

An implicit rating based product recommendation system

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ABSTRACT

In the information overloaded age, there are so many options for users to choose. Users usually hope to find what they want without wasting their time and also enable sellers to provide buyers with the items they are likely to purchase. To solve this burden, recommendation systems have emerged in response to this problem. Collaborative filtering, one of the most popular approach for recommendation systems, relies on users whose preferences are similar to those of the target user and recommends items that users have liked. However, explicit feedback is not always available in practice. To solve the above problem, this thesis develops a recommendation system that can derive user preference ratings from users' purchase history without any explicit feedback provided by the user. If a user did not have any transaction data which call cold start problem, demographic data will be used to compare with old users and take their user preference as new user preference. In addition, this research also considers the time interval between purchased time and current time and item relationship and use max-min fuzzy theory to combine these factors. Through the experiment, the proposed user preference rating approach is better than the one only considering the purchase frequency of an item. The experiment also shows that the performance of considering the time interval between purchased time and current time as well as item relationship is also better than the one without considering them.

Keyword: Recommendation systems 、 Implicit feedback 、 Collaborative filtering 、 Item association