Abstract

Nowadays, Recommendation System plays an important role in the e-Commerce business. The system recommends the interested items to the customers by their historical record or the preferences of other customers with similar taste. As the personalization service is built to present the users with highly relevant set of items, the customer loyalty of the web retailer companies can be improved.

Collaborative Filtering (CF) is one of the most popular personalization technology applied on the recommendation system. In the traditional CF method, users who shared the common movies with active user will all be regarded. In this case, only the most popular items will be selected. And as all neighbor users need to be searched, the process time takes very long and prediction accuracy will not be ideal since one or two common movies cannot reflect the user taste.

The system we proposed here is the Genetic Algorithm (GA) – based Recommendation System applying on movie rating records by using CF method. After series of experiments, we found that the performance of recommendation system by using Pearson Algorithm is higher but lower prediction accuracy, on the contrary, the fitness of our proposed system is much higher although the performance is lower.

During this research, we would also look into the current recommendation system technology, applications and their problems scope. By measuring the feature weights, we identified that the user profile features are more relevant to the customer's taste. On the other hand, we can gain the neighbor sets by similarity measure, so we can get a good prediction as to improve the performance of current recommendation system.

Keywords: *Recommendations, Genetic Algorithm, Collaborative Filtering, Feature Selection, Feature Weight*