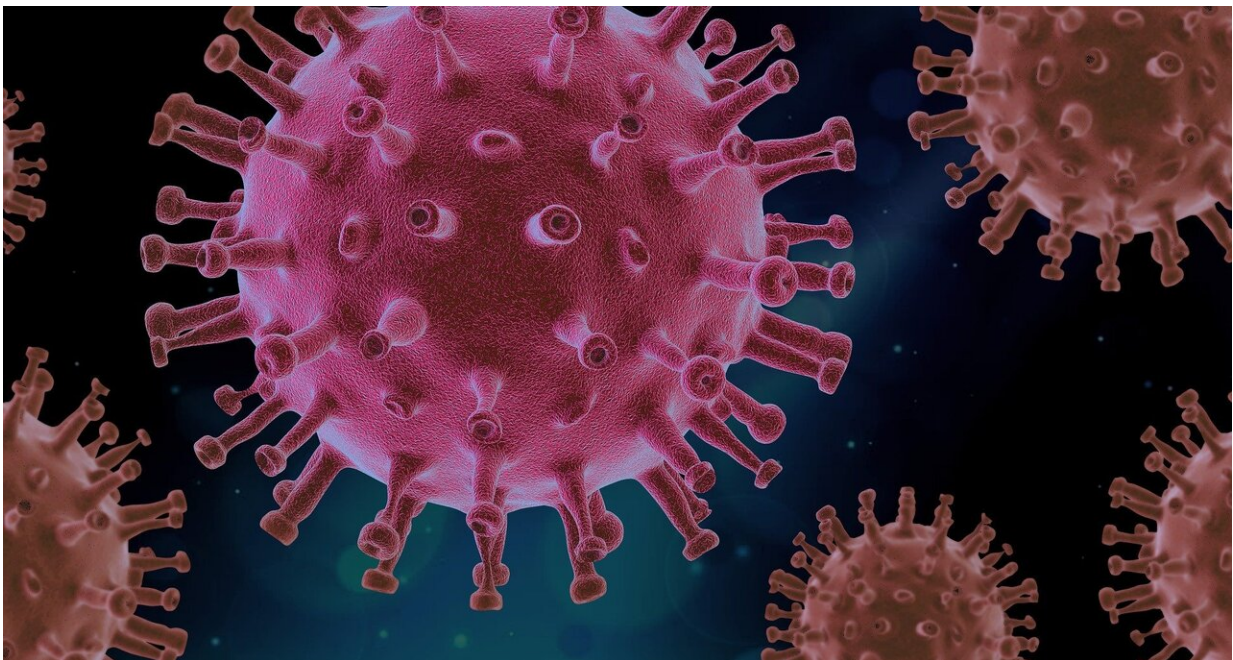# Researchers develop artificial intelligence for early prediction of COVID-19 from standard blood tests

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Credit: CC0 Public Domain

A group of researchers have developed artificial intelligence (AI) that accurately predicts COVID-19 infection from standard blood tests.

The AI solution has the potential to increase testing capacity and spot potential outbreaks before they develop.

It has been developed by the multi-institution research team Modeling and Prediction Pandemics (MaPP). They previously won the first prize at a week-long Coronahack event designed to bring together expertise from around the world to develop ideas to combat COVID-19. The team includes researchers from the universities of Brighton, Bristol, Glasgow, Lincoln, Sheffield and Oxford.

The research could help to address early prediction of outbreaks and the availability and speed of testing, which are two key challenges to combating a pandemic.

The team made use of anonymised patient data from a hospital in Sao Paulo and found they were able to accurately predict who had the virus, due to decreased levels of platelets and types of white blood cells.

Dr Bart Vorselaars, Senior Lecturer and Program Leader in Maths and Computer Science in the School of Maths and Physics at the University of Lincoln, is one of leading developers in the team. He said: "Using the AI prediction from standard blood test data provides a number of benefits including increased test capacity, lower costs and results that are both quicker and less susceptible to virus mutations than current rt-PCR tests. Because of this it could help to spot outbreaks before they develop."

The first results of these study were published in the journal *International Immunopharmacology* in June 2020, where Dr Vorselaars is one of the joint first authors.

Research is continuing at the Universities of Lincoln, Brighton, Glasgow, Sheffield and Oxford to cross-validate the findings from the Sao Paulo data with other data sources.

More information: Abhirup Banerjee et al. Use of Machine Learning

and Artificial Intelligence to predict SARS-CoV-2 infection from Full Blood Counts in a population, *International Immunopharmacology* (2020). DOI: 10.1016/j.intimp.2020.106705

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