Abstract

Collaborative filtering (CF) is a technique to carry out automatic suggestions for a user based on the view of other users with similar taste. Most of the CF algorithms do not consider the existent duality between users and items, taking into account only the similarities between users or only the similarities between items. Though, there are some problems such as data sparsity which limit its further progress. To deal with the data sparsity problem a novel collaborative filtering recommendation algorithm is proposed based on biclustering. By taking into consideration the biclustering method to carry out clustering of rows and columns at the same time, the algorithm is able to group similarities between users and items. The paper also presents the comparison of user-based clustering and biclustering. In order to evaluate the proposed methodology, the Web Service (WSDL) dataset is applied to it which contains user’s ratings to a large set of web services. The results indicate that the proposed methodology is able to provide useful recommendations for the users, especially in the presence of sparse data. Furthermore, the robustness of the proposed approach increases the data sparsity and the number of users that outperforms other methodologies for CF.
References


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Index Terms

Computer Science

Algorithms

Keywords

Biclustering, Collaborative filtering, Recommendation system, Web service.