REVIEW OF AI IN HEALTHCARE

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ABSTRACT:

Health Care Applications Scientist has come a long way in developing data-driven computer solutions, and according to many sources, they are very close to developing the computer literacy study Alan Turing proposed over a century ago. Artificial Intelligence and mechanical learning, technologies that are thought to perform tasks that require human ingenuity, are now widely debated in almost every field of science and engineering. However, the big question is "can this type of technology help in a critical field such as health care where accuracy and precision can be chosen?"

INTRODUCTION:

Nevertheless, strong criticism of the potential of modern "smart devices" called Artificial Intelligence is still in place, and those that support, diagnose and treat people are already in the hospital. This creates a new kind of competition in the clinical environment that makes the world's top hospitals spend a lot of money building an AI-supported environment in their facilities. 1. One of those machines is used at Mayo Clinic, the # 1 clinic ranked Best Hospitals Honor Roll (2017). In January 2017, the Mayo Clinic's Center for Individualized Medicine teamed up with Tempus, the start of health technologies focused on improving cancer care tailored to you using a machine learning platform. The partnership involves Tempus to perform "cell sequencing and analysis of 1,000 Mayo Clinic patients participating in immunotherapy studies" for a variety of cancers including "lung cancer, melanoma, bladder cancer, breast cancer and lymphoma." (Sennaar, 2017) While still in the research and development phase, technology uses algorithms to create DNA sequences using large medical data generated from the medical history of not only Mayo patients, but also many other health cooperative centers. In the words of Eric Lefkofsky, a Tempus co-founder and CEO with large enough data this machine can improve the DNA pattern of determining human potential.

Health Care Applications detect cancer and can help start a preventive measure before the development of cancer cells. The clinic is also operating at the initial $ 30 million to help a patient with heart disease which is the leading cause of death in the US, according to the Centers for Disease Control and Prevention (Sennaar, 2017, Alugubelli 2016). The device to be used for that purpose is called the Kardio Pro and is designed by AliveCor "to monitor patients for early detection of atrial fibrillation, the most common cardiac arrhythmia leading to a five-fold increased risk of stroke" using an AI platform. However, the technology is in the R&D phase and results are yet to be reported. 2. Another example of a practical AI would be Microsoft's partnership with Cleveland Clinic to use digital digital AI Assistant, Cortana to assist patients in the intensive care unit (ICU). With the inclusion of Cortana in the Hospitals program of the health care facility they have benefited from monitoring 100 beds in six ICUs from 7pm to 7am when medical personnel are not performing well. Data collected from monitored ICUs is stored in Microsoft's Azure SQL Database, a cloud-based database developed by application developers.

Data collection points such as patient values and laboratory data are also included in the program. The computer model is built from data that incorporates machine learning of forecasting analysis (Microsoft, 2016). 3. The next hospital in the AI building program is Massachusetts General Hospital. The hospital's Clinical Data Science Center has partnered with NVIDIA Corporation known for its graphical screening products (GPUs), to build a center for AI systems for detection, diagnosis, treatment and disease management. The "deep learning computer" will use a hospital database of around 10 billion medical images and will be used for radiology and pathology, initially (NVIDIA, 2016). 4. The latest Tel-Aviv-based initiative called "Beyond Vocal" operates data analysis solutions that will work with smart digital assistants, such as Siri, Alexa, Cortana, etc.

Therapeutic approaches and interventions for users (Miliard, 2017). In the words of the company's CEO, Yuval Mor, technology is believed to analyze certain health conditions using just a voice. They expect to collect data by practicing technology and listening to conversations between patient and physician during regular doctor visits. The facial expression and action analysis are considered to be the next stage of application development. 5. AI is not only designed to be used for diagnostic and diagnostic purposes, but according to the latest tech news it will be able to operate on its own or assist surgeons during and after the procedure. To facilitate such a process, Medicrea Group recently launched UNID HUB, an FDA-approved digital site that allows data for the company's Adaptive Spine Intelligence program (Siwicki, 2017). The system is used by the company's biomedical engineers in collaboration with surgical users to deliver UNID TEK, patient-specific spinal cords also produced by the company. HUB enables surgeons to trace the construction of 3-D printed implants and manage the process early. 6. Can AI be the answer to long quality life? Many technology giants are working on the AI healthcare system to find the answer to this question. Even in the development phase IBM and the University of California San Diego are working on a project that promises to improve the quality of life by increasing the independence of the elderly (Monegain, 2017). The technology will learn the daily habits, environment, genetics and psychological functioning of users to provide better lifestyle solutions. Of course, it will take time to gather enough data to make the system work, but in the words of company officials, the discovery of these high-quality living quarters is not far off.

Applications for Health Care 7. Prosthetics have long been used in health care for a number of reasons, but there have been only a few changes in those years in the industry. Recent changes are being proposed by Newcastle University in the UK. The new bionic arm made by medical engineers at the university is fitted with a special vision system that uses cameras to take a picture of the object in front of it, check its shape and size and perform a series of precision movements (Monegain, 2017). Kianoush Nazarpour, a senior lecturer in Biomedical Engineering at Newcastle University, says that, although the response is not as fast as a real arm, patients do not feel like a bionic arm is using its nerves to move. Because the accuracy of computer vision used on the phone is very close to the human eye. However, this device not only aligns the image or shape of an object with its database, but also learns to identify shapes or objects and compiles them according to the type of capture to improve its responsiveness in the future. That's what makes an AI-like app. Figure 1. Bionic arm working with an AI system developed by Newcastle University engineers. (Source: Healthcareitnews.com)

Health Care Applications As we have seen in the examples, technologies such as Artificial Intelligence technology are now available in the health care industry. Therefore, a successful investment in the sector will determine future

health industry leaders. However, before a large investment can be made there must be proper guidelines, rules and ethics. This industry not only increases profits, it needs to play by rules and set ethics above business objectives. Institutions should not only limit themselves to technology, but also ensure that medical professionals have sufficient knowledge to use that technology effectively. Besides, in this sector of the industry "human touch" cannot be eliminated, and management must ensure that employees view AI as an aid and not a substitute. Change is needed to move slowly, because this is a fundamental change and it needs to build trust in society.

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