Collaborative Filtering Algorithm Based on Rating Difference and User Interest

MICANS INFOTECH

ABSTRACT

➢ Collaborative filtering algorithm is one of widely used approaches in daily life, so how to improve the quality and efficiency of collaborative filtering algorithm is an essential problem. Usually, some traditional algorithm focuses on the user rating, while they don't take the user rating differences and user interest into account

➢ However, users who have little rating difference or have a similar interest may be highly similar. In this paper, a collaborative filtering algorithm based on scoring difference and user interest is proposed.

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- Firstly, a rating difference factor is added to the traditional collaborative filtering algorithm, where the most appropriate factor can be obtained by experiments. Secondly, calculate the user's interest by combining the attributes of the items, then further calculate the similarity of personal interest between users.

- Finally, the user rating differences and interest similarity are weighted to get final item recommendation and score forecast. The experimental results on data set shows that the proposed algorithm decreases both Mean Absolute Error and Root Mean Squared Error, and improves the accuracy of the proposed algorithm.

EXISTING SYSTEM

▸ Firstly, a rating difference factor is added to the traditional collaborative filtering algorithm, where the most appropriate factor can be obtained by experiments. Secondly, calculate the user's interest by combining the attributes of the items, then further calculate the similarity of personal interest between users.

▸ Finally, the user rating differences and interest similarity are weighted to get final item recommendation and score forecast. The experimental results on data set shows that the proposed algorithm decreases both Mean Absolute Error and Root Mean Squared Error, and improves the accuracy of the proposed algorithm.

DISADVANTAGES

▸   The idea of user-based collaborative filtering algorithms is to find out the users with similar ratings to the target users according to historical data and its rating data, and to take them as neighbors, then organize them into a sorted directory according to their favorite objects.

▸ The core of collaborative filtering algorithm is to calculate the similarity between users. So Increasing accuracy for the similarity calculation leads to a more effective and efficient recommendation system.

PROPOSED SYSTEM

➤ users who have little rating difference or have a similar interest may be highly similar. In this paper, a collaborative filtering algorithm based on scoring difference and user interest is proposed.

➤ Firstly, a rating difference factor is added to the traditional collaborative filtering algorithm, where the most appropriate factor can be obtained by experiments. Secondly, calculate the user's interest by combining the attributes of the items, then further calculate the similarity of personal interest between users.

➤ Finally, the user rating differences and interest similarity are weighted to get final item recommendation and score forecast.

ADVANTAGES

- many scholars have proposed to improve the algorithm based on different perspectives: introduced a novel entropy-based neighbor selection approach, which assigned a degree of uncertainty for each user, and the approach solves the optimization problem of gathering the most similar entities with a minimum entropy difference within a neighborhood.

- proposed the trapezoidal fuzzy scoring model to calculate the similarity between users in the model, which optimized the data sparse problem and reduced the running time.

HARDWARE REQUIREMENTS

- Processor   :Intel Pentium IV 1GHz

- RAM   :256MB (Min)

- Hard Drive   :5GB free space

- Monitor   :1024 * 768, High Color inch

- Mouse   :Scroll Mouse(Logitech)

- Keyboard   :104 keys

SOFTWARE REQUIREMENTS

- OS   :   Windows XP/7/8

- Front End   :   Visual Studio 2010/ netbeans 7.1

- Back End   :   SQL Server 2005/ heidisql 3.2

- Browser   :   Any Web Browser

CONCLUSION

- Through several experimental schemes, this paper analyzes the performance of collaborative filtering recommendation algorithm based on user rating difference and user interest.

- Firstly, the design ideas and algorithm steps are introduced, and then rating difference factor and user interest are taken into the traditional similarity algorithm. Secondly, several parameters of the algorithm are determined through several experiments. Finally, the improved algorithm proposed in this paper is compared with the traditional one

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