

Mining and Forecasting of Big Time-series Data

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Abstract—Given a large collection of time series, such as motion capture sensors and automobile trajectories, how can we efficiently and effectively find typical patterns? How can we statistically summarize all the sequences, and achieve a meaningful segmentation? What are the major tools for forecasting and outlier detection? Time-series data analysis becomes of increasingly high importance, thanks to the decreasing cost of hardware and the increasing online processing abilities. The objective of our project is to develop fundamental technologies for the real-time modeling and forecasting of big time-series data. We provide the intuition behind these powerful technologies, as well as to introduce case studies that illustrate their practical use.