



AI APOCALYPSE

Will AI replace radiologists?

SAMILA SOBHAN

Artificial Intelligence, in its simplicity, includes processes that replicate human intelligence manufactured to provide effective solutions to problems. The exponential growth of artificial intelligence has a widespread reach in many sectors, having immense success in almost every sector, benefitting many. The health and medical sector has also seen its fair share of success with the significant assistance of artificial intelligence. One such revolutionary development has been detecting and diagnosing troublesome diseases using medical images and image processing algorithms. Many studies have widely adopted such algorithms and achieved commendable results in image diagnosis, having attained state-of-art performance. Computer-Aided Diagnosis systems can discern diseases, for instance, tuberculosis, pneumonia, lung cancer, etc. from X-Rays by Machine Learning tools. From detecting early stages of breast cancer from mammograms, thus preventing the chances of high risk, to detecting Covid-19 from Chest X-Rays and CT scans, AI algorithms always have an ace up their sleeves. While this revolution can be of great assistance to doctors and

radiologists and aid in detection in a time-effective manner, especially in dire times such as the ever-evolving, petrifying pandemic, can AI dethrone radiologists?

Radiologists expertise in recognising maladies by analysing suspicious regions in medical images. The use of computers to read medical images dates back to the 90s when CADs detected carcinogenic tumours with flying colours in mammograms, astonishing everyone. A Machine Learning algorithm is first trained on a set of equivalent data collected through thorough research to be able to detect accurately. However, the technology was not as easily adapted due to the then scarcity of expert individuals and such technologies cost a fortune to install. It is also worth mentioning that AI diagnosis can save a lot of time, therefore paving doctors to attend to even more precarious concerns, increasing efficiency, and productivity. AI-based medical prognosis also contains ease of mobility and can be sent to international experts for a comprehensive examination. A notable difference between AI diagnosis and diagnosis by experts is that an

algorithm trained for a particular type or set of disease detection will fail to locate and uncover other anomalies, while on the contrary, a radiologist can look for multiple anomalies, therefore attesting to the requirement of human attention. Radiologists are thus essential in comprehending data processed by such algorithms. Whether AI diagnosis will change the path of diagnoses is still debatable among radiologists.

"We already use different types of AIs and computer programs to help with an initial diagnosis of the scans we take. But we don't depend on them solely and the radiologists are the ones who give the approved reports and proper diagnoses. Nowadays, AI has only been used for screening and prioritizing urgent cases" says Sajeda Choudhury, a Licensed Radiology Technologist. She works as an X-Ray and intervention technologist for Main Street Radiology, Queens, New York. When posed a question whether AI can cause a shift in radiologist jobs in the distant future she clarifies "I don't think so because from what I know none of the hospitals, radiologists, and doctors has full trust in AI." On top of

that, she believes patients take comfort in personal interactions and seeing the people that are accountable for treating them.

Sajeda Choudhury appeared to be optimistic about AI and radiologists working in cahoots to bring upon the best results to provide the finest, second to none treatment. "Yes, as I said before we use AI and computer programs to help us. But the final say is by us and the radiologist." An integrated system comprising radiologists, pathologists, and AI technology will be able to support and manage the vast amount of data.

Artificial Intelligence and Machine Learning algorithms provide enhanced and prompt diagnoses with great precision, minimising human and manual error. Radiologists will continue to be a crucial factor in the industry. Revolutionary technologies as such can redefine the framework of existing roles, create new avenues of jobs; however, the importance of radiologists and technicians will prevail in perpetuity and continue to increase to battle future biological weapons such as the Covid-19 pandemic.