

Developing an Optimal Fuzzy Association Rule Algorithm

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ABSTRACT

Association rule is one of the most often discussed data mining technology. It is used in market basket analysis to know the regularity of customer's purchase behavior. Although association rule is popular, it is limited to the item with categorical value. To solve the difficulty, this research develops an optimal fuzzy association rule algorithm so that the items with numerical data values can also be applied. First, linguistic sets of each attribute are encoded as genes of a chromosome. The optimal fuzzy membership functions are generated automatically after a series of genetic evolution. Then, the fuzzy transaction data-mining algorithm (FTDA) is used to produce fuzzy association rules. Finally, testing data is used to evaluate the accuracy of generated fuzzy association rules. Through a series of experiments, it is shown that the algorithm is suitable for items with numerical data and performs high forecast accuracy.

Keyword: Data Mining, Association Rule, Genetic Algorithm, FTDA Algorithm