

Project title: Movie Recommendation using EDA and KNN

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Description of the problem:

With the evolution in consumption of digital media, consumers are presented with a huge range of choices for their entertainment. This has proved to be a privilege but has also led to a decision-making paradox, overwhelming the user with a variety of options. The quality and similarity between the choices differ greatly thus, challenging the ability to choose content based on their unique preferences and interests.

Orthodox methods of recommendations for movies, based on type of genre or referring to the periodical hits, lack the customized experience and may fail to provide uniqueness to each individual, based on their interests, since they overlook delicate factors like the user's preferences, ratings for similar movies and the user's viewing history. The data generated from reviews, feedback, and ratings from movies, if utilized appropriately, can notably and accurately personalize the recommendations and improve the user's experience while enjoying one of their favorite forms of media - movies. However, the ability to devise an efficient method that analyzes this huge amount of data and generates meaningful output can be challenging. This project aims to tackle this problem.

A brief survey:

Given the fast-growing generation of technology in the entertainment area, it is important to have a classification system that segregates and suggests movies based on user interaction, interest, and view history. However, with the existing movie recommendation systems, it is difficult to match and suggest the perfect movie based on the viewer's history. This is partially due to the lack of features considered during the recommendation process, like analysis of the plot for the exact genre, excluding the ones stated when the movie is released, cast, etc. A number of movie recommendation systems, usually relying on genre categorization or high-selling movies that stay on top of the charts, or segregate the movies based on ratings and release years, have previously been suggesting movies. Hybrid systems, like Netflix recommender, use these methods along with users' viewing history, or user ratings on a genre, to provide more efficient recommendations.

In this proposal, the aim is to build a movie recommendation system that uses the K-Nearest Neighbours (KNN) algorithm, an approach that the previous recommenders have not utilized. KNN algorithm will be used to deploy a filter that will predict the rating of a movie based on its neighbors, and then compare this prediction to the actual rating, given by various movie rating websites. This system will also utilize the enormous amount of data generated by users, like ratings and reviews. Thus, implementing KNN along with this huge dataset will enhance the prediction accuracy and also help personalize the movie recommendation.

Preliminary Plan/ Milestones:

1. Conduct a Literature Review of existing Movie Recommendation Systems.
2. Collect data with movie names, plots, genres, and other related features.
3. Implement KNN and tune the performance.
4. Manually test and evaluate the model performance on real-world datasets.
5. Write a report with a summary of the research, experiment, findings, results, and conclusions.

References:

1. [Comparative study of recommender system approaches and movie recommendation using collaborative filtering](#), Taushif Anwar & V. Uma
2. [Movie Recommender System Using Collaborative Filtering](#), Meenu Gupta; Aditya Thakkar et al.
3. [Movie Recommender System Using Parameter Tuning of User and Movie Neighbourhood via Co-Clustering](#), Sonu Airen, Jitendra Agrawal
4. [Movie Recommendation System Using Machine Learning](#), F. Furtado, A. Singh