THE ROLE OF ARTIFICIAL INTELLIGENCE AND ROBOTICS IN MEDICINE

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Abstract

This article commentates on the concepts of Artificial Intelligence and Robotics. Today, there is talk about the role of Artificial Intelligence and robotics in practices and medicine aimed at improving human health. Their disadvantages are listed, and the advantages are mentioned. As one of the most important areas of medicine, we can see that surgery is also being carried out using modern robotics. It is claimed that these robots are helping surgeons perform difficult surgical procedures more accurately and efficiently.

Keywords: Artificial intelligence, robots, modern technology, medicine, diagnostics, diagnosis, early detection of diseases, surgery.

Introduction

Today, the technology is widely used in many industries, including medicine. To say that artificial intelligence has become the best assistant to doctors would not be an exaggeration. In particular, modern technologies are used in the treatment and diagnosis of patients in all branches of medicine. They have a place in their lives, in some ways. From the wake-up call that wakes us up in the morning to the personalized recommendations on our phones, it's quietly impacting our lives. In this article, we will look at how artificial intelligence and robotics are being used in diagnosis, treatment and diagnosis, how they are helping in health care and disease prevention, and the challenges faced in this process.

The Main Part

Artificial intelligence is a separate field of computer science that is usually concerned with the creation of computer systems with capabilities related to the human mind: language understanding, teaching, discussion, problem solving, translation, and the like. Artificial intelligence can also help improve the accessibility of healthcare. Remote monitoring and virtual consultations are increasingly being used to reach out to patients who are not easy to get medical care from. Artificial

intelligence-based chatbots (CHATGPT) can help patients access important health information and can even identify patients based on their condition. Overall, the impact of artificial intelligence on medicine is positive and comprehensive. As artificial intelligence technology continues to advance, healthcare professionals are gaining the opportunity to provide better care, faster diagnoses, and more targeted treatments. The application of artificial intelligence in medicine gives effective results. In particular, artificial intelligence algorithms help to predict the disease by analyzing the patient's health status and risk factors in detecting diseases such as heart, vascular diseases, cancer, diabetes. This allows to detect the disease at an early stage and prevent its aggravation. The most difficult stage of treating a cancer patient is choosing the right method. Doctors usually have two or more treatments at their disposal, but no one can say for sure which method will work and which method the body rejects. To solve this problem, doctors in London have learned to create digital "twins" of patients. FarrSight-Twin technology creates a virtual "rabbit of experiments" of the same name, taking into account all the characteristics of the patient's organism, and has tried different treatment methods. The results are staggering — the treatment that FarrSight-Twin found effective actually helped the patient beat the cancer in 75 percent of cases." We spend billions of dollars on developing new cancer treatments around the world," said consultant oncologist Dr Uzma Asgar, who works at The Royal Marsden NHS Foundation Trust Hospital in London. Using numerical twins, we can represent individual patients, construct a clinical trial group, and compare treatment options. This allows us to assess the likelihood of success of the work before testing on real patients." The idea of using artificial intelligence has existed before, but thanks to the development of neural networks, it is now becoming the most efficient and easy to use method. However, over time, diseases develop, and some factors, such as the environment, food, lifestyle, etc., in such cases, along with the development of diseases and medical technologies, it is necessary to update and adapt artificial intelligence. The use of artificial intelligence in personal medicine requires a large amount of personal data. And that's one of the big challenges in terms of data security. Misuse or distortion of medical information can have negative consequences for patients. The ability of artificial intelligence systems to manage false positives and negative outcomes is critical. Due to the diversity of medical information and coming from different sources, inaccurate results can sometimes occur. This can lead to improper treatment of patients or delayed detection of diseases. Therefore, it is imperative to regularly monitor artificial intelligence systems and verify the results.

Roboto surgery, also known as robotic-assisted surgery, allows doctors to perform a wide range of complex procedures with greater flexibility, precision, and control than traditional methods. In India, robotic surgery is usually associated with minimally invasive surgery, which is performed through small incisions. Modern robots significantly increase the capabilities of surgeons, who are able to perform operations with higher accuracy and less trauma. Robotic arms can move in a way that human hands cannot, allowing for greater precision and control during operation. Robotic surgery uses smaller incisions than traditional open surgery, which can result in less pain, scarring, and faster recovery for the patient. Robotic surgery is less invasive and can result in less blood loss during the procedure. Patients who undergo robotic surgery have a faster and quicker hospital stay than traditional surgery. Robotic surgery is being used in prostate, gynecological, cardiac, and orthopedic surgery. The first robotic surgery in Uzbekistan was successfully performed with the

help of a robot, belonging to the Korean company "MEERE". At present, robotic surgery is becoming popular in India as this operation includes many benefits – improved accuracy, reduced pain, fewer incisions, less blood loss, shorter hospital stays, and faster recovery times. Robotic surgery procedures in India include a list of urological, gynecological, heart, gastrointestinal, and orthopedic surgeries. When robotic surgery begins, surgeons make a large number of tiny incisions in the human body. Thus, it reduces recovery time and reduces pain compared to traditional open surgeries. Through the use of these small incisions, robotic arms equipped with a finely twisted surgical apparatus are entered. This new era technology offers tremendous benefits as it increases the precision and agility that is critical when performing complex surgical procedures. Robots are making it much more convenient to deliver medicines while performing complex operations.

Conclusion

To sum up the explanation is that today's life without technology and technology cannot be imagined. As long as it is exerting its influence in every way, artificial intelligence, which it considers convenient to take the kerak.Biz right advantage of it, also has its own drawbacks. For example, as the development of artificial intelligence accelerates, so does professional activity. People seem to prefer to use artificial intelligence rather than reasoning. Technology does not develop by itself, that is, it needs to be updated and adapted to the times. He doesn't make mistakes, and he doesn't do it all right. Therefore, when using artificial intelligence and robotics not only in medicine, but also in other fields, the main task of employees of the sphere is to monitor and analyze what they are doing. Over time, diseases develop, and some factors, such as the environment, food, lifestyle, etc., in such cases, along with the development of diseases and medical technologies, it is necessary to update and adapt artificial intelligence. To meet these challenges, healthcare professionals and technologists must work together. Only in this way it will be possible to use artificial intelligence in medicine and obtain more effective results for patients

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