

Robots vs. coronavirus: Automated delivery, cleaning and imaging against a pandemic

March 12 2020, by Melanie Sison



Technology is now being utilised for the detection, diagnosis and treatment of COVID-19. Credit: Pau Colominas, CC BY-SA 4.0.

Robots and artificial intelligence are being deployed across the globe in

the fight against the coronavirus pandemic.

Robotics are being used to sanitize hospitals, some of which use ultraviolet to clean, in a bid to minimize health workers' exposure to the coronavirus.

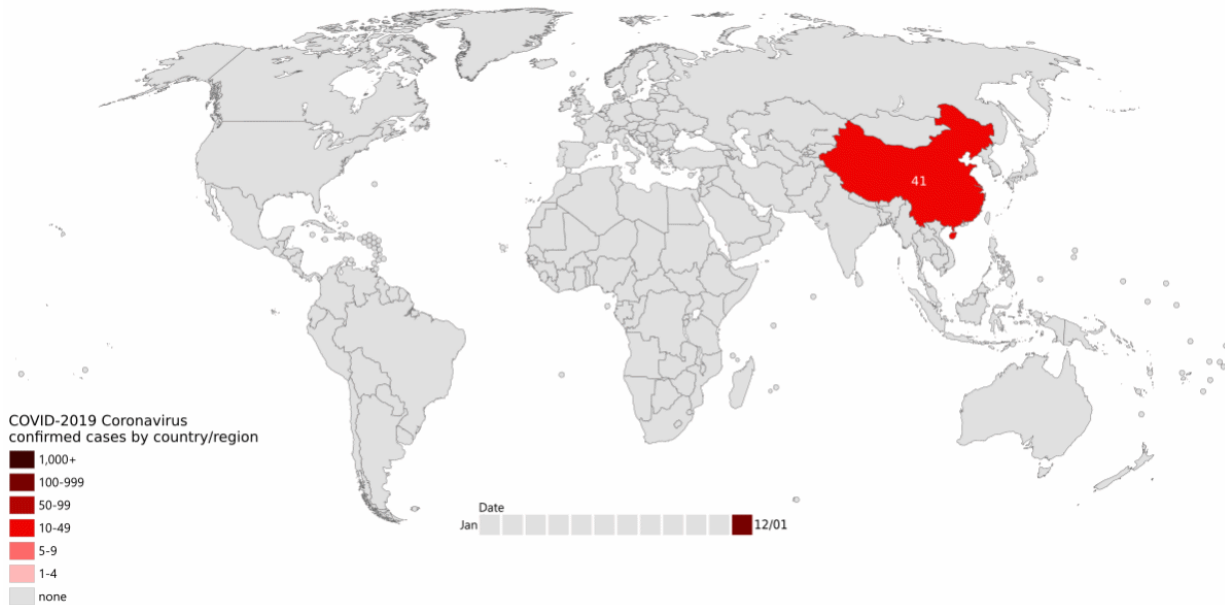
In China, ground zero of the viral outbreak, robots are being used in hospitals to deliver food and medication and take patients' temperatures. Drones are deployed to transport supplies, spray disinfectants and do thermal imaging.

Police officers were also recently issued smart helmets with facial recognition technology and an infrared camera that automatically detects body temperature.

Beyond checking body temperature, artificial intelligence is being used to diagnose SARS-CoV-2. Infervision, software that automatically detects symptoms via CT scan images, can make diagnoses quicker and reduce the risk of human error.

"This system helps doctors save valuable time and increase accuracy of judgment," says Ming-Ming Cheng, a professor at Nankai University's College of Computer Science, in China.

In addition to engineering innovations, [data science](#) is contributing to the efforts to contain the COVID-19 pandemic.



Confirmed COVID-19 cases as of 29 February. Credit: Metropolitan/Wikimedia Commons, CC BY-SA 4.0

Johns Hopkins University has a [global map](#) showing the number of confirmed COVID-19 cases across the world, based on official reports.

[Healthmap](#), an initiative of organisations such as Harvard Medical School, Boston Children's Hospital and Northeastern University, takes a similar approach, although it also factors in social media posts when [data mining](#).

[Event Horizon](#) features a mathematical model that predicts where the virus may spread based on international flight routes.

"Data can help in managing population movement, and contact and detect and quickly isolate sources. Big data and information engineers have been playing an important role in this regard," Gong Ke, president

of the World Federation of Engineering Organizations (WFEO), tells SciDev.Net.

Fears about the spreading coronavirus forced the inaugural World Engineering Day for Sustainable Development event, proposed by the WFEO, to be postponed.

Gong says engineers are working with scientists and doctors to develop more efficient methods for diagnosing the [coronavirus](#), as well as in testing potential treatments.



Robots that use ultraviolet technology to sanitise areas have been deployed in countries across the globe to minimise the exposure of patients and health workers to COVID-19. Credit: UVD Robots

"Solving the world's problems is an enormous collaborative undertaking involving both the public and private sectors and extending across disciplines, borders and demographics," says Kathy Renzetti, executive director of engineering advocacy group DiscoverE, based in the United States.

The internet has made collaboration significantly easier among key players. The [sequencing done by Chinese scientists](#), which was made publicly available just weeks after the outbreak in Wuhan, is being studied by medical researchers and doctors around the globe, in a bid to develop COVID-19 vaccines and treatments.

[Breakthrough genome sequencing](#) carried out in Brazil was shared on virological.org, a forum for the analysis and interpretation of virus molecular evolution and epidemiology.

Other researchers have made their work publicly available via online databases, such as [DrugVirus.info](#), a free platform that features information on existing compounds that may potentially be used for the treatment of COVID-19.

Drug repositioning, or drug repurposing, which seeks to find new therapeutic uses for existing drugs, is also being explored.

"It will take time to develop drugs against COVID-19. However, [the] drug repositioning approach will shorten it," explains Denis Kainov, associate professor at Norwegian University of Science and Technology's department of clinical and molecular medicine.

Provided by SciDev.Net

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