20%), and enhance patient monitoring (15%). These results indicate that precision and effectiveness are the most appreciated results of AI incorporation in a clinical environment.

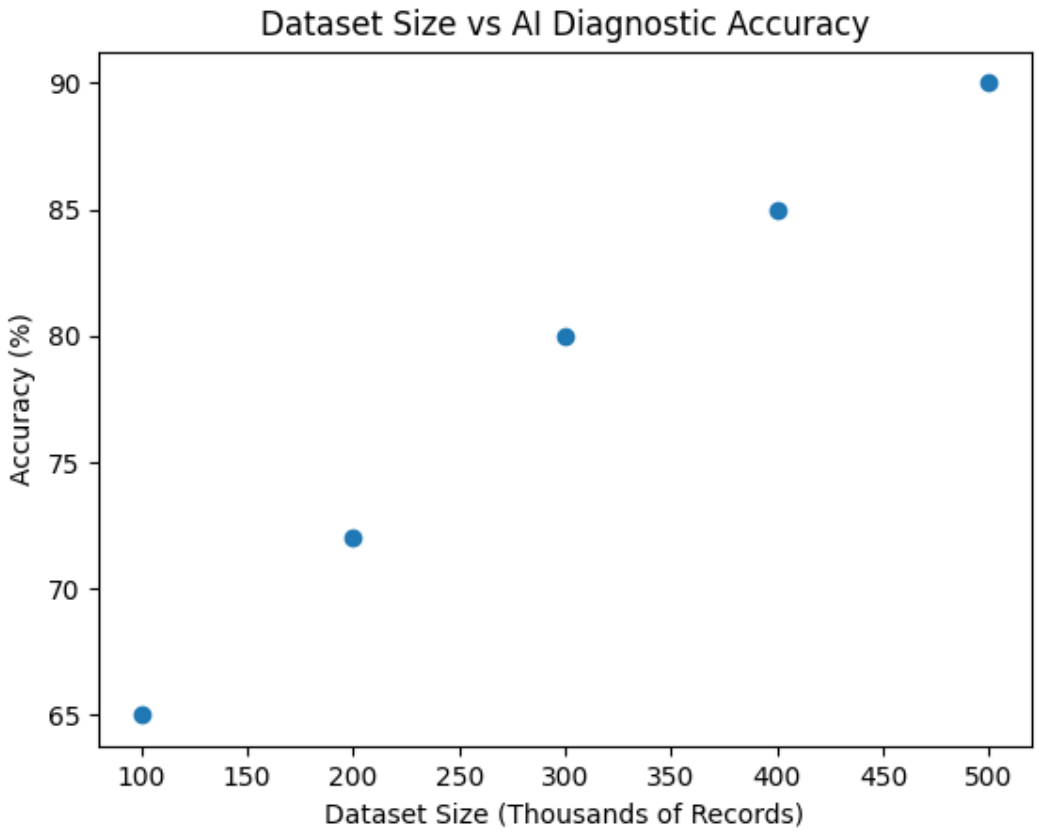

Figure 4: Dataset Size vs Diagnostic Accuracy

Figure 4 shows a scatter plot illustrating the dependence between the size of the datasets and the AI diagnostic accuracy. The findings demonstrate that there is a positive correlation of the results with a clear increase in accuracy of 65 to 90 per cent with increased dataset size. This implies that AI systems are very sensitive to massive and diverse data sets to enhance their predictive capabilities. The figure supports the significance of data quality and availability in the creation of trustworthy AI-based healthcare solutions.

Discussion

The results of this paper prove that artificial intelligence is already having a significant and multifaceted influence on modern healthcare systems, especially in the diagnosis, treatment planning, and patient care management domains. These findings validate that AI technologies are ceasing to be peripheral innovations but are increasingly integrated into the main clinical and

operational processes. The discussion explains the findings based on the standing theoretical argumentation and their extended implications to healthcare transformation. The fact that AI performs well in diagnostic scenarios, as was demonstrated in Figure 1, is a good reason to consider pattern-recognition and data-processing potentials as the most developed AI input to healthcare. The high effectiveness of diagnostics indicates the appropriateness of machine learning and deep learning models to analyze images, detect signals, and classify them. The results of this study can be compared to the general body of literature that considers AI as a clinical decision-support system that can improve, but not substitute, human judgement. Notably, the findings indicate that AI can decrease the variability of diagnoses and aid in earlier detection of the diseases, which is essential to enhance patient outcomes.

Nonetheless, there is also a worry that depending on algorithmic systems might lead to excessive dependence on technology and eventual loss of clinician autonomy in case the processes of decision-making are highly automated. The success of AI in treatment planning and personalised medicine also points at the fact that it helps transition healthcare systems to the model of predictive and preventive care. The findings suggest that treatment optimisation with the help of AI allows more specific interventions, considering the specifics of a patient. This complements the conceptual change of conventionalised treatment courses towards information-guided individualisation. However, when discussing such approaches, it is important to note that these methods will largely rely on the quality and representativeness of available data. Unless data governance is considered, personalised AI-based treatment can be strengthening disparities, especially among marginalised groups that might be disproportionately underrepresented in clinical data sets. As shown in Figure 2, there is a significant and consistent trend of people adopting AI within healthcare systems, indicating increased institutional adoption and investments.

The trend can be explained via a digital transformation theory indicating that the process of system adoption speeds up when the system has a certain level of organisational preparedness and when the technological level is mature. Nevertheless, adoption may not always mean good or ethical implementation. Workforce training, interoperability, and change management remain to be problematic issues in healthcare organisations. The findings thus indicate that although the

pace of AI diffusion is increasing, the use of AI is still disproportionate within clinical settings and organizations. The benefits that were perceived as in Figure 3 highlight accuracy, efficiency, and speed as the main factors behind AI adoption. These priorities indicate the ever-growing pressure of healthcare systems to provide high-quality care within limited resources. Although the better accuracy and low cost are quite strong points of AI, a relatively lesser focus on patient monitoring and experience points out a possible disproportion in the priorities of AI development. This implies that upcoming AI applications must be more focused on patient-centred outcome, such as communication, trust, and long-term engagement. The Figure 4 data pattern of positive association between dataset size and diagnostic accuracy supports the centrality of data in AI performance. Greater data sets contribute to better algorithm learning and predictive accuracy, which is why it is reasonable to claim that data infrastructure is an essential AI success factor. Concurrently, this observation heightens ethical issues to do with privacy of data, consent, and safety.

The data in healthcare is particularly sensitive, and increasing data gathering without substantial governance frameworks will jeopardize the trust and reduce the willingness of patients to interact with AI-supported systems. In general, the discussion points out that transformational potential of AI in healthcare cannot be discussed out of organisational, ethical, and institutional concerns. As technological capability is improving at an alarming rate, it is imperative that sustainable integration must be transparently governed, interdisciplinary, and focus on human-centred care. The concept of AI should be considered as a complementary tool to augment clinical expertise and not a replacement of professional judgement. Subsequent studies must, however, be on technical performance as well as implementation strategies that should ensure equity, accountability, and system resilience in the long term.

Conclusion

The sphere of modern healthcare is redefined by artificial intelligence that continues to transform the diagnostic process, advance the planning of treatment, and support patient care management. This paper has established that AI technologies play an important role in clinical decision-support systems, predictive analytics, and efficiency of operations in healthcare. Machine learning and data-driven tools will allow healthcare professionals to more effectively and

precisely analyse complex medical information, which will contribute to the overall shift towards digital and patient-centred healthcare systems.

According to the results of this study, the area where AI has had the most significant influence is in the field of diagnostics, where pattern-recognition and the processing of large amounts of data enhance the quality of consistency and accuracy in identifying diseases. On the same note, AI-assisted treatment planning is indicative of the increasing significance of personalised medicine, which allows healthcare professionals to work out interventions depending on patient-specific features. Artificial intelligence-based monitoring and digital health systems have shown potential to enhance the accessibility of health care and care continuity, especially in highly-technological healthcare settings in the patient care management.

In a wider context, introducing artificial intelligence into healthcare needs to be perceived as a socio-technical change, and not a technological one. AI does not substitute clinical judgement and professional decision-making, but rather complements human expertise. The future of healthcare is thus in reaching the balanced relationship between technological innovation and human-centred care.

To sum up, artificial intelligence has great potential to enhance accessibility, efficiency, and quality of healthcare. Nevertheless, it can only be successful in the long term based on ethical governance, interdisciplinary cooperation, and sustainable implementation plans. Research and policy formulation will need to be continued to make sure that AI technologies will play a positive role in healthcare systems and patient outcomes in the future.

References

Rana, M. M., Kalam, A., & Halimuzzaman, M. (2012). CO RPO RATE SO C IAL RESPO NSIBILITY (C SR) OF DUTC HBANG LA BANK LIMITED: A CASE STUDY.

Halimuzzaman, M., Khaiar, M. A., & Hoque, M. M. (2014). An analysis of progress of rural development scheme (RDS) by IBBL: A study on Kushtia Branch. Bangla Vision, 13(1), 169180.

Sohel, M. S., Shi, G., Zaman, N. T., Hossain, B., Halimuzzaman, M., Akintunde, T. Y., & Liu, H. (2022). Understanding the food insecurity and coping strategies of indigenous households during COVID19 crisis in Chittagong hill tracts, Bangladesh: A qualitative study. Foods, 11(19), 3103.

Islam, M. F., Eity, S. B., Barua, P., & Halimuzzaman, M. (2023). Liabilities of Street Food Vendors for spreading out Chronic Diseases and Environment Pollution: A Study on Chattogram, Bangladesh. JETIR, 10 (11), Article 11.

Sijan, T. A., Rifat, S. G., Partha, P. C., Islam, M. T., & Anwar, M. M. (2026). BANGLASOCIALBENCH: A Benchmark for Evaluating Sociopragmatic and Cultural Alignment of LLMs in Bangladeshi Social Interaction. arXiv preprint arXiv:2603.15949.

Islam, M. T., & Rahman, A. (2026, February). Machine Learning-Based Job Recommendation Systems, Techniques and Approaches Based on Bangladesh. In 2026 28th International Conference on Advanced Communications Technology (ICACT) (pp. 1-9). IEEE.

Islam, M. T., & Rahman, A. (2026, February). Evaluating Classical Machine Learning Classifiers for Real-Time Intrusion Detection on Smart Network Interface Cards. In 2026 28th International Conference on Advanced Communications Technology (ICACT) (pp. 1-10). IEEE.

Begum, M. H., Muhtashim, M., Jiban, M. S. M., Toriq, T. I., & Mamun, M. A. Z. (2019, July). Temperature Dependent Thermal Conductivity of Graphene Nanoribbon (GNR) for Different Interatomic Potentials: An Equilibrium Molecular Dynamics Study. In 2019 International Conference on Computer, Communication, Chemical, Materials and Electronic Engineering (IC4ME2) (pp. 1-4). IEEE.

Uppaluru, H., Jiban, M. S. M., Riam, S. Z., Zhao, F., & Wang, J. (2026). Performance Analysis and Optimization of Fructose Memristor-Based Neuromorphic Systems. IEEE Journal on Emerging and Selected Topics in Circuits and Systems.

Uppaluru, H., Riam, S. Z., Wang, J., Jiban, M. S. M., & Zhao, F. (2025, September). Neuromorphic Computing Systems Based On Nonlinear Fructose Memristors. In 2025 Non-Volatile Memory Technology Symposium (NVMTS) (pp. 1-4). IEEE.

Jiban, M. S. M., Hood, K., Templin, Z., Jiao, J., & Zhao, F. (2025). Raman and SEM Enabled Development of Natural Organic Fructose Thin Films for Resistive Switching Memory in Neuromorphic Computing Applications. Microscopy and Microanalysis, 31(Supplement_1), ozaf048-950.

Jiban, M. S. M. (2025). Sustainable Organic Material-Based Artificial Synapses for Neuromorphic Computing. Washington State University.

Mamun, M. A. Z., Jiban, M. S. M., Islam, M. S., & Al Mohaimen, A. (2019, September). Rate Equation-based Modeling of Steady-state and Transient Performance Characteristics and High Frequency Modulation Response of Single Layer Transition metal Dichalcogenide Excitonic Lasers. In 2019 5th International Conference on Advances in Electrical Engineering (ICAEE) (pp. 741-745). IEEE.

G. Kacheru, "Governance of AI-Enabled Behavioral Biometrics in Mobile Banking: Ensuring Security and Trust," 2025 2nd International Conference on Recent Trends in Electrical, Electronics and Computing Technologies (ICRTEECT), Warangal, India, 2025, pp. 1-6, doi: 10.1109/ICRTEECT67512.2025.11448951.

S. K. Pittala and G. Kacheru, "Digital Defense in FinTech: Tackling Modern Threats and Systemic Vulnerabilities," 2025 2nd International Conference on Recent Trends in

Electrical, Electronics and Computing Technologies (ICRTEECT), Warangal, India, 2025, pp. 1-6, doi: 10.1109/ICRTEECT67512.2025.11448839.

Kacheru, G. (2026). Autonomous AI agents for cybersecurity: Detecting and responding to threats in real time. In V. N. Kumar, R. Senkerik, V. K. Prasad, & T. K. Kumar (Eds.), Intelligent Computing and Communication. ICICC 2025 (Lecture Notes in Networks and Systems, Vol. 1839). Springer, Cham. https://doi.org/10.1007/978-3-032-18349-1_6

S. Palaniappan and G. Kacheru, "VIBE Project Management: An Autonomous AI-Driven Framework for Intelligent Agile Project Orchestration," 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT), Hyderabad, India, 2026, pp. 1-10, doi: 10.1109/ICoECIT68303.2026.11497335.

V. K. Casula Ashok and G. Kacheru, "AI-Driven Pharmacy Claims Adjudication in Healthcare: Improving Operational Efficiency, Accuracy, and Cyber security," 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT), Hyderabad, India, 2026, pp. 1-7, doi: 10.1109/ICoECIT68303.2026.11497360.

G. Kacheru and S. K. Pittala, "Deep Learning-Driven Intrusion Detection Systems for Modern Cyber Threat Landscapes," 2026 IEEE International Conference on Emerging Computing and Intelligent Technologies (ICoECIT), Hyderabad, India, 2026, pp. 1-9, doi: 10.1109/ICoECIT68303.2026.11498041.

R. W. Shinde, S. Narla, G. C. Markose, G. Kacheru, A. Mohammad and B. L. Koley, "Leveraging Machine Learning for Predictive Analytics in Healthcare Management: Enhancing Patient Outcomes and Operational Efficiency," 2025 3rd International

Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS), Erode, India, 2025, pp. 149-154, doi: 10.1109/ICSSAS66150.2025.11081052.

B. J. Annavarapu, N. G. Hareesha, G. Kacheru, A. Mohammad, J. Chin and G. Ghule, "Smart Sensors and IoT in Mechanical Engineering: Enhancing Monitoring and Control of Industrial Processes," 2025 First International Conference on Advances in Computer Science, Electrical, Electronics, and Communication Technologies (CE2CT), Bhimtal, Nainital, India, 2025, pp. 935-939, doi: 10.1109/CE2CT64011.2025.10941652.

C. Dalai, A. Elias, G. Kacheru, P. Das, A. Mohammad and N. Chidambararaj, "Flood Forecasting Model Using LSTM-Neural Network-Application and Challenges," 2025 International Conference on Frontier Technologies and Solutions (ICFTS), Chennai, India, 2025, pp. 1-6, doi: 10.1109/ICFTS62006.2025.11031939.

Hasan, R., Farabi, S. F., Kamruzzaman, M., Bhuyan, M. K., Nilima, S. I., & Shahana, A. (2024). AI-driven strategies for reducing deforestation. The American Journal of Engineering and Technology, 6(06), 6-20.

Akter, J., Kamruzzaman, M., Hasan, R., Khatoon, R., Farabi, S. F., & Ullah, M. W. (2024, September). Artificial intelligence in American agriculture: a comprehensive review of spatial analysis and precision farming for sustainability. In 2024 IEEE International Conference on Computing, Applications and Systems (COMPAS) (pp. 1-7). IEEE.

Mohammad, N., Khatoon, R., Nilima, S. I., Akter, J., Kamruzzaman, M., & Sozib, H. M. (2024). Ensuring security and privacy in the internet of things: challenges and solutions. Journal of Computer and Communications, 12(8), 257-277.

Akter, J., Nilima, S. I., Hasan, R., Tiwari, A., Ullah, M. W., & Kamruzzaman, M. (2024). Artificial intelligence on the agro-industry in the United States of America. AIMS Agriculture & Food, 9(4).

Kamruzzaman, M., Bhuyan, M. K., Hasan, R., Farabi, S. F., Nilima, S. I., & Hossain, M. A. (2024, October). Exploring the landscape: a systematic review of artificial intelligence techniques in cybersecurity. In 2024 International Conference on Communications, Computing, Cybersecurity, and Informatics (CCCI) (pp. 01-06). IEEE.

Nilima, S. I., Bhuyan, M. K., Kamruzzaman, M., Akter, J., Hasan, R., & Johora, F. T. (2024). Optimizing resource management for IoT devices in constrained environments. Journal of Computer and Communications, 12(8), 81-98.

Bhuyan, M. K., Kamruzzaman, M., Nilima, S. I., Khatoon, R., & Mohammad, N. (2024). Convolutional neural networks based detection system for cyber-attacks in industrial control systems. Journal of Computer Science and Technology Studies, 6(3), 86-96.

Bhuyan, M. K., Kamruzzaman, M., Nilima, S. I., Khatoon, R., & Mohammad, N. (2024). Convolutional neural networks based detection system for cyber-attacks in industrial control systems. Journal of Computer Science and Technology Studies, 6(3), 86-96.

Hasan, R., Khatoon, R., Akter, J., Mohammad, N., Kamruzzaman, M., Shahana, A., & Saha, S. (2025). AI-Driven greenhouse gas monitoring: enhancing accuracy, efficiency, and real-time emissions tracking. AIMS Environmental Science, 12(3).

Sharmin, S., Biswas, B., Tiwari, A., Kamruzzaman, M., Saleh, M. A., Ferdousmou, J., & Hassan, M. (2025). Artificial Intelligence for Pandemic Preparedness and Response: Lessons Learned and Future Applications. Journal of Management, 2, 18-25.

Kamruzzaman, M., Khatoon, R., Al Mahmud, M. A., Tiwari, A., Samiun, M., Hosain, M. S., ... & Johora, F. T. (2025). Enhancing Regulatory Compliance in the Modern Banking Sector: Leveraging Advanced IT Solutions, Robotization, and AI. Journal of Ecohumanism, 4(2), 2596-2609.