Abstract

Recommender system is an application giving recommendation to the user in the form of rating prediction to an item based on user's characteristics in giving information.

This final assignment implements and analyzes Similarity Fusion method applied in collaborative filtering recommender system. This final assignment analyzes the influence of sparsity to the accuracy of the rating prediction generated by recommender system after the implementation of Similarity Fusion method. Parameters used in the analysis are λ, which determines the use of similar user rating (SUR) and similar item rating (SIR), and δ, which determines the use of similar user-item rating (SUIR) for the Similarity Fusion method.

In the Similarity Fusion, the prediction is generated by using individual predictor consisting of SUR, SIR, and SUIR. They are given weight consisting of similarity counted by cosine similarity, λ, and δ.

The Similarity Fusion method generates accurate predictions according to users' preferences with the value of MAE is 0.8, the predicting process is done by optimizing the use of existing ratings which are SUR, SIR, and SUIR where the weight of each individual predictor is determined by similarity, $\lambda = 0.4$, and $\delta = 0.2$.

Keywords: collaborative filtering, recommender system, Similarity Fusion, sparsity