

Interactive visualization for time series clusters with domain-relevant attributes

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Abstract

We propose a web-based interactive tool, called the "model-based time series clustering tool", for visualizing the results of clustering large collections of time series with cross-sectional domain-relevant attributes. While the clustering algorithm in the background is automated, our visualization tool allows users to modify various parameters that lead to different cluster definitions and numbers of clusters. We illustrate the tool by applying it to an air quality dataset (PM2.5 index) collected in different monitoring stations in Taiwan. Our web-based tool, based on R's Shiny App, helps visualize various characteristics of time series, such as temporal patterns and missing values, as well as clustering attribute groupings.

Keywords: Time series, clustering, web-based tool, Shiny, model-based partitioning tree, air quality