Artificial Intelligence in Health Care

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Currently, plenty of everyday applications are available that are integrated with artificial intelligence (AI) to enhance the lifestyle of people. A few of the classical examples of AI-integrated applications include the Google Assistant, Tesla self-driving cars, and devices used for home automation. These, in general, attempt to reduce the workload and help to complete complex tasks in an easy way. The healthcare system is not an exception in utilizing such AI and enhancing the overall functioning of the system. There are many applications of AI in certain potential areas of drug discovery, clinical data management, diagnostics, and administrative workflow in the healthcare system.[1] The few classical examples of AI used in healthcare setup are chatbots, robotic surgery, and precision medicine.

A chatbot is a simple way of connecting with patients. These are helpful in certain aspects of health care, like fixing appointments with the consultants and clarifying queries related to diseases and medication. Since patients find it difficult to talk with computers and also think that it is unreliable, the utility of chatbots is still not at a satisfactory level.[2] But this was disproved when the MyGov Corona Helpdesk chatbot launched by the Government of India during the pandemic crossed 3 crore users across the country. This chatbot was mainly introduced to help the citizens to find nearby COVID vaccine centers, share important and authentic information about coronavirus disease-2019 (COVID-19), and also prevent the spread of incorrect information among the public.[3]

The use of AI revolutionized the field of surgery by minimizing the variations in procedures in spite of different levels of skills of the surgeons, especially in complex or newer surgical procedures. Apart from this, they can also store and utilize the data of past procedures to develop new surgical techniques. AI can also be helpful in developing or underdeveloped countries with inadequately qualified healthcare professionals. It helps to reach people in remote areas, make an early diagnosis, and hence reduce the morbidity and mortality due to common diseases that are left undiagnosed due to poor human resources.[1]

Another important use of machine learning in health care is precision medicine. In simple terms, precision medicine means making an appropriate diagnosis of a disease condition through algorithm-based machine learning. Most of these diagnoses are based on groups of previously accumulated datasets, such as radiological/pathological images, signs and symptoms, and laboratory investigations. The accuracy of diagnosis with AI is relatively good but there is still a medical ethical dispute about sharing the information of patients.[1]

AI, nevertheless, also has its own pitfalls. One such major pitfall is errors in diagnosis. Human errors can also happen,

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but it is different from those errors due to AI systems. It is more threatening than human errors because an underlying error in the AI system can mislead the diagnosis in numerous patients and hence result in severe consequences. Another issue with AI is the requirement of massive data from various sources to adequately train these systems. So pooled data from multiple health setups are required, which is practically very difficult. Even sharing of patient's information between healthcare setups and AI developers will be a violation of the privacy policy of patients. The more important concern of medical professionals is that AI may replace human knowledge and the risk of reduction in employment in certain areas where it is fully automated with the AI system.[4]

In essence, the actual benefits of AI becoming more relevant would be beneficial by providing faster service, more accurate diagnosis, and appropriate timely treatment.

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