

Applying Sequential Pattern Mining Technologies for Behavior Change Detection

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ABSTRACT

To satisfy customer's requirements and increase competition in market, it is critical for an enterprise to understand changes of customer behavior. If managers can understand changes of customer behavior, they can retain customers through providing appropriate products and services to satisfy their needs. Although many researches have focused on knowing the regularity of customer's purchase behavior, little attention has been paid to mine change of sequence in databases collected over time. Therefore, the objective of this research is to develop a systematic method to discover the change of customer behavior, and provide an implementation case to demonstrate the feasibility of the proposed method. The proposed method uses sequential pattern mining to explore the change of behavior sequence in different two time-periods. First, the AprioriAll algorithm is used to discover all sequential patterns in different time-periods. Then sequential patterns are clarified as one of three change types (emerging sequential patterns, unexpected sequence changed and added/perished sequential patterns) through proposed sequential pattern matching method to understand the degree of change. Finally, a set of sequential patterns with significant change are retrieved. With the useful information, managers can make better business decision.

Keyword: Data Mining, Sequential Pattern Mining, Change Mining