



Personalised Movie Recommendation System

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Introduction/ Use Case

In today's world of Netflix and Chill, recommendation systems have become an essential part of our life, especially due to the increasing # of choices available to us. For a media commodity like movies, suggestions are made to users by finding user profiles of individuals with similar tastes. We shall be using both Content-Based recommendations with features such as actors, director, budget, crew etc. as well as Collaborative filtering for which the input to our algorithm will be observed user ratings in the past. The output of the framework will be such that for any given user, it would be able to tell us the top-N movies based on the metric used for calculating similarity.

Data Set

Dataset used is [available at Kaggle](#) containing 9,000 different movies, 26 million ratings over 700 users. The data is provided to us in the form of:

- A. Credits.csv : About movie's cast and crew information
- B. Keywords.csv: Keywords associated to each movie.
- C. Links.csv: IMDB and TMDB IDs for all movies.
- D. Rating.csv: Contains 100 ratings from all users for all movies.
- E. Movies_Metadata.csv: Contains features related to each movie like Budget, Genre, Language, Title etc.

We will split our data randomly into 75% and 25% for Training and Testing Set respectively. We will also perform Stratified K-Fold Cross Validation for different models.

Problem statement

Building a personalised movie recommendation system for users based on their past ratings.

Project objectives

1. We shall be using TF-IDF metric as part of the content based recommendation as the Baseline for our project.
2. We shall also be using Matrix Factorization techniques such as SVD and KNN algorithm as part of the Collaborative Filtering approach.
3. For our final model, we shall be using Bayesian Personalized Ranking along with Matrix Factorization.
4. Root Mean Squared Error is used to evaluate the performance of the models.

Literature Review

BPR: Bayesian Personalized Ranking from Implicit Feedback: This paper presents a generic optimization criterion (BPR-Opt) for item recommendation from implicit feedback for personalized ranking.

Reference Blogs:

1. [Recommender System using Bayesian Personalized Ranking](#)
2. [Introduction to Recommender System](#)

Timeline

