

基于人工蜂群的项聚类推荐算法

郭 磊, 胡 燕

(武汉理工大学 计算机科学与技术学院, 湖北 武汉 430070)

摘 要: 旨在改善协同过滤推荐算法中暴露的推荐准确性和实时性问题, 提出基于人工蜂群的项聚类推荐算法. 在数据处理过程中利用人工蜂群聚类算法对项目聚类, 从相似性最高的几个聚类中搜索目标项目最近邻居, 以此剔除相似性较低项目的干扰提高推荐准确性, 同时也大大缩小项目空间, 提高了推荐实时性; 在评分预测过程中采用时间权重函数优化传统评分预测模型以提高评分预测的准确性, 从而提高推荐准确性. 实验结果表明, 推荐的准确性和实时性得到了有效提高.

关键词: 协同过滤; 推荐算法; 人工蜂群; 时间权重函数

Item-clustering Recommendation Algorithm

Based on Artificial Bee Colony

GUO Lei, HU Yan

(Wuhan University of Technology, Institute of Computer Science and Technology, Wuhan 430070, China)

Abstract: Aiming at improving the accuracy and real-time problem exposing in collaborative filtering recommendation algorithm, A new Item-clustering recommendation algorithm based on artificial bee colony algorithm is proposed. In the process of data processing, the artificial bee colony clustering algorithm is used to cluster the items, Search for the nearest neighbors of the target item from the highest similarity of several clusterings, in order to eliminate the interference of similar items to improve the accuracy of the recommendation, At the same time, it also greatly reduces the item space and improves the real-time recommendation; In the process of scoring, the time weighting function is used to optimize the traditional score prediction model in order to improve the accuracy of the prediction, so as to improve the accuracy of recommendation. The experimental results show that the accuracy and real-time performance are improved effectively.

Key words: collaborative filtering; recommendation algorithm; artificial bee colony; time weighting function

作者简介:

郭 磊 男, (1991-), 硕士研究生. 研究方向为数据挖掘. E-mail:425003928@qq.com.

胡 燕 女, (1965-), 教授, 硕士生导师. 研究方向为智能信息检索.