Be Future Ready, Invest in AI

Teradiology Solutions is investing heavily in AI, **Dr Arjun Kalyanpur,** CEO, Teleradiology Solutions tells us why

Teleradiology Solutions is investing heavily in AI algorithms for imaging. Pls can you tell us more about the same?

Teleradiology Solutions has since its inception been focused on its mission of addressing the issue of radiologist shortages, and the use of technology to alleviate these. We recognize that the global radiologist shortage is so profound that there is a need to use technology to assist radiologists to be more efficient and productive and at the same time remain accurate, in order to meet the clinical needs of the healthcare industry. The use of AI or Deep Learning represents a paradigm shift in this regard. Through our technology division Teleradtech, we are currently focused on developing our own algorithms/IP in this space, particularly in the screening and emergency environment in which we practice. In addition we have partnered with other companies and institutions with the same ecosystem. Through our research division Image Core Lab we provide organizations that are involved in developing AI algorithms with a service and a workflow that allows them to validate these efficiently and cost-effectively. And our Teleradiology workflow Radspa provides a platform for AI companies to connect with their end-users, ie the radiologists, and to deploy their algorithms on scale. Given our 17 year experience in teleradiology and image data transfer/management we are able to support the AI ecosystem with best practices and economies of scale.

Do you think AI could replace radiologists some day?

Radiologists are doctors and therefore this is analogous to asking whether AI could replace doctors one day. Perhaps one day in the future the AI technologies could evolve to a point where every single aspect of a radiologists work could be performed. However today, AI is able to provide solutions primarily in the area of lesion detection, which itself is a tremendous benefit in reducing radiologist workload. The additional roles that a radiologist performs in the form of analysis of the imaging findings, correlation with clinical history, and discussion with clinicians still very much require human intervention at this point. Radiologists spend 5.5 years in medical school before they become radiologists and the clinical knowledge gained in that time frame, which is what puts radiologic images into their clinical context, is what makes radiologists difficult to replace by technology, however advanced. The value of AI however lies in its limitless ability to accumulate information and analyse patterns, and therefore while radiology learning is currently finite and is passed on from generation to generation, AI presents us with the possibility of it preserving it for perpetuity.

Precision and technology has been the mainstay in radiology, but they come with a price tag. How will we pay for AI then?

AI algorithms will ultimately pay for themselves in terms of cost savings by improving radiologist efficiency and productivity. Radiologists are currently a rare and a valuable resource and therefore optimizing their time utilization results in great cost savings to the healthcare enterprise. Additionally radiologic errors are a major cost to the healthcare industry, and by improving radiologist accuracy and preventing errors, AI can certainly help reduce costs.

Will AI deliver on its promise of potential cost-saving and effective healthcare? On what level AI will have to be implemented to get this to happen?

AI is currently in its infancy. In the future, I believe AI can certainly help with cost reduction due to the factors outlined previously. Obviously to demonstrate impact, such changes would need to be implemented at a health system or preferably at a national level. For example, a TB screening program that incorporates AI technology into its detection can save significant radiologist time, and cost and benefit the public health system as a whole.

What challenges do you foresee for clinical implementation of AI in India?

The challenges are many like lack of research depth in the healthcare industry and a rush to create algorithms without detailed validation. Besides there are too many algorithms but not all are in one place, making it difficult for the doctor to decide which algorithm to use when and where and how.

Other challenges are:

+ Poor data management and archival
+ Cost cutting, and short term perspective by consumers
+ Relative lack of regulation in healthcare

How will this segment shape-up in the coming years?

In terms of AI in healthcare we are at the same stage in the aviation industry when the Wright brothers made their initial flights. There is huge excitement and some hype with a large number of players entering the fray but at the same time there is substance in the value proposition and once the dust settles, I believe that the true results will be revealed. More and better algorithms will be released into the market, much like apps on a smartphone. In this context, I see teleradiology workflow such as Radspa as being the Operating system or the connector that enables these apps to reach the consumer. In this regard, I feel optimistic that teleradiology will be the enabler that ultimately unleashes the incredible potential of AI in diagnostic imaging. IMT