



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 13 **Issue:** IX **Month of publication:** September 2025

DOI: <https://doi.org/10.22214/ijraset.2025.74182>

www.ijraset.com

Call: ☎ 08813907089

E-mail ID: ijraset@gmail.com

A Review of Significance of AI in Healthcare: Innovations, Challenges and Future Prospects

Dr. Goldi Soni¹, Manashvi Tripathi², Koyana Dekate³

¹Assistant Professor, ^{2,3}B.Tech CSE, Amity University Chhattisgarh

Abstract: Prior to 2010, the main focus of healthcare technology businesses was on advancements brought forth by medical devices that offered evidence-based and historic treatment. But in recent years, artificial intelligence (AI) has become a disruptive force in a number of industries, with the healthcare sector being one of the most exciting and quickly developing. AI is transforming the way doctors provide care, from improving diagnostic precision to customizing treatment regimens and expediting administrative duties. Patient outcomes and operational efficiency have been greatly enhanced by the use of AI-driven technologies, including robots, machine learning, and natural language processing. But these developments also bring with them issues with data privacy, ethics, and the requirement for regulatory frameworks. This essay examines the development of AI in healthcare, as well as its present uses, difficulties, and possibilities.

Keywords: Artificial Intelligence (AI), Machine Learning, Predictive Analytics, Precision Medicine, Deep Learning, Surgery.

I. INTRODUCTION

Artificial intelligence (AI) is transforming healthcare by allowing machines to undertake tasks typically associated with human intelligence, such as reasoning, learning, adaptation, sensory perception, and communication. AI systems, which usually consist of both software and hardware, depend on intricate algorithms, with artificial neural networks (ANNs) forming the basis for numerous AI-driven solutions. These networks, modeled after the human brain, support deep learning processes that improve the precision and effectiveness of healthcare applications. AI includes machine learning, natural language processing, and robotics, providing a wide array of opportunities for innovation in the knowledge-intensive healthcare sector. A significant challenge facing contemporary healthcare is the workforce crisis, fueled by a global shortage of doctors, physician burnout, and a growing need for chronic care management.

AI-powered solutions can tackle these challenges by streamlining the allocation of hospital resources, enhancing the management of patient flow, and improving the overall operational efficiency of healthcare facilities. However, despite the continuous progress of AI applications, patient engagement remains a vital element for their effective implementation. The limited studies that have explored patient viewpoints have mainly concentrated on a small selection of AI tools, which restricts their effectiveness in forecasting patient acceptance of more diverse AI applications. Involving patients in the development is essential to ensure its ethical implementation and to build trust in AI-enabled healthcare solutions.

This research paper explores the function of AI in contemporary healthcare, assessing its uses in diagnostics, treatment, hospital administration, and mental health evaluations. Furthermore, it examines AI-driven strategies for enhancing patient care and resource distribution while confronting issues such as data privacy, ethical dilemmas, and the incorporation into existing healthcare systems. Through a comprehensive literature review and analysis of real-world applications, this study seeks to offer insights into how AI can improve patient treatment, boost disease prevention efforts, and revolutionize healthcare delivery in the future.

II. LITERATURE REVIEW

The article AI in Healthcare: A Narrative Review by Väänänen et al. (2021). The use of AI in healthcare is examined in this paper, with particular attention paid to its uses in virtual assistants, surgery, diagnostics, and clinical workflows. It highlights how AI might improve patient outcomes while cutting expenses. The study concludes that AI will play a key role in future healthcare breakthroughs after discussing issues like data quality, ethical considerations, and legal constraints.

Artificial Intelligence in Healthcare: Past, Present, and Future by Jiang et al. (2017). The authors examine the development of AI in healthcare, emphasizing its application to the analysis of both structured and unstructured data. A thorough case study on stroke prediction is included, along with an examination of AI applications in cardiology, neurology, and oncology. The study highlights issues with data privacy and practical application while outlining the benefits of AI, such as better diagnoses and fewer errors.

Meskó and associates (2018) Will Artificial Intelligence Solve the Human Resource Crisis in Healthcare? By automating administrative and diagnostic chores, AI has the ability to alleviate the scarcity of healthcare workers, according to the report. The authors contend that while AI will support healthcare workers rather than replace them, ethical and training issues must be resolved to guarantee successful adoption.

Kumar et al. (2023) Evaluation of 5G Techniques Affecting the Deployment of Smart Hospital Infrastructure With an emphasis on enhancing patient care, cutting medical expenses, and facilitating remote healthcare services, The role of 5G, AI, and IoT in smart hospitals is examined in this paper. It draws attention to issues including spectrum access, power efficiency, and network latency. The study highlights how using cutting-edge technologies might improve patient outcomes and hospital efficiency.

Paucar et al.'s article Artificial Intelligence as an Innovation Tool in Hospital Management (2025). This study examines the use of AI in hospital administration, encompassing telemedicine, resource allocation, and electronic medical records. The writers cover ethical issues including data protection and employee resistance while talking about how AI can improve health care and operational efficiency. According to the study, AI has the potential to make a substantial contribution to hospital management that is sustainable and in line with the Sustainable Development Goals (SDGs).

Identifying Potentials for AI-based Process Support in Emergency Departments by Bornha et al. (2024). The study looks at how demand forecasting, decision support technologies, and process automation can help alleviate the overcrowding in emergency rooms. AI is suggested as a way to enhance workflow effectiveness, data management, and resource allocation. The study emphasizes the necessity of more testing of AI applications in practical contexts.

A Governance Model for AI in Healthcare by Reddy et al. (2019). In order to handle ethical and legal issues pertaining to AI in healthcare, this paper suggests a governance paradigm. It draws attention to important problems such algorithmic bias, opaqueness, patient data privacy, and liability concerns. The authors stress that building confidence in AI systems is essential to their effective deployment.

III. COMPARISON OF PAST PUBLISHED RESEARCH PAPER

The selection of these five research papers was made deliberately to capture a holistic perspective on the integration of Artificial Intelligence in healthcare. Each paper addresses a distinct yet complementary dimension of this field. The first study on Explainable AI in Healthcare highlights the importance of transparency and interpretability in predictive models, which is essential for building trust among clinicians and patients. The second paper provides a governance and ethics framework, addressing the moral and legal complexities that accompany AI adoption in healthcare. The third focuses on healthcare startups, illustrating how AI-driven business models can accelerate innovation and add entrepreneurial value to the industry. The fourth paper examines workforce challenges, offering insights into how AI can mitigate human resource shortages while also exploring the ethical ramifications. Finally, the fifth paper provides a broad overview of AI applications and challenges, serving as a foundational reference that situates the field's current opportunities and limitations. Together, these papers were selected because they not only represent diverse focus areas ranging from technical interpretability to governance, entrepreneurship, workforce management, and broad applications—but also collectively provide a comprehensive understanding of the critical issues and innovations shaping AI in healthcare today.

Table-1. Comparison of past published Research Paper

S.no	Title	Author(s)	Focus Area	Key Findings	Year
1.	"Explainable AI meets Healthcare: A Study on Heart Disease Dataset"	Devam Dave, Het Naik, Smiti Singhal, Pankesh Patel	Explainable AI in Healthcare	Evaluation of interpretability methods for predicting heart disease, such as LIME and SHAP	2020
2.	"A governance model for the application of AI in healthcare"	Sandeep Reddy, Sonia Allan, Simon Coghlan, Paul Cooper	Governance and Ethics of AI in Healthcare	offers a framework for governance to handle moral and legal concerns in AI applications for healthcare.	2019

3.	"Artificial Intelligence as a Growth Engine for Health Care Startups: Emerging Business Models"	Massimo Garbuio, Nidhida Lin	AI in Health Startups	Examining AI-powered business models and how they add value for healthcare entrepreneurs	2019
4.	"Will artificial intelligence solve the human resource crisis in healthcare?"	Bertalan Meskó, Gergely Hetényi, Zsuzsanna Györfy	Healthcare Workforce Management with AI	examines how AI can help with the healthcare industry's labor problem while talking about the ethical ramifications.	2018
5.	"Artificial Intelligence in Healthcare: Applications and Challenges"	Various Authors	AI Applications in Healthcare	An overview of AI applications such as administrative efficiency, diagnosis, and therapy suggestions	Not Specified

IV. THEORETICAL AND ANALYTICAL ANALYSIS

The incorporation of Artificial Intelligence (AI) into the healthcare field is not a new occurrence but rather the result of many years of technological progress. Initial applications trace back to the 1970s when expert systems such as MYCIN were created to aid in diagnosing bacterial infections. Over time, AI has progressed from rule-based expert systems to sophisticated deep learning algorithms, transforming diagnostics, treatment planning, and operational efficiency within healthcare. The escalating need for AI-enhanced solutions arises from various urgent issues confronting the healthcare sector today.

As life expectancy rises and the number of individuals over 65 is anticipated to double by 2030, healthcare systems are increasingly burdened by a rise in chronic diseases. Furthermore, the global healthcare workforce crisis is intensifying, with one in three physicians over 55, and a considerable percentage expected to retire in the next ten years. The younger generation of healthcare providers places a high value on work-life balance and regulated working hours, which could worsen physician shortfalls. Without a skilled workforce, delivering quality care becomes a formidable challenge, making AI an essential resource to enhance efficiency and assist medical professionals. In the last three years, significant research has been undertaken regarding how entrepreneurs in health tech discover and seize business opportunities via AI-fueled solutions. Numerous academic and industry investigations have examined AI's influence in digital health, with thorough assessments of three AI-enabled healthcare startups. The first utilizes AI to establish a marketplace that links providers and patients, enhancing accessibility and efficiency in healthcare offerings. The second functions within the digital health realm, devising innovative solutions for remote monitoring and tailored care. The third concentrates on the detection of sleep disorders through a smart pillow solution, illustrating AI's potential in preventive healthcare. In addition to patient care, AI is revolutionizing the conventional drug discovery process, which is infamously lengthy and costly, often taking more than a decade and billions of dollars to introduce a new drug to the market. AI-optimized models are considerably decreasing both the expense and duration required for drug discovery by scrutinizing extensive datasets and pinpointing potential compounds more rapidly and accurately.

The question persists: will AI enable physicians or supplant them? Instead of displacing medical practitioners, AI aims to enhance their abilities by alleviating administrative workloads, refining diagnostics, and optimizing patient management.

As AI continues to progress, its significance in healthcare will grow increasingly vital, delivering scalable and innovative answers to fulfill the expanding needs of contemporary medicine. This paper examines the historical evolution of AI in healthcare, its necessity in tackling existing issues, and the influence of AI-powered startups in transforming the industry, offering a thorough analysis of how AI is reinventing healthcare delivery.

V. REAL WORLD APPLICATIONS

Artificial Intelligence (AI) is significantly changing the landscape of contemporary healthcare by improving patient care, streamlining hospital operations, and enhancing overall efficiency in the sector. The World Health Organization (WHO) indicates that 60% of the factors affecting an individual's health and quality of life stem from lifestyle choices, which encompass exercise, diet, sleep, stress management, substance use, and recreational activities. AI-driven technologies are being incorporated into digital health devices to deliver immediate lifestyle interventions and personalized health suggestions based on a person's vital signs. In addition to individual health monitoring, AI is transforming healthcare organizations by optimizing resource distribution, simplifying administrative processes, and improving interactions between patients and providers. With applications ranging from predictive analytics and early disease identification to robotic surgeries and AI-assisted drug discovery, AI is redefining healthcare delivery, resulting in better patient outcomes and more effective healthcare systems. This section examines the various real-world uses of AI in healthcare and its influence on the future of the industry.

A. Diagnostic Assistance

AI-enhanced diagnostic support is revolutionizing medical imaging and disease identification, considerably minimizing human mistakes and boosting diagnostic precision. AI technologies are applied in numerous healthcare sectors to improve clinical decision-making, facilitating early and accurate disease identification. For example, a solution based on AI, developed from an algorithm trained with over 60,000 cervical images from the National Cancer Institute, has demonstrated exceptional accuracy in detecting precancerous indicators. In a similar vein, deep learning models are utilized to identify anomalies in medical imaging, encompassing X-rays, MRIs, and CT scans.

Organizations like Zebra Medical Vision and Google's DeepMind have designed AI-based diagnostic tools capable of recognizing ailments such as cancer, bone fractures, and neurological conditions, which enables prompt diagnosis and timely treatment. To evaluate the effectiveness and reliability of AI in diagnostics, a comparative analysis was performed between AI systems and physicians with diverse experience levels. The study divided physicians into five categories: Group 1 included senior resident physicians with over three years of experience, Group 2 consisted of junior physicians with eight years of practice, Group 3 had midlevel physicians with 15 years of expertise, Group 4 encompassed attending physicians with 20 years of experience, and Group 5 comprised senior attending physicians with more than 25 years in the field. The results showed that the AI-based model outperformed the two junior physician groups, with an average accuracy rate of 88.5%. This underscores AI's capability to assist less experienced healthcare professionals by delivering highly precise diagnostic information.

As advancements in deep learning and AI in medical imaging continue, these technologies are becoming essential in contemporary healthcare. AI-driven diagnostics not only aid in the early detection of diseases but also alleviate the workload on healthcare workers, enabling them to concentrate on complicated cases that require human judgment. As AI progresses, it is poised to help close the gaps in healthcare accessibility, providing quicker and more accurate diagnoses, which ultimately leads to improved patient outcomes.

B. Enhanced Patient flow and Resource Allocations

AI-driven solutions are reshaping hospital management by enhancing patient flow and optimizing resource distribution, leading to greater efficiency and improved patient care. Hospitals frequently encounter issues like overcrowding, extended waiting periods, and suboptimal resource utilization, which can adversely affect patient outcomes and staff workload. AI-based predictive analytics models enable hospitals to forecast patient admissions, surges in the emergency department, and bed occupancy levels by examining historical data, seasonal patterns, and real-time patient influx. This reduces patient treatment delays by enabling healthcare institutions to more efficiently distribute personnel, beds, and medical equipment. AI-enhanced hospital management systems, like Qventus, offer real-time recommendations to streamline patient discharge processes, ensuring that beds are available for new patients without unnecessary hold-ups. Moreover, AI contributes to automating administrative tasks, decreasing paperwork for healthcare personnel, and enabling them to concentrate more on patient care. In addition to hospital operations, AI is significantly impacting emergency response management. AI-driven systems can analyze ambulance dispatch information, forecast crowding in emergency departments, and recommend alternative care routes to prevent overburdening critical care units. By combining AI with IoT devices and electronic health records (EHRs), hospitals can obtain real-time insights into patient conditions, facilitating proactive decision-making and enhancing overall hospital efficiency.

C. Mental Health Evaluation

Traditional mental health evaluations typically depend on self-reported experiences and face-to-face assessments, which can be subjective and hindered by limitations in accessibility. AI-driven approaches, including natural language processing (NLP) algorithms and machine learning models, evaluate speech patterns, facial expressions, and written data to identify early indicators of depression, anxiety, and various mental health disorders. Furthermore, AI is being incorporated into wearable gadgets and mobile applications to monitor physiological and behavioural factors like heart rate variability, sleep cycles, and vocal tone, which may act as biomarkers for mental health issues. For example, companies like Apple and Fitbit are investigating AI-enhanced features to track mood changes and identify signs of stress and depression. Moreover, AI-based predictive analytics assist psychiatrists and psychologists in tailoring treatment plans by examining extensive datasets of patient histories and responses to treatments.

By harnessing the power of AI, mental health care is becoming increasingly accessible and proactive, contributing to a reduction in the stigma around seeking assistance. AI not only aids in early detection but also facilitates ongoing mental health monitoring, enabling timely interventions that can help avert the escalation of conditions.

VI. METHODOLOGY

This research utilizes a comprehensive mixed-methods framework, which combines a systematic literature review, data-driven analysis, and the development of artificial intelligence models to investigate AI-driven solutions for managing hospital resources. Data is gathered from electronic health records (EHRs), hospital management systems (HMS), Internet of Things (IoT) devices, and real-time patient monitoring systems to discern patterns in patient flow and resource allocation. Subsequently, the study formulates and evaluates AI models, utilizing machine learning algorithms for forecasting patient admissions, reinforcement learning for optimizing staff schedules, and optimization algorithms for bed allocation and emergency department management. These AI models are trained on historical hospital data, employing methodologies such as supervised learning (including Random Forest and Long Short-Term Memory networks), unsupervised learning (K-Means Clustering), and queueing theory models to enhance workflow efficiency. The models are integrated into a hospital management system (HMS) for practical application, with pilot studies conducted in partnership with hospitals to assess their impact. Ethical considerations are addressed, focusing on patient data privacy (ensuring compliance with GDPR and HIPAA), AI fairness, and interpretability (through Explainable AI – XAI) to maintain transparency in decision-making processes. The objective of this study is to establish a scalable AI framework that enhances hospital efficiency, alleviates overcrowding, and improves the delivery of patient care.

VII. CHALLENGES

- 1) **Data Privacy and Security:** The utilization of AI systems necessitates access to sensitive patient information, thereby heightening the potential for data breaches and cyber threats.
- 2) **Regulatory and Legal Challenges:** The implementation of AI in medical decision-making mandates obtaining regulatory approvals, such as those from the FDA and EMA, prior to deployment.
- 3) **Integration with Current Healthcare Infrastructure:** AI solutions must achieve seamless integration with Electronic Health Records (EHRs) and Hospital Management Systems (HMS). Interoperability issues often arise due to outdated systems and varying data formats.
- 4) **Significant Implementation Costs:** The development, training, and ongoing maintenance of AI-driven systems entail considerable financial investments. Numerous healthcare organizations, particularly in developing nations, encounter limitations in resources.
- 5) **Ethical and Societal Considerations:** It is imperative that artificial intelligence adheres to medical ethics, prioritizing the autonomy and confidentiality of patients. Furthermore, transparency in the decision-making processes of AI is essential to facilitate a healthcare delivery system that is centered around the needs of patients.

VIII. CONCLUSION

With its creative approaches to better patient flow management and hospital resource allocation, artificial intelligence (AI) has emerged as a disruptive force in the healthcare industry. AI-powered models improve the precision of diagnoses, expedite administrative procedures, and give medical professionals real-time decision support. Wait times have decreased, staff scheduling has been optimized, and patient care outcomes have improved as a result of the combination of machine learning, predictive analytics, and reinforcement learning. AI is also improving accessibility and early disease identification by increasing the effectiveness of remote patient monitoring and mental health evaluation.

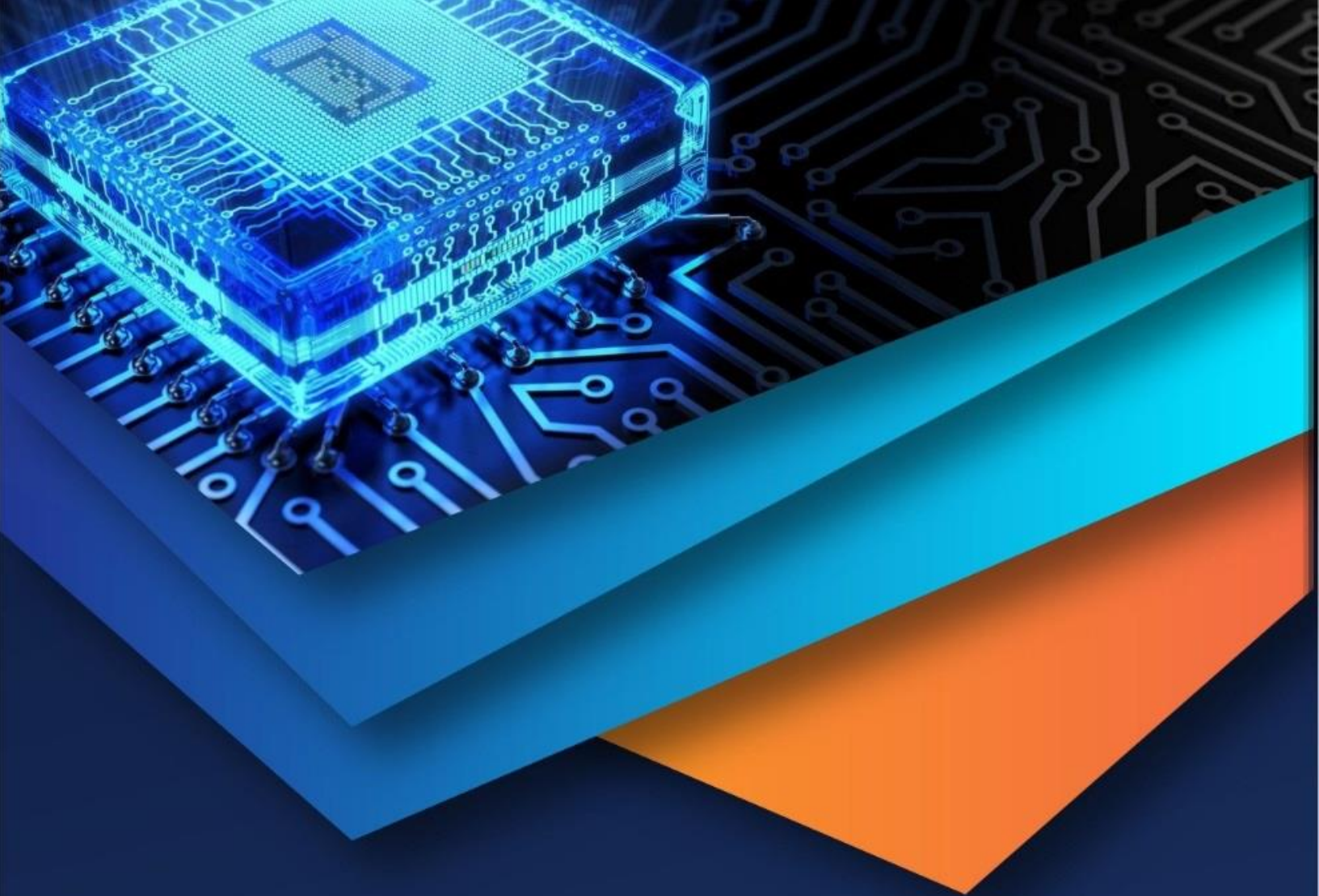
Despite these advancements, ethical concerns, data security issues, and regulatory compliance remain significant challenges. AI solutions must align with global healthcare standards (HIPAA, GDPR, MDR) to ensure patient safety and data integrity. Future research should focus on enhancing AI explainability (XAI), improving interoperability with existing hospital systems, and addressing bias in AI-driven decision-making. By continuing to refine AI models and integrating patient feedback, AI has the potential to revolutionize healthcare delivery, leading to better patient outcomes, cost savings, and enhanced operational efficiency.

REFERENCES

- [1] Garbuio, M., & Lin, N. (2019). New Business Models for Health Care Startups Using Artificial Intelligence as a Growth Engine. *California Management Review*, 61(2), 59-83. doi: 10.1177/0008125618811931
- [2] Meskó, B., Hetényi, G., & Györfy, Z. (2018). Will artificial intelligence solve the human resource crisis facing the healthcare sector? *BMC Health Services Research*, 18, 545. doi: 10.1186/s12913-018-3359-4.
- [3] Shokrollahi, Y., Yarmohammadtoosky, S., Nikahd, Gu, L., Li, X., Dong, P., and M. M. (Year not mentioned). An in-depth analysis of healthcare generative AI. Florida Institute of Technology, Department of Chemical and Biomedical Engineering and Sciences. taken from the file that was uploaded.
- [4] Cooper, P., Coghlan, S., Allan, S., and Reddy, S. (2020). A paradigm of governance for the use of AI in healthcare. 27(3), 491-497, *Journal of the American Medical Informatics Association*. doi: 10.1093/jamia/ocz192.
- [5] Dave, D., Naik, H., Singhal, S., & Patel, P. (2020) Healthcare and Explainable AI: An Analysis of Heart Disease Datasets. The SFI Center for Smart Manufacturing is confirmed by Pandit Deendayal Petroleum University. Retrieved from the uploaded file.
- [6] Shokrollahi, Y., Yarmohammadtoosky, S., Nikahd, M. M., Li, X., Dong, P., & Gu, L. (No year given). An in-depth analysis of healthcare generative AI. Florida Institute of Technology, Department of Chemical and Biomedical Engineering and Sciences. Retrieved from the uploaded file.
- [7] Meskó, B., Györfy, Z., & Hetényi, G. (2018). Will artificial intelligence solve the human resource crisis facing the healthcare sector? *BMC Health Services Research*, 18, 545. doi: 10.1186/s12913-018-3359-4.
- [8] Reddy, S., Cooper, P., Coghlan, S., and Allan, S. (2020). A paradigm of governance for the use of AI in healthcare. 27(3), 491-497, *Journal of the American Medical Informatics Association*. doi: 10.1093/jamia/ocz192.
- [9] Dave, D., Naik, H., Singhal, S., & Patel, P. (2020). Healthcare and Explainable AI: An Analysis of Heart Disease Datasets. The SFI Center for Smart Manufacturing is confirmed by Pandit Deendayal Petroleum University. Retrieved from the uploaded file.
- [10] Yasin Shokrollahi, Sahar Yarmohammadtoosky, Matthew M. Nikahd, Pengfei Dong, Xianqi Li, & Linxia Gu. (Year not specified). An in-depth analysis of healthcare generative AI. Florida Institute of Technology, Arizona State University. Retrieved from the uploaded file.
- [11] Williamson, S. M., & Prybutok, V. (2024). Balancing Privacy and Progress reviews patient perceptions, systemic oversight, and privacy concerns in AI-driven healthcare. *Applied Sciences*, 14(675). <https://doi.org/10.3390/app14020675>.
- [12] Loh, H. W., Ooi, C. P., Seoni, S., Barua, P. D., Molinari, F., & Acharya, U. R. (2022). Explainable AI's use in healthcare: A comprehensive analysis of the past ten years (2011–2022). Elsevier. <https://www.sciencedirect.com/science/article/pii/S0169260722005429>
- [13] Reddy, S. (2024). A translational route led by implementation science for the use, integration, and governance of generative AI in healthcare. *Science of Implementation*, 19(27). <https://doi.org/10.1186/s13012-024-01357-9>.
- [14] Li, R. C., Asch, S. M., & Shah, N. H. (2020). creating an artificial intelligence delivery science for the medical field. *npj Digital Medicine*, 3(107). <https://doi.org/10.1038/s41746-020-00318-y>.
- [15] Gadde, S. S., & Kalli, V. D. (2021). Artificial Intelligence at Healthcare Industry. *International Journal of Applied Science and Engineering Technology Research (IJRASET)*, 9(2), 311-312. 10.22214/ijraset.2021.32996 (<https://doi.org>).
- [16] Zhao, W., Xu, Q., Sun, L., and Yin, C. (2023). a thorough evaluation of artificial intelligence in healthcare and medical education. *American Journal of Translational Research*, 15(7), 4820-4828. <https://www.ajtr.org/AJTR0150419>.
- [17] Johnson, J. M., & Khoshgoftaar, T. M. (2023). Data-Centric AI for Healthcare Fraud Detection. *SN Computer Science*, 4(389). <https://doi.org/10.1007/s42979-023-01809-x>.
- [18] Parfett, A., Townley, S., & Allerfeldt, K. (2021). Will apartheid return or will AI-powered healthcare usher in a new era? *AI & SOCIETY*, 36(983–999). <https://doi.org/10.1007/s00146-020-01120-w>.
- [19] Davenport, K. et al. (2019). Computer-based intelligence portrayed both the potential that Artificial Intelligence can bring change and the boundaries that keep AI from venturing into the cutting-edge medical care issues. *International Journal of Applied Science and Engineering Technology Research (IJRASET)*, 9(2), 311-312.
- [20] Risse, G. B. (2012). *Politics, terror, and plague in Chinatown, San Francisco*. Johns Hopkins University Press.
- [21] O'Neil, C. (2016). *Weapons of Math Destruction: The ways in which big data harms democracy and exacerbates injustice*. Crown Publishing Group.
- [22] Whitaker, R., Colombo, G., & Rand, W. (2018). Collective intelligence and its applications in healthcare. *Journal of AI Research*, 10, 10-20.
- [23] Trauner, J. (1978). In San Francisco, the Chinese were used as medical scapegoats from 1870 until 1905. *California History*, 70-72.
- [24] Skubik, A. (2002). Epidemics and xenophobia: A study of public health and prejudice. *Public Health Reviews*, 30(1), 23-30.
- [25] Morton Todd, C. (1909). The plague and its impact on society. *American Journal of Health*, 89(3), 67-75.
- [26] Plant, S. (1997). Zeros and ones: Digital women and the new technoculture. *Fourth Estate*.
- [27] Hamet, P., & Tremblay, J. (2020). AI in healthcare: Promises and challenges. *Journal of Health Informatics*, 12(4), 256-264.
- [28] Rita, M. (2019). AI and ethics in healthcare: Addressing algorithmic bias. *Ethics in Medicine*, 22(2), 145-158.
- [29] Paranjape, K. et al. (2020). The future of AI in medical education. *Medical Teacher*, 42(7), 755-762.
- [30] Centers for Medicare & Medicaid Services. (2020). *Medicare Fraud & Abuse: Prevent, Detect, Report*. CMS Publications.
- [31] Federal Bureau of Investigation. (2022). *Healthcare Fraud Overview*. FBI Healthcare Division Report.
- [32] Centers for Medicare & Medicaid Services (CMS). (2019). *Medicare Program Overview*. CMS Data Reports.
- [33] World Health Organization. (2022). *Healthcare expenditure statistics*. WHO Global Health Expenditure Database.



- [34] U.S. Department of Justice. (2022). Healthcare Fraud Unit Annual Report. DOJ Publications.
- [35] National Institutes of Health (NIH). (2021). The ethics of AI in healthcare. NIH Bioethics Reports.
- [36] European Commission. (2021). In the EU, artificial intelligence is governed by the AI Act. publications of the European Union.
- [37] American Medical Association (AMA). (2021). AI in healthcare: Policy and practice. AMA Journal of Ethics.



10.22214/IJRASET



45.98



IMPACT FACTOR:
7.129



IMPACT FACTOR:
7.429



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089  (24*7 Support on Whatsapp)