

Abstract

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Density-Based Clustering of Spatio-Temporal Data

Moving objects are one of many topics that have large data sets generated rapidly and continuously by spatial technologies. This thesis focuses on the data mining of an example of such large data sets, spatio-temporal data. This research aims to predict future motion of moving objects regarding their location and time of arrival. A spatio-temporal algorithm is developed and presented which clusters sub-trajectories into similar groups taking into consideration the time dimension time-aware, using a density based clustering technique. The presented algorithm partitions trajectories into smaller sub-trajectories then groups these segments based on a density-based clustering technique. Four different experiments are carried out, each one with a different data set. The results of each experiment are analyzed and predictions are made for the motion of each data set.