

A New Similarity Measure for Collaborative Filtering in Recommender Systems

Mojtaba Kazemi

Sasan H. Alizadeh

Faculty of Computer and Information Technology Engineering, Qazvin Branch Islamic Azad University, Qazvin, Iran

ABSTRACT

Recommender systems are divided into three categories: demographic, content based and collaborative filtering. Collaborative filtering based neighborhood as one of the important classes of CF, have widespread use in the commercial field. The key of this approach is to find similar users or items using user-item rating matrix to be able to provide appropriate recommendation for users. In this article, we're presents a new user similarity measure for neighborhood based CF to improve the recommendation performance when only few ratings are available to calculate the similarities between users. So in article the probabilistic approach has been proposed for modeling a user similarity measure between two users. In order to demonstrate effectiveness of the measure, we compared performances of neighborhood based CFs using state-of-the-art similarity measures with the proposed measured based CF. The results of recommendation in different evaluation show that proposed measure outperforms existing measures based CFs in sparse data.

Keywords: Recommender Systems, Collaborative Filtering (CF), Neighborhood Based CF, User Similarity measure, Sparse Data.