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一种利用协同过滤预测和模糊相似性改进的基于内容的推荐方法

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摘要 [目的] 基于模糊相似性的协同过滤预测和多样性选择算法对基于内容的推荐方法进行改进，提高推荐质量。[应用背景] 基于内容过滤的推荐系统（CB-RS）目前已经有比较成功的应用。但是，推荐的多样性、项目特征的表示、用户偏好的建模仍然是基于内容推荐的关键。[方法] 对用户特征提出采用一种新的模糊化表示方法，并根据此特征表示进行用户的相似性计算，在此基础上整合协同过滤的多样性预测，对基于内容的推荐方法进行改进。[结果] 通过实验，该推荐方法在平均绝对误差、覆盖率以及多样性三方面明显优于当前流行的三种解决方案。[结论] 推荐方案在一定程度上能够提高推荐质量，同时增强推荐的多样性。

关键词： 推荐系统　推荐多样性　模糊CF-CBF　模糊相似性度量

Abstract： [Objective] The authors improvecontent-based recommendation method through Fuzzy similarity-based collaborative filtering prediction and diversity selection algorithm to raise the recommendation quality. [Context] There are many successful applications of Content Based Recommender Systems (CB-RS).Recommendation diversity, representation of items as well as users' preference modeling are still critical parts in this field. [Methods] An effective collaborative Content-Based Filtering (CBF) is developed by introducing an item representation scheme, and measuring similarity based on the scheme, and fuzzy similarity measure and fuzzy-CF into the fuzzy-CBF with diversity, in order to improve content-based recommendation method. [Results] Experiment results show that the proposed hybrid scheme (fuzzy CF-CBF) is better than the other three popular schemes in Mean Absolute Error(MAE), coverage and diversity. [Conclusions] The proposed scheme improves the recommendation quality, while enhances the recommended diversity.

Keywords： Recommender system, Recommendation diversity, Fuzzy CF-CBF, Fuzzy similarity measures

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