Tensor based visual analytics for multidimensional time-series data

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Abstract

Analysis of multidimensional time series data is one of the important topics in the study of various phenomena occurring in the real world. One of the models that represent such data is the tensor data model, and analysis approaches that utilize this data model have been proposed in various data analysis scenarios. However, such analysis may causes problems in the scale of the dataset and interpretation of the results. In this talk, I will introduce a visual analytic method for exploratively analyzing spatio-temporal features inherent in large-scale multidimensional time series data represented as tensor data by effectively combining simple tensor data manipulations, dimensionality reduction, and data visualizations. And I also show some examples of supercomputer hardware log data analysis as 3rd order tensor, and weather ensemble data analysis as 4th order tensor data.