A photograph of a medical professional in blue scrubs and a female doctor in a white lab coat standing in a CT scan room. The doctor is pointing at a monitor displaying a chest CT scan image. A patient is lying on a table inside the CT scanner. A large red and orange circular graphic is overlaid on the left side of the image, containing text.

Artificial Intelligence based Covid-19 detection from chest X-ray or CT-scan images

Deep learning based X-ray or CT-scan image classification

The scarcity of Covid-19 'Reverse Transcription Polymerase Chain Reaction' (RT-PCR) test kits is further compounded by the long turn-around time for test results with high (about 30-40%) false negatives. Hence, there is a need for ancillary Covid-19 diagnostic tools for selecting high-risk patients for RT-PCR testing or re-testing and isolating them while waiting for the test results. Wipro's fully automatic Artificial Intelligence (AI) tool detects Covid-19, pneumonia and normal cases from chest X-ray or CT-scan images.

Key takeaways



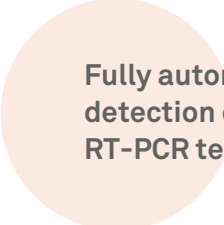
AI based multi-class detection tool from chest X-ray or CT-scan images, without manual intervention



Real-time detection in about 5 seconds per image



Covid-19 detection accuracy is more than 95% with less than 2% false negatives

A light orange circular graphic containing text.

Fully automated AI based Covid-19 detection complements conventional RT-PCR test limitations

Key benefits



Fully automatic AI based Covid-19 detection tool, which can work with either chest X-ray or CT-scan images



Detection tool can run on stand-alone server or on Cloud



Detection tool gives out instant results with very low false negative rate compared to RT-PCR tests



More than 95% detection accuracy with less than 2% false negatives

AI based Covid-19 tool can be fully integrated with the existing hospital infrastructure and completely automated

Features



Works with 'Digital Imaging and Communications in Medicine' (DICOM) files and outputs detection result along with confidence scores



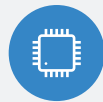
AI model is trained with about 7,000 X-ray/CT-scan images from normal, common pneumonia and Covid-19 classes



Graphical output and text log files for ease of review and records



Ease of deployment - can be deployed on stand-alone server or cloud



Can be fully integrated into the existing hospital infrastructure including DICOM and 'Electronic Medical Records' (EMR) systems through 'Health Level-7' (HL7)

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