

*Abstract*— The increasing number of games released each year and many platforms that distribute games such as Steam, Epic Games, Xbox Games, and others, can make it difficult for users to find games that suit their preferences. Furthermore, the recommender system plays an important role to make it easier for users to find games that match their preferences. Collaborative Filtering (CF) is a widely used and successful recommender paradigm. CF provides recommendations based on the similarity of preferences of other users. This paradigm can be divided into two categories such as memory-based CF and model-based CF. Model-based CF uses machine learning techniques such as matrix factorization (MF). Singular Value Decomposition (SVD) is one of the most relevant techniques for MF and can handle sparsity problems. This research aims to build a game recommender system using SVD to provide recommendations that match user preferences. In addition, this study evaluates the performance of SVD using cross-validate and compares it with non-Negative matrix factorization (NMF) using the RMSE evaluation metric. The results of the evaluation using cross-validate show that SVD outperforms NMF in the games domain with an average RMSE value of SVD is 0.36 and NMF is 0.47. In addition, SVD has a faster computation time, with the fastest time being 172 seconds, while NMF takes 231 seconds.

*Keywords*—Recommender system, Singular Value Decomposition, Games, Steam