

# Movsicc Recommender

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**Abstract:** *The growing use and users of multimedia and its industry has created a vast amount of unstructured and vague data. For instance, in the data of movies and music, those users generally find overwhelming to deal with this huge data. To simplify this obstacle, we intend on developing a project where users all around the globe can easily access this platform and take advantage of it for their own gratification. We aim at building a movie and music recommender system where users will be able to gain cursory and interesting insights about the movie or/ and music they intend to enjoy. All of this system will be based on an algorithm called Collaborative Filtering Algorithm. In this project, we wanted to develop a platform that is contemporary, and thus the reason behind discarding other standard algorithms like Content Based Filtering is because of its rudimentary factors and several other limitations. Comprehensively studying other similar projects in the past years, we found two flaws that make our project unique: one being that coalescing of movie and music recommender systems has never been done before and the other being the introduction of Collaborative Filtering Algorithm. These two aspects make our work stand out. Here we are using various algorithms, namely, KNN and SVD-WALS. Additionally, we are also implementing an Evaluation Metrics. It is further divided into 2 types, RMSE and MAE. They are used to evaluate the minimum error an algorithm returns and thus find out which algorithm is efficient for our system. Our team is currently researching about deep-learning algorithm, but due to lack of knowledge and experience we are sceptical about it. At backend, we've performed EDA and implemented KNN and SVD and adding some new features. On the other hand, at frontend, we've used HTML, CSS and JavaScript for the UI design. Since one of the most convenient frameworks is Flask, we are implementing it. Deployment is done on Heroku platform. It uses AWS server. Key problem-solving points that we would like to mention in our system are: Sparse Data Issue, Cold start, over fitting data, Scalability with large data. We got highest RMSE of KNN than SVD, further with accuracy of SVD MF the starting RMSE for SVD MF was 0.65, and MAE is 0.50. With optimization we were able to reduce it RMSE to 0.28 and MAE to 0.18. Another foremost factor in this project is its user experience, which we plan to make satisfying, wholesome, informative and fun. We aim at giving the user's at-a-glance view of all the necessary information, like: Actors, similar movies/ music, ratings, direct link to watch the searched result, and more. Thus, reducing all the strenuous efforts.*

**Keywords:** Collaborative Filtering, cold start, EDA, Flask, KNN, model, movie recommender, music recommender, RMSE, MAE, SVD-WALS, XGBoost

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