

A Review of Literature on use of AI in healthcare sector

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Abstract :

Healthcare system around the world is facing significant challenges in improving public healthcare. The Covid Pandemic also highlighted the shortage of healthcare workforce. With development of artificial intelligence, this lacuna of supply and demand in healthcare sector can be addressed. AI is useful in healthcare sector having various applications. In this paper researcher has reviewed the various applications of AI in healthcare sector.

Introduction :

Artificial intelligence is a technology having capacity to perform the task like human being. With AI machines became intelligent through algorithms. The key areas of artificial intelligence are machine learning, deep learning, natural language processing and computer vision. Artificial intelligence has entered in every filed including education, healthcare, marketing, food industry etc. Artificial intelligence can be used in healthcare sector in radiology, telehealth, clinical care etc.

Review of Literature :

Jordan P. Richardson, Cambray Smith, Susan Curtis, Sara Watson, Xuan Zhu, Barbara Barry & Richard R. Sharp in their research article, “Patient apprehensions about the use of artificial intelligence in healthcare” studied patients perspectives on use of technology for healthcare. Applications of artificial intelligence in healthcare is benefited by computing power to inform evidence base decision making. The study analyses as many patients are enthusiastic for use of AI in healthcare sector but they are concern about the safety and oversight of AI in healthcare.

Srikanth Suryadevara1, Anil Kumar Yadav Yanamala, in their research article, “Patient apprehensions about the use of artificial intelligence in healthcare” wrote as use of AI is promising advancement in diagnostics, treatment optimization and patient care. Tough the patients are concern about data privacy, safety and analytical capability of AI tools.

Fei Jiang¹, Yong Jiang², Hui Zhi³, Yi Dong⁴, Hao Li⁵, Sufeng Ma⁶, Yilong Wang⁷, Qiang Dong⁴, Haipeng Shen⁸, Yongjun Wang⁹ in their research article, “Artificial intelligence in healthcare: past, present and future”, studied as AI aims to mimic human cognitive function. The machine learning technique is used to analyse structured data whereas deep learning, natural language processing is used to analyse unstructured data. Major deceases area where artificially intelligent tools used are cancer, neurology & cardiology. The in-machine learning data analytical algorithms extracts features from data and analyses patient traits. Machine learning algorithms has 2 types as supervised learning & unsupervised learning. Semi supervised learning is hybrid between supervised learning and unsupervised learning.

Sai Krishna Chaitanya Tulli, in their research article “Utilisation of Artificial Intelligence in Healthcare Opportunities and Obstacles” wrote as the AI has been used across various sectors as diagnostics and treatment formulation, digital health records, drug interaction and discovery, dermatology, radiology, psychological disorder etc.

Ahmed Al Kuwaiti^{1,*}, Khalid Nazer^{2,3}, Abdullah Al-Reedy⁴, Shaher Al-Shehri⁵, Afnan Al-Muhanna^{6,7}, Arun Vijay Subbarayalu⁸, Dhoha Al Muhanna⁹ and Fahad A. Al-Muhanna in their research article, “A Review of the Role of Artificial Intelligence in Healthcare”

opined as AI applications has transformed the healthcare. In Covid 19 pandemics healthcare system leads to failure in many countries like India. To overcome this failure AI tools can help medical sector. Todays we observing use of AI tools across various industries of healthcare. But with increasing use of AI some challenges are faced by in healthcare as ethical and social challenges, governance challenges, technical challenges etc.

Thomas Davenport, Ravi Kalakota in their research article, “The potential for artificial intelligence in healthcare” wrote as Artificial intelligence (AI) and related technologies are increasingly prevalent in business and society, and are beginning to be applied to healthcare. These technologies have potential to transform the aspects of patient care and administrative process. The application of technologies like machine learning, neural N/W, deep learning, natural language processing, rule based expert system, physical robots etc. are used for various applications like diagnostic and treatment application, administrative applications etc. It is also clear that AI cannot replace human but augment with their effort for better quality.

Ravi Manne, Sneha C. Kantheti in their research article, “Application of Artificial Intelligence in Healthcare: Chances and Challenges” wrote as organizations from health care of different sizes, types and different specialties are now a days more interested to use AI. The reason behind it as AI is helping patient needs and their care, also reducing costs, and increasing efficiency. This study explores the implications of AI on healthcare management, and challenges involved with using AI in healthcare along with the review of several research papers that used AI models in different sectors of healthcare like Dermatology, Radiology, Drug design etc.

Manas Dave & Neil Patel in their research article, “Artificial intelligence in healthcare and education” studied as AI has the potential to bring positive changes in healthcare and to empower patients by giving appropriate information. In recent years, AI has been used to improve the delivery of healthcare in a variety of ways, from providing personalized health information to enabling virtual consultations and remote monitoring.

Conclusion :

AI use is increasing day by day in healthcare sector. It is bringing more superiority in medical treatments and decision making function of healthcare experts. Sometimes the patients are thinking for security issue and trustworthiness of AI tools. But in future their will be radical transformation in medical processes with the use of artificial intelligence.

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