

**Predicting the impact of policy decisions on the reduction of
COVID-19 cases detected using historical data**

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Abstract

Since the beginning of the year 2020, the world has been taken over by the claws of the Covid-19 pandemic. Since then the lives of the people living on the earth have not been the same. Large numbers of people have been dying on a daily basis and economies around the world have been collapsing. In this crisis, the best thing people can do to safeguard themselves is to get the vaccination and ensure proper health guidelines are followed on a day to day basis. Based on the nature of the virus, a person can be easily recovered given that proper medical care is provided. Around the world it is evident that the amount of deaths are skyrocketing whenever the health services of a country are overloaded. Governments therefore take a lot of measures to ensure that the rate of infections does not increase in a drastic manner. This is also famously known as flattening the curve. In order to flatten the curve the governments impose and enforce different health measures from curfews to mandating wearing masks. When imposing these restrictions, it is imperative to ensure that unnecessary damage is not done to the economy. This means that the lockdowns need to be done in a scientific manner.

The goal of this research is to create a tool that can be used to determine the effectiveness of a lockdown beforehand so that only the necessary restrictions can be imposed in order to reach the target virus control. By the conclusion of the research we were able to come up with a solution using a multivariate time series forecasting model based on a bi-directional LSTM. The created solution was 91% accurate in forecasting the future of a virus spread based on lockdown details being imposed.

Subject descriptors : I.2 - Artificial Intelligence, Neural Networks

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