Movies Recommendation Systems

Phase Four Data Science Project 2025

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Project Overview

- Recommendation systems to suggests movies based individual customer preferences.

Business Problem

- Limitation on customer movie preferences
- Provision of movie options matching individual preferences
- Increase movie sales

Project Objectives

Build Recommendation Model to suggests top 5 movies based individual customer ratings of other movies. Model guarantees:

- Personalized recommendations
- Enhanced exposure to new content
- Increase movie sales
- Customer engagement
- Improved customer experience

The Data

Utilized MovieLens dataset which contains:

- Movies (movieId, title, genres)
- Ratings (userId, MovieId, ratings, timestamp)
- Tags (userId, MovieId, tag, timestamp)
- Links (userId, imbdId, tmdbId

Recommendation System Models

01 **Item-Based Collaborative Filtering Model (Item-Item CF)**

It leverages movie similarity

02 **Content-Based Filtering Model**

It focuses on item features and based on previous ratings

03 **Matrix Factorization with Singular Value Decomposition(SVD) Model**

It combines both Collaborative Filtering and Content Based Filtering. Best Performing Model.

Recommendation System Model (SVD) Use Case

01 Customer explores available movies (genre, specific movie, etc)

02 Rate movies watched

03 Model predicts ratings of unrated movies

04 Model populates(recommends) top 5 similar movies

Conclusions & Recommendations

- Best recommendation system model for deployment is Matrix Factorization with Singular Value Decomposistion (SVD) by the movie shop.
- The model highly distinguishes between relevant and irrelevant recommendations.
- Model provides personalized recommendations

Thank You