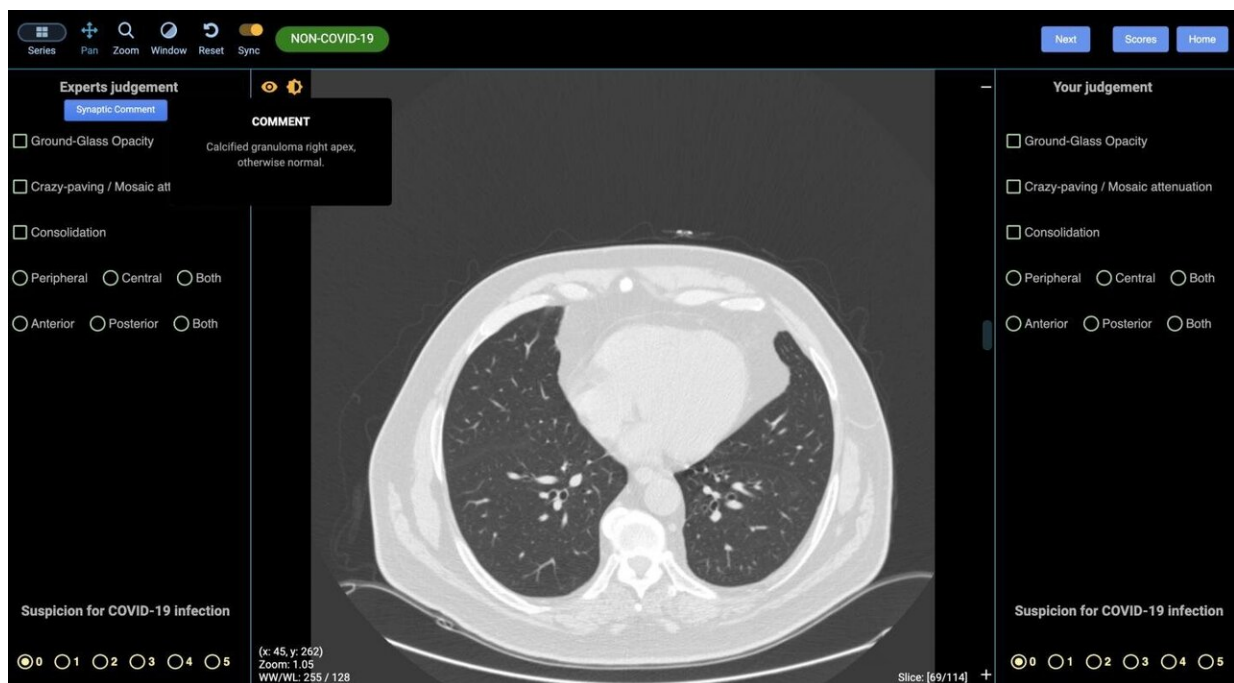# World-first tool to improve COVID-19 diagnosis, free and online

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An image from the DetectED-X platform of a lung with no signs of COVID-19
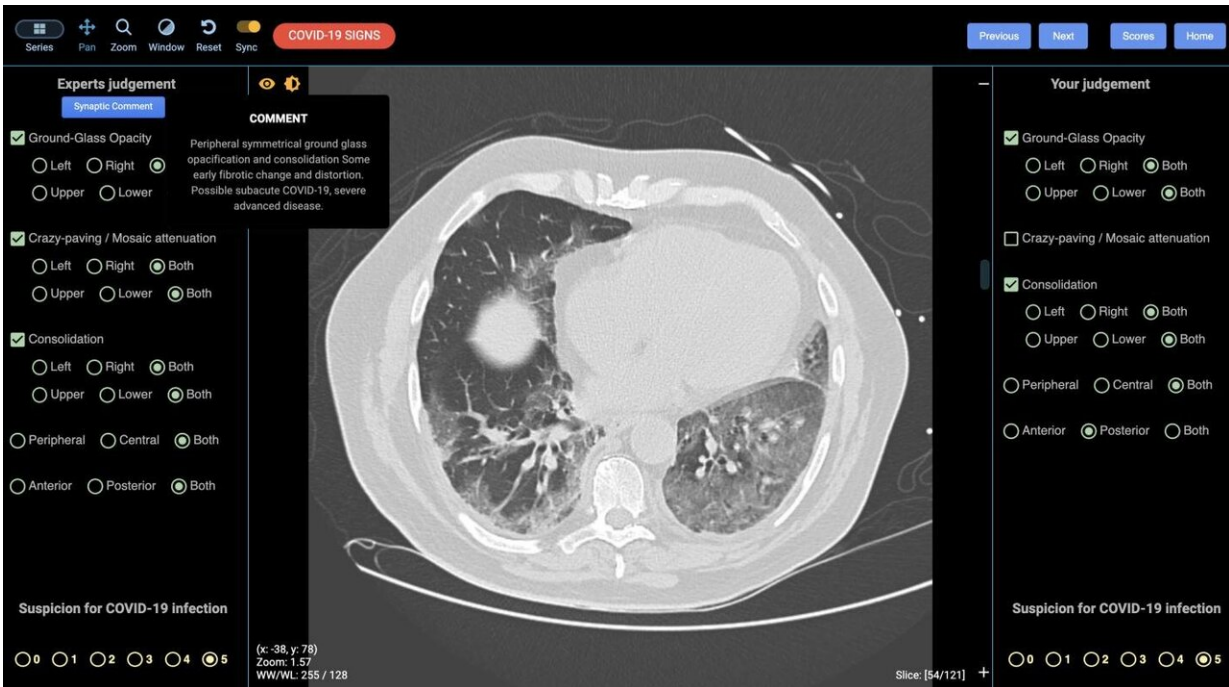Credit: DetectED-X

The world's only online image-based COVID-19 diagnosis improvement tool for healthcare workers is launched today by University of Sydney spinoff DetectED-X, drawing on its global experience and outcomes in breast cancer detection and patient cases from the coronavirus pandemic.

The cloud-based life-saving technology, developed by Australian-based radiation and imaging experts DetectED-X, will help doctors and radiologists diagnose cases faster and more accurately. Computed tomography (CT) lung scans, which produce cross-sectional images using X-rays and computers, have typically been used after swabs are taken, to identify the extent and location of the disease; the CT scans produce images within minutes and are also able to diagnose COVID-19 in the very early stages that escape detection with the nucleic acid tests.

As COVID-19 testing ramps up, the platform could facilitate rapid training where required—with modules able to be completed in as little as an hour—upskilling staff unfamiliar with lung radiology to prepare standardised reports for expert review.

DetectED-X's CovED platform, which can be accessed anywhere with an internet connection, is being provided for free by the award-winning startup and supported by healthcare experts and leading corporations globally. Medical radiation scientist, educator and CEO Professor Patrick Brennan, of the University of Sydney School of Health Sciences, Faculty of Medicine and Health, said early and better diagnosis would help relieve overburdened healthcare systems and save lives.

"The number of patients that are suffering from this life-threatening illness is fast outpacing the number of skilled staff required to accurately diagnose the required lung CT scans," Professor Brennan said.

An image from the DetectED-X platform of a lung with indications of severe COVID-19 Credit: DetectED-X

"Our platform does not replace expert medical and radiologic training but CovED provides an effective way to recognise rapidly the appearances of COVID-19, which could be critical in a situation of too many patients and not enough expert radiologists, with the modules taking just 1-2 hours to complete.

"This will be immediately crucial in developing countries, where numbers of radiologists are often insufficient—our tests will help people not only diagnose COVID-19 but also identify potentially life-threatening cases wherever they are."

CovED follows on from the highly successful BreastScreen Reader Assessment Strategy (BREAST) platform, created in 2010 at the

University of Sydney, which has been used internationally including in the United States and Europe. Last year the DetectED-X team was commissioned by the Australian government to deliver a similar solution for diagnosing dust disease with high resolution computed tomography (HRCT).

DetectED-X's approach, which includes algorithms to improve radiologist skills and identifying where errors were made on images in the online training sessions, has been shown to improve results significantly. The CovED platform uses CT images from cases with appearances of COVID-19 arising from Australia (Queensland, Victoria, NSW) and collaborators in Europe.

Through CovED, individual clinicians can assess their performance on images on screen, and receive immediate feedback including performance scores used in the industry. The image files personalised for each clinician are instantly returned showing any errors in their virtual diagnosis and the difficulty level is increased over time.

"The World Health Organisation called for solidarity in the global response to COVID-19; DetectED-X answered that call in collaboration with the University of Sydney and industry partners—including GE Healthcare, Volpara, World Continuing Education Alliance (WCEA) and Amazon.

"We are hugely grateful for the support of our industry partners GE Healthcare, Volpara, WCEA and Amazon in making this world-class platform available to help speed up the COVID-19 response," Professor Brennan said.

University of Sydney Vice-Chancellor and Principal Dr. Michael Spence said it was clear from the range of collaborators that global problems attracted global responses.

"We are calling on healthcare professionals, and [community members](#) alike, to make sure everyone knows this crucial new diagnostic tool to ramp up COVID-19 responses is freely available," Dr. Spence said.

Provided by University of Sydney