Singapore varsity joins global search for virus control steps

With the rapid spread of the novel coronavirus pandemic, which has infected more than 14 million globally to date, the world is grappling with control measures to stop the virus from further proliferation.

The issue will be addressed at this year's Paris Peace Forum (PPF) which brings together heads of state, government and international organisations, civil society and the private sector to conceive new forms of collective action for global challenges.

This year's forum in November is themed "Bouncing back to a better world" and will focus on projects and initiatives aimed at addressing COVID-19 and improving collective resilience of the world population.

International projects shortlisted by the PPF's Selection Committee which comprises renowned experts from key institutions of global governance will receive support for upscaling along four dimensions, namely policy and advocacy; communication and visibility; partnerships and funding; and organisation.

For its part, the Singapore Management University (SMU) will be submitting research initiatives currently undertaken by the SMU School of Law's Centre for AI and Data Governance (CAIDG) and the School of Information Systems (SIS).

In a media statement issued yesterday, SMU said the projects leverage the development of intelligent technology to improve social distancing measures and identify vulnerable populations, which may be challenging to manage by using physical human means.

It said CAIDG's research focuses on post pandemic eldercare. Using AI and big data innovation, it will provide a diagnostic risk modelling tool which helps predict population vulnerability for the elderly, especially in low and middle income countries.

"A feature of the failings in this recent pandemic healthcare has been the incapacity to adequately predict risk populations early enough for preventive strategies to be successfully directed toward their particular needs. In developed nations, migrant workers housed in confined conditions, and older people in institutional settings present examples of vulnerability where standard control responses such as social distancing have not been available due to realities of living conditions," the statement quoted Professor Mark Findlay, Professorial Research Fellow and Director, CAIDG, SMU School of Law, as saying.

"Whether it be in tracking/tracing strategies or containment surveillance, AI-assisted surveillance technologies and big data sharing have been key in the responses of China, Singapore and many developed nation states. The capacity of these technologies can be debated and the challenges they pose to personal data integrity and civil liberties questioned but combined with human-centred control through mass testing and manual tracing, AI-assisted technologies give benefit in a holistic control response." he added.

Through selection, adaptation, testing and evaluation of AI-assisted technologies, the diagnostic tool would be able to identify structural and demographic factors that contribute to the pandemic. Accordingly, risk strategies such as quarantines and incubation can then be devised towards containment.

The exercise will pilot in India and will thereafter be rolled out to other countries at later stages. CAIDG will be collaborating with the Centre for Internet and Society in Bangalore, and the Advanced Care Research Centre at the University of Edinburgh.

The statement said the SMU's second project submission will be the Singapore Spacer, a collaborative effort between the university's School of Information Systems and the National University of Singapore (NUS), and supported by private companies including Aviation Virtual, ESRI and SenzIQ.

The tool makes use of Wifi networks to accumulate information on the density of people in areas without disrupting living routines. Data collected allows the owners of facilities and public spaces to make principled choices about what actions to take to reduce the likelihood of person to person COVID-19 transmission. Policies to limit community spread can also be evaluated on their effectiveness based on this information. The Singapore Spacer system went live in April at the NUS campus.

"We believe that social distancing will remain a challenge for the next few years that every country will need to grapple with. Even after an effective vaccine has been found, we suspect safe social distancing policies will still continue to be in place for various reasons. Our ultimate goal is to provide a holistic solution that can be used across any campus and public space to help improve the safety and well-being of the users of those spaces." The statement quoted Professor Rajesh Krishna Balan, SMU's Associate Professor of Information Systems, as saying.

Established in September 2018 at the Singapore Management University School of Law, the CAIDG conducts independent research on policy, regulatory, governance, ethics and other issues relating to AI and data use. The centre is supported by the National Research Foundation and the Infocomm Media Development Authority of Singapore, and forms part of the national ecosystem driving the development of responsible AI in Singapore.

The centre has three goals, namely conduct academic research to inform AI and data governance in Singapore and beyond, with a particular focus on legislation and policy; convene and facilitate dialogue across academia and industry, especially between organisations in the Asia Pacific region; and share its research and learn from other organisations and the wider public.