University releases beta of COVID-19 exit strategy simulator

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A team at the University of Luxembourg's Interdisciplinary Centre for Security, Reliability and Trust (SnT), led by SnT Vice-Director Yves Le Traon, has developed an online tool to simulate COVID-19 exit strategy planning for close to 100 countries. The project is unique because it delivers a method to model the impact of different measures on the

spread of COVID-19 in a large number of countries around the world.

The tool uses machine learning techniques to analyse public data and deliver hypothetical projections of how different isolation measures will impact the spread of COVID-19. The intention is to make it possible for experts and governments around the world to analyse how various exit strategies will impact the spread of COVID-19 in a six-month time frame.

Four different activity areas are given as variables: workplaces, outdoor activities, public transportation, and retail. To generate its predictions, the tool uses data that is publicly available from the Google COVID-19 dataset, in particular mobility data as well as data from Johns Hopkins University. A user is able to understand how policies related to each activity impact the spread of the disease by selecting a country and changing the value that represents the intensity of any given isolation measure.

Yves Le Traon brought together two teams at SnT to collaborate on this project. The researchers are releasing a beta version of the instrument for two reasons. First, in order to provide this tool as quickly as possible for the benefit of the public. Second, as with any beta version, they have arrived at the point in the development process requires the feedback of users in order to refine the machine-learning algorithm that drives it.

The simulator is an ongoing project, as such it is updated gradually by the interdisciplinary team as they progress in their research. In the future, scientists consider adding customisation features based on datasets from the World Health Organisation (WHO), such as wearing masks and testing strategies.

"The simulator is a ground-breaking instrument with the potential to enhance the COVID-19 exit strategy planning of all included countries,"

said Prof. Stephane Pallage, rector of the University of Luxembourg. "COVID-19 requires agile solutions and Prof. Le Traon's team have reacted swiftly by disclosing a valuable technology that allows to model possible effects of public policy decisions as exit strategies are being planned and implemented."

"The saying 'knowledge is power' may be overused, but when it comes to the coronavirus it takes on new meaning as every piece of data has the potential to impact the lives of people around the world," said Prof. Yves Le Traon, Vice-Director of SnT. "Given the enormous amount of data to analyse, we have developed this tool to support exit strategy planning. As many countries in Europe are beginning to execute on their plans already, we wanted to release our work as soon as possible."

More information: The Adaptive Exit Strategies simulator is available here: serval-snt.github.io/covid19/

Provided by University of Luxembourg

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