

Abstract

Recommender systems using collaborative filtering method are mainly used to create a rating prediction model in which the model itself has a cold start problem. The cold start problem is a problem in which the system cannot give a recommendation because the data of item and user are not exist.

In this final project , the system itself has been implemented some pre-processing data using collaborative filtering method to obtain training and testing data. After the implementation the *naïve* Bayes classification is used to obtain training data and testing data from the previous implementation. As for the starting data, a dataset from MovieLens is used. The dataset itself consists of 1682 movie, 943 user, 100.000 rating and 19 genre collaboratively. In the final result, the system can decide which item is best recommended to a cold-start user. This research is focused on making a system that can predict which item that can be best recommended to a cold-start user compared to other items. The system undergoes 3 different testing scenarios. Then from each testing, the result, in the form of rating prediction and MAE, is compared to each other. And from the result of scenario 1, it is shown that the amount of training data and testing data will not affect the accuracy, as shown by the accuracy value that stays between 93% and 95%. The result of scenario 2 shows that the test user amount affects the accuracy as shown by the accuracy value that goes down as the amount of test user goes up. Then from the scenario 3, it is shown that a combination of Collaborative Filtering and Naïve Bayes Classification algorithm give a better result with accuracy value of 97.55 % compared to pure Collaborative Filtering algorithm which has accuracy of 93.35%.

Keywords : *recommender system, collaborative filtering, cold-start, naïve bayes classification*