

Artificial intelligence (AI) is transforming healthcare delivery. The digital revolution in medicine and healthcare information is prompting a staggering growth of data intertwined with elements from many digital sources such as genomics, medical imaging and electronic health records. Such massive growth has sparked the development of an increasing number of AI-based applications that can be deployed in clinical practice. Pulmonary specialists who are familiar with the principles of AI and its applications will be empowered and prepared to seize future practice and research opportunities. The goal of this review is to provide pulmonary specialists and other readers with information pertinent to the use of AI in pulmonary medicine.

In the face of the current time-sensitive COVID-19 pandemic, the limited capacity of healthcare systems resulted in an emerging need to develop newer methods to control the spread of the pandemic. Artificial Intelligence (AI), and Machine Learning (ML) have a vast potential to exponentially optimize health care research. The use of AI-driven tools can help in eradicating health inequalities and decrease the burden on health systems.

*The need of AI during this pandemic:* AI can assist to increase the speed and accuracy of identification of cases and through data mining to deal with the health crisis efficiently.

*Utility of AI in COVID-19 screening, contact tracing, and diagnosis:* Efficacy for virus detection can be increased by deploying the smart city data network using terminal tracking system along-with prediction of future outbreaks

*Use of AI in COVID-19 patient monitoring and drug development: A*  
Deep learning system provides valuable information regarding protein structures associated with COVID-19 which could be utilized for vaccine formulation,

As a part of the diagnosis process, doctor's take around 2000 Computed Tomography (CT) scans of a patient in the entire hospitalization process. Manually reading and comparing these scans requires a huge amount of manual effort. It takes around 15 minutes for an experienced doctor to analyze these scans. As the number of patients has proliferated considering the situation of how the virus is spreading there has been a scarcity in the number of doctors and experienced professionals. Medical professionals are made to work overnight and the individuals assessing these scans are often exhausted and operating under exorbitant workloads where human error could easily become an issue.

Hence, there is a need for accurate CT scan analysis system.

To expedite this scrutinizing process, a system which can help in significantly improving the testing accuracy and detection efficiency rates is needed. This system should be able to assist in identifying the coronavirus pneumonia CT scans with high accuracy. This identifies the scans within 20 seconds, which is 60 times faster than manual human detection methods.

The system can be trained with a dataset of positive coronavirus cases. It can use deep learning algorithms to study the patterns of infection and can be used for two things effectively: one to track responses in confirmed cases, and the other to provide diagnoses for the suspected

cases. It should be able to find the difference between common pneumonia and COVID- 19 pneumonia. Once this system identifies a CT scan as positive coronavirus case, it can help the doctors to productively track and look at the development of treatment of the Covid-19 patients.