Artificial Intelligence Applications in Healthcare Analysis

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With the advancement in modern technology, there is enormous room for innovations and inventions in various fields and industries. Indeed, the use of automated technology has significantly explored new areas which need research and development as well as improving the already existing knowledge. Thus, the use of computer-automated machines, also known as robots, to discover and bridge the gap between unachieved and real situations is presently dominating many different sectors across the globe. Artificial Intelligence (AI) is a broad technological term in the discipline of computer science which examines and stresses the manufacturing of automated machines (robotics), which have a sophisticated capability in service delivery compared to human beings. There are several reasons why countries and states tend to adopt this form of technology. For instance, in the contemporary world, AI is essential in developing and improving the workforce in sectors such as construction, transport, aeronautical and bakery industries, among others. In the recent past, most organizations and companies, such as Microsoft, Leka, and Babylon Health, have integrated the field of artificial intelligence due to a couple of benefits such as planning, problem-solving, learning purposes, difficult space exploration and the ability to work without breaks and much more (Syam). Therefore, this paper seeks to explore the application of artificial intelligence technology in the healthcare industry in identifying and improving the crucial aspects within the medical departments across the states.

As indicated earlier, AI is a field which applies across many sectors to help develop and revolutionize the current way of doing things. According to medical specialists and other health practitioners, the idea of incorporating artificial intelligence in the healthcare system is commendable. The specialists imply that the technology will guide improvement in the diagnosis and treatment of severe infections, including cancer, which is the most killer disease across the continents. Also, this integration is critical in sophisticated health scenarios such as radiosurgery, which demand more accuracy and precision to avoid damaging patient brain tissues. Therefore, the adoption of modern robotics in the medical industry will induce greater positive impacts and aid in retaining efficient overall health standards among the population (Hamlet). Also, medical practitioners and other health scientists may develop robotics devices which, when fed with the patient's symptoms are capable of generating a treatment plan. A critical example is the Mind-Reading Algorithm Mechanism developed by Kyoto University in collaboration with ATR Neuroscience Laboratories in Japan. Some of the merits as well as possible means of restructuring excellent health facilities through the use of artificial intelligence, are as follows.

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Mobility of Disabled Patient Enabled By Robotic Medical Device

In the current world, due to many accidents which arise from the collapse of a building, road or aircraft incidences, may lead to individual disabilities. However, it is incredibly incredible that most of the patient who finds themselves crippled can go back to their healthy life through robotic devices. The machine is configured via mathematical codes and other computer languages to help the individual client or patient move or perform a given activity without much strain. The gadget comprises electronically modified limbs that offer easy mobility for the individual. A typical example of such a robotic device is the Hybrid Assistive Limb, invented and manufactured by Cyberdyne Inc. in Japan. Also, the machine is vital for clients experiencing exoskeleton and muscle problems. Thus, the gadget is a remedy for persons suffering from paralyzed limbs (Pompa).

Robotics Kids Guider

More interestingly, with robotic technology, it is possible to manufacture devices which closely mimic some human actions and cognition such as movement, jumping, and laughing, among others. These features of robotics can help catch the attention of the children hospitalized, thus making it simpler for the nurses or doctors administering the drugs and other forms of therapies. Again, robots are useful in helping kids to maintain their trips with their medical specialists. For instance, most hospitals in Canada embrace this technology, whereby the robotics used is approximately two feet tall with gestures and actions to attract kids. The research conducted by the University of Calgary and the Alberta Health Services depicted that most kids received their flu shots with the aid robots. Also, to emphasize the significance of robotics during therapy administration, Dr. Tanya, a robot developer, indicates that only a few kids never received the shots as a result of punching and kicking. However, as technology advances, developers should build software which includes more features like facial expressions to increase the level of interaction between kids and the robots (Celestin).

Robotics Companionship to the Elderly

In most states, the elderly group tend to live in the outskirts and within the peripheries of major cities. Hence, it makes them be left out or rather feel segregated from the rest of the society possibly working in the urban areas. Therefore, to reduce both severe social and emotional impacts facing old people, robotics devices come in to offer very close companionship. Indeed, the gadgets are critical not only for mutual expression and togetherness but also useful in reminding their counterparts of the intervals in which to take medicines. In support of the above, a study by the University of Auckland shows that the robotics machines in households of the elderly generation are vital in reducing social isolation and improving their medical care (Martinez-Martin).

Dentists’ Robots

In future, according to high levels of inventions in technology, dental departments and other health centres may experience a new workforce of robotics devices taking care of dental complications. The idea of dental robots does not only seem fascinating but also will help improve the frequency in the manufacturing of the crown part of the artificial tooth. Ideally, the mixing of chemical elements and compounds constituting crown requires accurate measurement, which is possible through robotics. In conjunction with this, companies and healthcare organizations specializing in the manufacturing of medicines and other forms of drugs can adopt Baxter robotics. Baxter robotics refers to the industrial-trained robots that can perform general tasks including mixing, kitting, packaging and line loading of the materials. On the other hand, the devices will aid in the extraction of aching tooth among the patient. A possible example in Japan explained a dentist robot that successfully managed to extract a wisdom tooth from a 55-year-old patient (Ehtesham).

Bacteria Killer Robots

However much tiny they are, microscopic organisms and germs, cannot escape the eyes of the robots. Comprehensive programming and configurations done to specific robots, facilitate the effective to determine and destroy a particular bacteria. For example, robotics designed to examine harmful bacteria can read and extract skin-affected layers in the form of X-rays and computerized tomography scans. A case of a hospital using robots to destroy bacteria is the University of Vermont Medical Center. According to the healthcare manager of the University, robots play a crucial role in eliminating errors induced by medical experts. Of late the global market depicts that the demand for such robots is rapidly increasing (Daniel).

Robotics Nurses and Caretakers

As the states witness technological wonders, it is essential to manufacture devices that will cater for the overall household tasks and chores such as washing utensils, laundry, carrying patients with impairments like mobility or visual from one point to another and many more roles at in a homestead. For example, in San Francisco, there is one solar panel factory, whereby robots dominate regarding workforce and with a relatively low human labour force. In this particular plant, robots perform tasks demanding much energy such as heavy lifting and aligning solar cells in various slots, among others. On the other hand, human workers engage in less energy involving tasks such as threading wires, trimming excess gadgets and materials as well as simple screwing of panels. The realization of innovations makes it possible for the manufacturers to come up with robotics nurses and caretakers to manage all home-based activities. An excellent example of such a robot is currently in Japan, commonly known as the ROBEAR, which carries out heavy tasks, including moving and lifting loads and supporting the mobility of individuals with impairment complications. Similarly, San Francisco

hosts some hospitals which use robotics, called Tugs, to perform roles such as laundry and delivering food and drugs to the patients. Another modern nursing robotics is the RIBA designed for an "Interactive Body Assistance." RIBA came into existence through the combined endeavours of RIKEN and the Tokai Rubber industry. Thus, their collaboration led to the development of a nursing-assistant robot, which also aided in lifting patients in and out of bed and even from wheelchairs. Moreover, research on the caretaker's robots depicts that their market is yet to rise in time across the globe (Ross).

Leukaemia Remedy

With the development of a particular type of robotic device referred to as the Nano-robots, it is possible to cure the disastrous infection of leukemia. In most instances, though there exist various forms of leukaemia, the common one tends to affect children severely. To remedy the epidemic, medical scientists may develop advanced robotics which can easily penetrate through the bloodstream to destroy the disease-causing cells. For instance, a medical expert in London portrays that the injection of tiny DNA Nanorobots to swim through the patient's bloodstream is critical in healing leukaemia without damaging an individual's internal tissues (Fader).

In conclusion, artificial intelligence as a modern form of technological development, is essential in exploring the gaps in existing knowledge. However, technology, on the other hand, tends to create more complications, especially in individual healthcare. The emergence of robotics devices in almost every department of the health centre generates unemployment among medical experts. For instance, in the case of a solar panel factory in San Francisco, the majority of the workforce comprises robots and only a few individuals, possibly technicians, thus rendering most people within the area jobless. Also, the regular exposure of the patients towards harmful radioactive rays such as X-rays and Nano-robots may further compromise the health of an individual patient (van).

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