Chapter XII

Conclusions and Future Work

Association rule mining in spatial databases and temporal databases have been studied extensively in data mining research. Most of the research studies have found interesting patterns in either spatial information or temporal information, however, few studies have handled both efficiently. Meanwhile, developments in spatio-temporal databases and spatio-temporal applications have prompted data analysts to turn their focus to spatio-temporal patterns that explore both spatial and temporal information.

In this book, we have examined some issues in temporal mining and suggested some improvements to existing sequence mining and periodic pattern mining algorithms. We introduced a class of patterns for temporal databases called dense periodic patterns, and described a periodicity detection algorithm to efficiently discover short period patterns that may exist in only a limited range of the time series. We discussed an I/O-efficient algorithm for mining frequent sequences as well as incremental update. We also described a new class of patterns called progressive confident rules that capture the state change of objects that leads to a certain end state with increasing confidence.

In addition, we have introduced new classes of spatio-temporal patterns and described efficient and effective algorithms for mining these spatio-temporal
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Renxia Wan, Yuelin Gao and Caixia Li (2012). *International Journal of Data Warehousing and Mining* (pp. 82-107).
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