

عنوان مقاله:

A New Similarity Measure Based on Item Proximity and Closeness for Collaborative Filtering Recommendation

محل انتشار:

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خلاصه مقاله:

Recommender systems utilize information retrieval and machine learning techniques for filtering information and can predict whether a user would like an unseen item. User similarity measurement plays an important role in collaborative filtering based recommender systems. In order to improve accuracy of traditional user based collaborative filtering techniques under new user cold-start problem and sparse data conditions, this paper makes some contributions. Firstly, we provide an exposition of all-distance sketch (ADS) node labelling which is an efficient algorithm for estimating distance distributions; also we show how the ADS node labels can support the approximation of shortest path (SP) distance. Secondly, we extract items' features and accordingly we describe an item proximity measurement using ochiai coefficient. Third, we define an estimation of closeness similarity, a natural measure that compares two items based on the similarity of their features and their rating correlations to all other items, then we describe our user similarity model. Finally, we show the effectiveness of collaborative filtering recommendation based on the proposed similarity measure on two datasets of MovieLens and FilmTrust, compared to state-of-the-art methods.

کلمات کلیدی:

collaborative filtering, recommender system, user similarity, Closeness similarity, All-distance sketch

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