National University of Computer & Emerging Sciences

Development of a Spatial and Temporal based COVID-19 Predictor for Pakistan

Abstract

Pakistan has seen a large-scale spread of coronavirus (COVID-19) with unusual patterns across the country. Therefore, our motivation is to perform analysis and forecasts in both space and time to provide a clear picture of the most affected regions of the country using Machine Learning. Such research would provide decision-makers with enough time to intervene in local policy.

Methodology

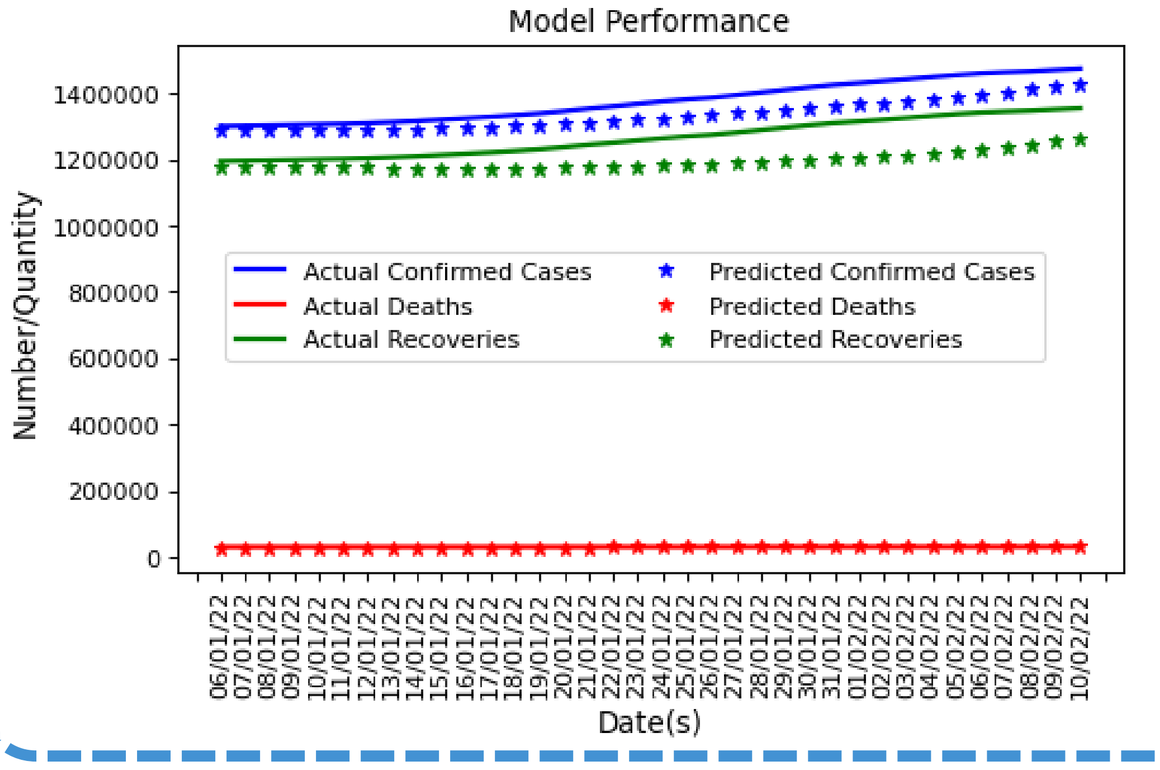
In this study, we collected data from JHU, OWID, IHME and Time&Date public data repositories, followed by data analysis performed using statistical and visualization tools. Later, for the forecasting of the number of deaths, confirmed and recovered coronavirus cases on provincial basis we used ANN, CNN and LSTM. These Deep Learning models were trained on the data points from earlier days to forecast how many confirmed cases, fatalities, and recovered cases will occur in each province after a week.

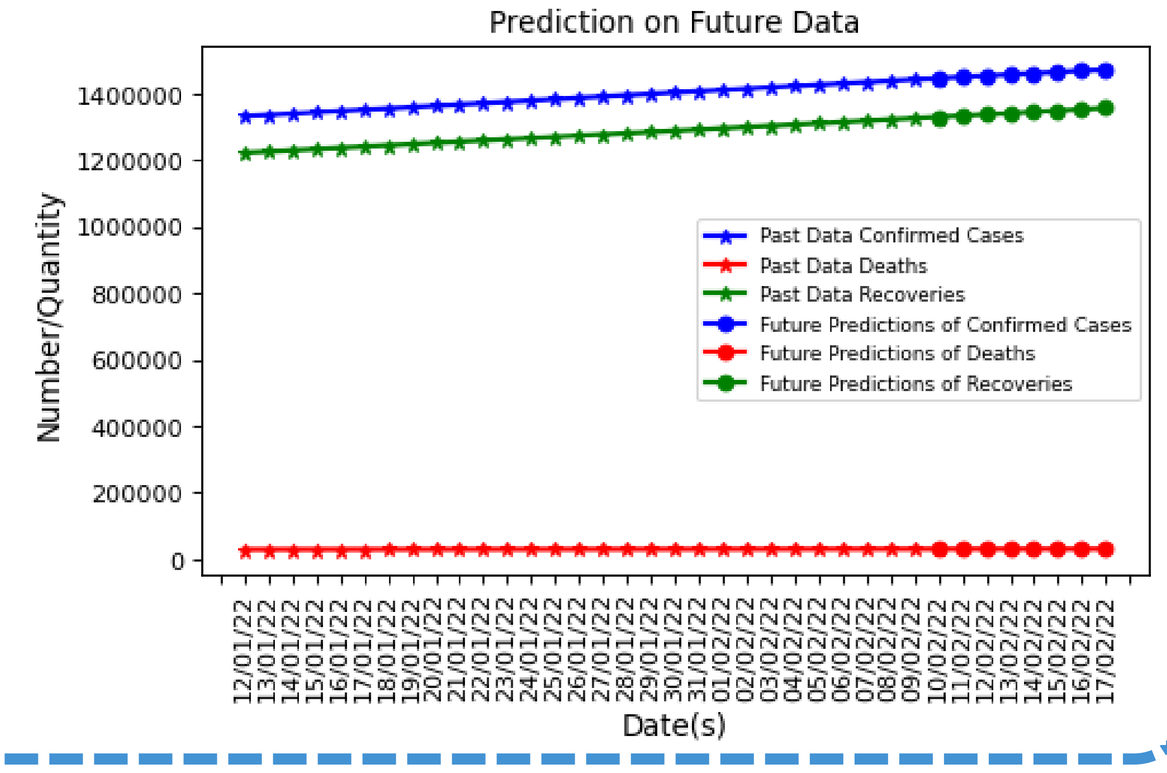
Technologies Used

Power BI, python, pandas, NumPy, jupyter, TensorFlow

Project WorkFlow

Results





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