An Approach to a Group Movie Recommender System Using Matrix Factorization-Based Collaborative Filtering

Faiha Adzra Darmawan[1], Z. K. A. Baizal[2]

[1,2,3]Fakultas Informatika, Universitas Telkom, Bandung
[1]fadzra@students.telkomuniversity.ac.id, [2]baizal@telkomuniversity.ac.id

Abstract

The growth of online movie streaming platforms has driven the demand for recommender systems that can deal with the daunting challenge of users finding movies that match their preferences. However, these recommender systems tend to focus on the needs of individual users, whereas, in the real world, there are circumstances in which recommendations are needed for a group of users. Therefore, this study proposes a Group Recommender System (GRS) using Matrix Factorization (MF) with an aggregation model to recommend movies for a group of users. We employ three Matrix Factorization methods, i.e., AF (After Factorization), BF (Before Factorization), and WBF (Weighted Before Factorization) for three distinct group sizes: small, medium, and large. Our goal is to identify the most accurate method for each group size. To evaluate the performance, we used precision and recall as measurement metrics. Based on the evaluation results, the AF method is to outperform the BF and WBF methods in terms of accuracy, both for small and large groups. This can be seen from the precision and recall values which tend to be higher. Meanwhile, the BF method outperforms the AF and WBF methods in terms of precision for medium groups.

Keywords – Group recommender system, matrix factorization, movie recommender, user preferences