Abstract

The comprehension of phenomena related to movement – not only of people and vehicles but also of animals and other moving objects – has always been a key issue in many areas of scientific investigation or social analysis. Many applications track the movement of mobile objects, using location-acquisition technologies such as Global Positioning System (GPS), Global System for Mobile Communications (GSM) etc., and it can be represented as sequences of time-stamped locations. In this paper, we analyze the trajectories of moving vehicles and we develop an algorithm for mining the frequent patterns of Trajectory data. We use the extensions of sequential pattern mining to spatiotemporal annotated sequential patterns. The description of frequent behaviors in terms of both space (i.e., the regions of space visited during movements) and time (i.e., the duration of movements). In this paper an efficient trajectory pattern mining is proposed by incorporating three key techniques. In this paper we have examined ways of
partitioning data for trajectory pattern discovery. Our aim has been to identify methods that will enable efficient counting of frequent sets in cases where the data is much too large to be contained in primary memory, and also where the density of the data means that the number of candidates to be considered becomes very large. Our starting point was a method which makes use of an initial preprocessing of the data into a tree structure (the P-tree) which incorporates a partial counting of support totals.

**Reference**

- Kuipers, G. and Othman W. 2007. Trajectory Databases: Data Models, Uncertainty and Complete Query Languages. ICDT Springer Verlag, LNCS 4353: 224-238

**Index Terms**

Computer Science  
Data Mining
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