IIT Indore develops AI-based method for improving study of CT-Scans

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Indian Institute of Technology Indore, KIIT University, and Choithram Hospital and Research Centre, have developed a deep-learning (Artificial Intelligence) based method to overcome the limitations of the manual method of reading chest CT scans and shed new light on the correlation of biochemical parameters with lung inflammation in Covid-19 patients.

The researchers include IIT Indore faculty members Dr Hem Chandra Jha and Dr M Tanveer, Dr Nirmal Kumar Mohakud from Kalinga Institute of

THE RESEARCH TEAM

Medical Sciences and Dr Suchita Jain from Choithram Hospital and Research Centre.

"C-reactive Protein (CRP) is the most critical parameter for classifying symptomatic and asymptomatic groups. To overcome the limitations of the manual method of reading chest CT scans, the researchers used a 2D U-Net-based deep learning approach to develop 2D images, which would segment the lungs and detect ground-glass-opacity (GGO) in specific lobes. This method showed over 90 per cent accuracy as compared to around 80 per cent accuracy of the manual process," a press release issued by IIT Indore said.

Jha said, "The effect of inflammation-mediated disease may start initially from the right lobe region of the lungs and subsequently affect the rest of the lungs. Our approach can be helpful in the early detection of lung involvement and also increase accuracy. Samples from more than 1,100 Covid-19 patients were collected for the study. Further study on geographically diverse large populations may help to understand the association of biochemical parameters and pattern of GGO in lung lobes with different SARS-CoV-2 variants."