

博士论坛

客户行为的有效聚类

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收稿日期 2009-10-12 修回日期 2009-11-27 网络版发布日期 2010-2-2 接受日期

摘要 对客户交易数据进行聚类是客户行为分析的一个重要手段。针对客户交易数据维数高的特点, 提出了基于EMD和K-means的顾客行为聚类算法。首先利用EMD和自底向上分段算法实现交易数据序列维度的约简, 再利用K-means算法完成降维后序列的聚类, 最后利用每个类别中购买率较高的商品作为该类的描述, 为商家提供促销依据。该聚类算法一方面可以有效实现客户行为的聚类, 另一方面, 由于算法对交易数据序列进行了降维处理, 节约了一定的存储空间。

关键词 [经验模态分解方法](#) [自底向上算法](#) [K-means算法](#) [趋势提取](#) [客户行为聚类](#)

分类号 [TP181](#)

Effective algorithm to cluster customers' actions

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Abstract

Clustering customers' transaction data is an important analysis means of customers' behavior.As customers' transaction data have high dimension, the clustering algorithm based on Empirical Mode Decomposition (EMD) and K-means is implemented to cluster the customers' actions in supermarkets, that is, employ the EMD and bottom-up algorithms to realize dimension reduction, and further use K-means algorithm to support effective clustering on data sequences, which have fewer dimensions. Customers are divided into different categories (or sub-market) by means of clustering customers' transaction data.Each sub-market is then described by the commodities which are purchased with higher rates, so as to make respective promotions and advertisements.The clustering algorithm proposed in this paper can effectively cluster customers' behavior, and as the algorithm has dealt with dimensionality reduction to a sequence of transaction data, this can save a certain amount of storage space.

Key words [Empirical Mode Decomposition \(EMD\)](#) [bottom-up algorithm](#) [K-means algorithm](#) [trend extraction](#) [clustering customers' actions](#)

DOI: 10.3778/j.issn.1002-8331.2010.04.004

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