

Dynamic Frequent Trajectory Mining Algorithm Based on Confidence of Suffix Subsequence

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Abstract

With the popularization of smart devices and the continuous development of wireless communication technology, a large amount of trajectory data is recorded in wireless networks, and frequent item mining for trajectory data has become a research hotspot. In order to rapid update frequent trajectory set when new data is added to the original trajectory database, and to solve the problem that trajectory database occupies a large amount of storage space, we propose a new dynamic PrefixSpan algorithm based on the confidence of suffix subsequence (CSS-PrefixSpan). This algorithm makes full use of the information of the frequent trajectory set and estimates the support of infrequent trajectory by using the confidence of infrequent trajectory suffix subsequence. When incremental trajectory data is added to the original trajectory database, CSS-PrefixSpan can dynamically update frequent trajectory set and no longer need to store the original trajectory data after mining frequent trajectories. Through two trajectory dataset mining experiments, the accuracy of the support estimation and the effectiveness of proposed algorithm are verified.

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