

عنوان مقاله:

An Optimal Similarity Measure for Collaborative Filtering Using Firefly Algorithm

محل انتشار:

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نویسندگان:

Fatemeh Shomalnasab - *Department of Computer Engineering, College of Computer, Hamedan Science and Research Branch, Islamic Azad University, Hamedan, Iran*

Mehdi Sadeghzadeh - *Department of Computer Engineering, Mahshahr Branch, Islamic Azad University, Mahshahr, Iran*

Mansour Esmaeilpour - *Department of Computer Engineering, Hamedan Branch, Islamic Azad University, Hamedan, Iran*

خلاصه مقاله:

Recommender Systems (RS) provide personalized recommendation according to the user need by analyzing behavior of users and gathering their information. One of the algorithms used in recommender systems is user-based Collaborative Filtering (CF) method. The idea is that if users have similar preferences in the past, they will probably have similar preferences in the future. The important part of collaborative filtering algorithms is allocated to determine similarity between objects. Similarities between objects are classified to user-based similarity and item-based similarity. The most popular used similarity metrics in recommender systems are Pearson correlation coefficient, Spearman rank correlation, and Cosine similarity measure. Until now, little computation has been made for optimal similarity in collaborative filtering by researchers. For this reason, in this research, we propose an optimal similarity measure via a simple linear combination of values and ratio of ratings for user-based collaborative filtering by the use of Firefly algorithm; and we compare our experimental results with Pearson traditional similarity measure and optimal similarity measure based on genetic algorithm. Experimental results on real datasets show that proposed method not only improves recommendation accuracy significantly but also increases quality of prediction and recommendation performance.

کلمات کلیدی:

Recommender System, Collaborative Filtering, Similarity Measure, Firefly Algorithm

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