Artist Recommendation based on Number of Interactions using Collaborative Filtering Method

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Abstract

Recommendation systems are filtering systems aimed at predicting user preferences for specific items, in this case, artists. This study aims to enhance the performance of artist recommendation systems using collaborative filtering methods. Collaborative filtering utilizes user and artist information to construct recommendations. The dataset used includes the number of playcounts by users. Collaborative filtering is implemented by computing similarities between users and between artists. Cosine similarity is employed for similarity calculation. After similarity computation, a weighted sum calculation is performed to generate predictions. Performance evaluation is measured using MAE (Mean Absolute Error), MSE (Mean Squared Error), and RMSE (Root Mean Squared Error). The evaluation results obtained in this study are MAE 9.474, MSE 52,653.40, and RMSE 229.208 for the 70:30 ratio comparison. Meanwhile, for the 75:25 ratio comparison, MAE is 9.902, MSE is 45,914.85, and RMSE is 210.017. In the 80:20 ratio comparison, the results are MAE 10.486, MSE 48,764.51, and RMSE 217.416. These results indicate that as the ratio of training data to test data increases, the MAE, MSE, and RMSE values tend to rise.

Keywords: ***recommendation system, musik, collaborative filtering, Cosine similarity, MAE, MSE, RMSE***