

Novel Recommender Systems Using Hybrid CF and Social Network Information

Authors : Kyoung-Jae Kim

Abstract : Collaborative Filtering (CF) is a popular technique for the personalization in the E-commerce domain to reduce information overload. In general, CF provides recommending items list based on other similar users' preferences from the user-item matrix and predicts the focal user's preference for particular items by using them. Many recommender systems in real-world use CF techniques because it's excellent accuracy and robustness. However, it has some limitations including sparsity problems and complex dimensionality in a user-item matrix. In addition, traditional CF does not consider the emotional interaction between users. In this study, we propose recommender systems using social network and singular value decomposition (SVD) to alleviate some limitations. The purpose of this study is to reduce the dimensionality of data set using SVD and to improve the performance of CF by using emotional information from social network data of the focal user. In this study, we test the usability of hybrid CF, SVD and social network information model using the real-world data. The experimental results show that the proposed model outperforms conventional CF models.

Keywords : recommender systems, collaborative filtering, social network information, singular value decomposition

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