



Contribution ID: 39

Type: **not specified**

Interactive tool for clustering and forecasting patterns of Taiwan COVID-19 speared

Tuesday, 14 September 2021 17:25 (20 minutes)

The COVID-19 data analysis is essential for policymakers in analyzing the outbreak and managing the containment. Many approaches based on traditional time series clustering and forecasting methods such as hierarchical clustering and exponential smoothing have been proposed to cluster and forecast the COVID-19 data. However, most of these methods do not scale up with the high volume of cases. Moreover, the interactive nature of the application demands further critically complex yet effective clustering and forecasting techniques. In this paper, we propose a web-based interactive tool to cluster and forecast the available data on Taiwan COVID-19 confirmed infection cases. We apply the Model-based (MOB) tree and domain-relevant attributes to cluster the dataset and display forecasting results using the Ordinary Least Square (OLS) method. In this OLS model, we apply a model produced by the MOB tree to forecast all series in each cluster. Our user-friendly parametric forecasting method is computationally cheap. A web app based on R's Shiny App makes it easier for the practitioners to find clustering and forecasting results while choosing different parameters such as domain-relevant attributes. These results could help determine the spread pattern and be utilized by researchers in medical fields.

Keywords

ime series, Clustering, Forecasting, Web-based tool, Shiny, Model-based partitioning tree, COVID-19, pandemic

Special/invited session

Statistics in practice - Data mining

Primary authors: ASHOURI, Mahsa; Prof. PHOA, Frederick Kin Hing (Academia Sinica)

Presenter: Prof. PHOA, Frederick Kin Hing (Academia Sinica)

Session Classification: Mining

Track Classification: Mining