Geospatial Clustering and Forecasting for Global Hotspots

Project Abstract

by

CMPE 295B

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ABSTRACT

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COVID-19 has made a global disruption in every aspect of our social fabric. The pandemic has taken a toll on the healthcare system, increasing the need for acute care that has overtaxed some hospitals. The lack of public health information systems impacted the balancing and distribution of the critical resources from areas of surplus to undersupply.

The shortage of resources and the incremental uncertainty in the incoming patient count does not allow for a stable servicing of the hospitals. On the other hand, social media accounts for an excess of information, including vital updates on the pandemic and false data. The incorrect details mislead the public into a state of turmoil, which calls for a single source of information to address these problems.

A predictive analysis-based web application that can support the hospitals with the surges in patient inflow, assist the public users in finding treatment and predict the hotspots based on the existing and historical admittance and infections data would be one of the project's goals. Clustering hotspot regions based on the environmental, COVID-19 cases similarities, and accurate social media data would help identify the patterns for applying control policies. A comprehensive suite of technologies along with cutting edge methodologies of clustering and forecasting algorithms will be implemented on Google Cloud Platform.