Movie Recommendation System

Report

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Acknowledgment

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We would also want to express our gratitude to Ma'am Maham and Ma'am Noor for their assistance. They deserve special thanks for their advice and regular oversight, as well as for giving important project information. I'm also grateful for the cooperation of my group member**.**

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Abstract

The movies dataset contains a large number of movie-related variables such as location, time period, genres, characters, and so on. It is feasible to extract attributes from a dataset and locate movies with comparable properties using machine learning, namely the closest neighbor approach. A feature extraction approach is described in this study, and the usage of the recovered features in the search for related movies is studied. On a set of videos, we do text pre-processing. The distribution for each movie is then stored after we extract movies from the collection using closest neighbor techniques. Then, using distance measures like cosine similarity, you may locate movies with comparable subject distributions. Experiments indicate that our retrieved movies contain valuable movie characteristics and may be utilised to quickly find comparable films.

REASON

Recommender systems assist in personalizing a platform and assisting the user in discovering something they enjoy. The most straightforward method is to propose the most popular goods. However, specialized recommender systems are required to truly improve the user experience through individualized recommendations.

TOOL NAME FOR PROJECT

Programming Language we will use is Python using Jupiter Notebook for model building and PyCharm as a tool to make website.

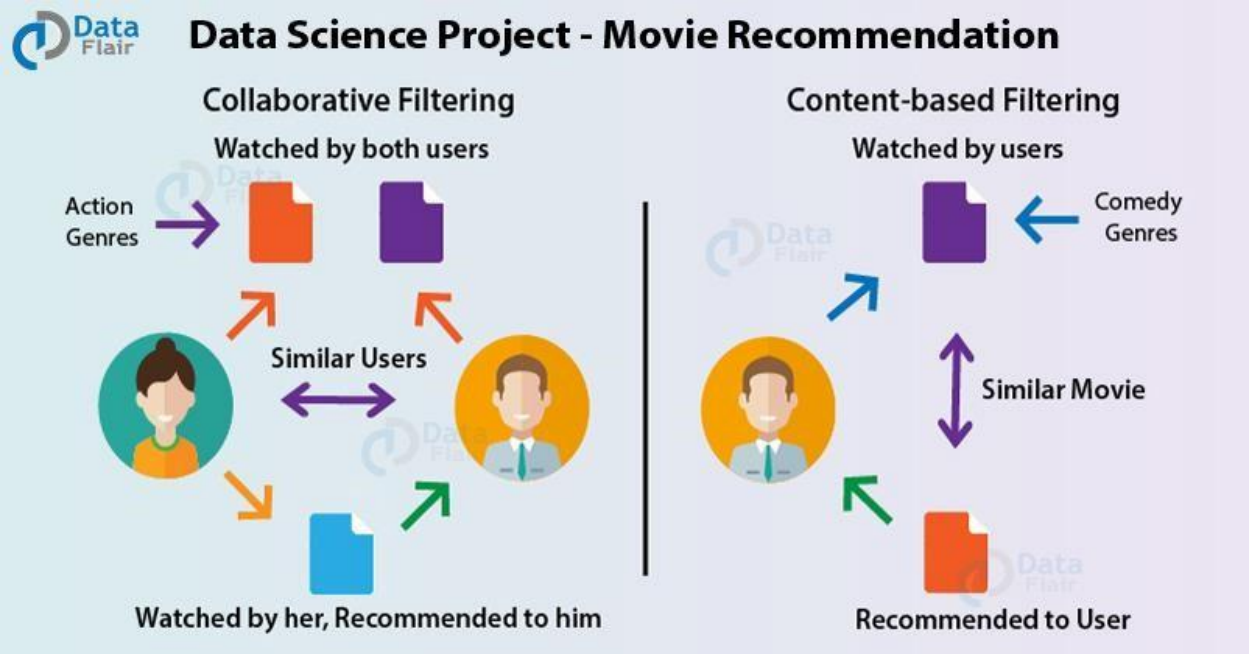
INTRODUCTION

A recommender system attempts to anticipate or filter preferences based on the user's preferences. Recommender systems are used in a wide range of applications, including movies, music, news, books, research papers, search queries, social tagging, youtube, facebook and general items.

PROJECT DESCRIPTION

A recommendation system is a sort of information filtering system that tries to anticipate a user's preferences and makes recommendations based on those choices. There are three approaches available for this filtration process.

- Collaborative Filtering
- Content-Based Filtering
- Hybrid filtering



Collaborative Filtering:

Collaborative filtering methods create a model based on the user's previous behaviour (i.e. things purchased or searched by the user) and comparable decisions made by other users. This model is then used to forecast what things (or ratings for items) consumers would be interested in.

Content Based filtering:

A content-based filtering strategy employs a set of distinct qualities of an item to suggest other things with comparable features. Content-based filtering relies only on an item's description and a profile of the user's preferences. It makes suggestions depending on the user's previous choices.

Hybrid filtering :

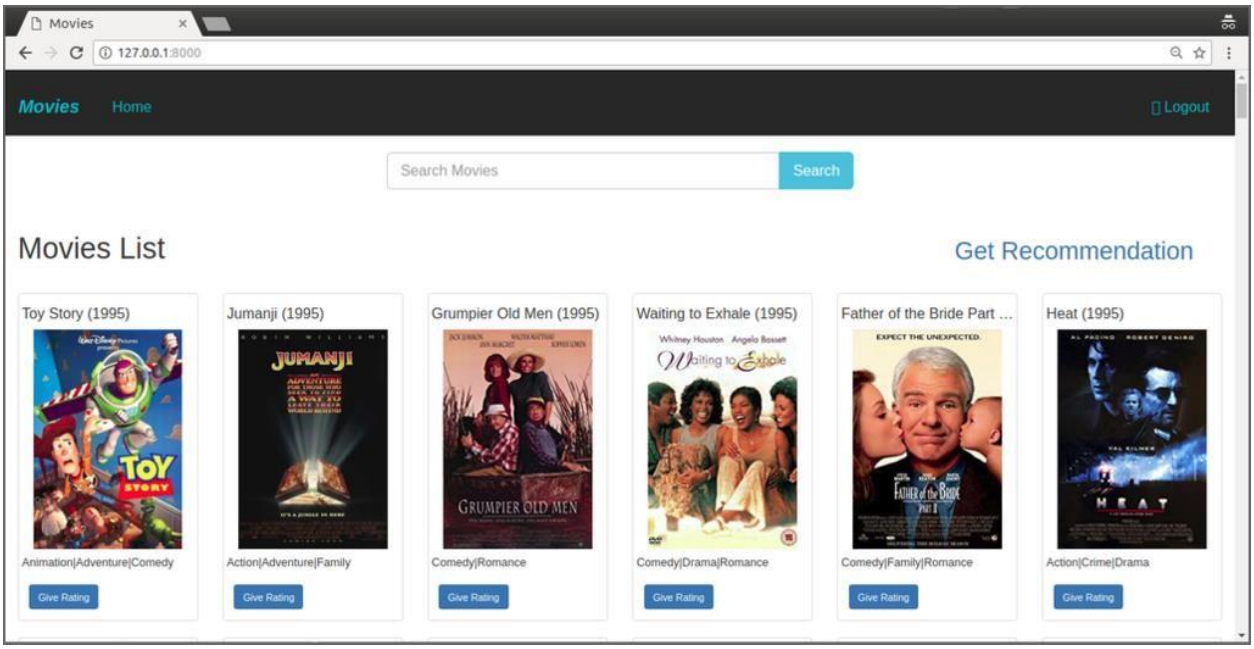
This type of filtering is a combination of content-based and collaborative filtering.

=>The approach we are going to use in our project is content-based filtering.

The filtration approach we will be using is based on the information about the things that has been supplied. The algorithm suggests goods that are similar to those that the consumer has searched for. This similarity (usually **cosine similarity**) is calculated based on the information we have about the items.

For example, if a user search films like 'The Prestige,' we may suggest films starring 'Christian Bale,' films in the 'Thriller' genre, or even films directed by 'Christopher Nolan.'

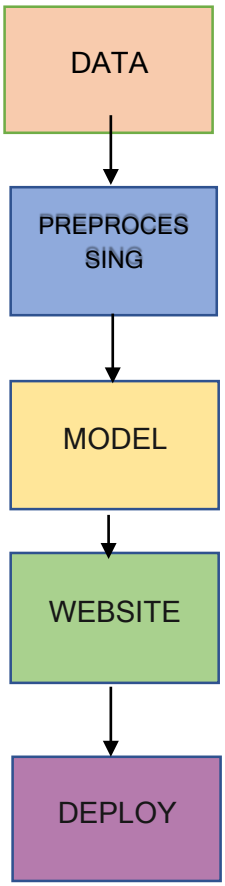
So, the recommendation system looks at the columns and finds the film "The Prestige," then tries to find similar movies based on the information in the database, such as the lead actors, the director, the film's genre, the production house, and so on, and finds movies similar to "The Prestige."



Advantages

1. Because the recommendations are tailored to this person, the model does not require any information about other users. This makes scaling to a big number of people simpler.
2. The model can recognize a user's individual preferences and make recommendations for niche things that only a few other users are interested in.

Project Flow Diagram (Methodology Diagram)



DATASET

TMDB 5000 movie dataset **Column:**

There will be total 20 columns in movies.csv.

1. Budget
2. Genres
3. Homepage
4. Id
5. Keywords
6. Original language
7. Original title
8. Overview
9. Popularity
10. Production companies
11. Production countries
12. Release date
13. Revenue
14. Run time

15. Spoken language
16. Status
17. Tagline
18. Title
19. Vote average
20. Vote count

There will be 04 columns in credit.csv

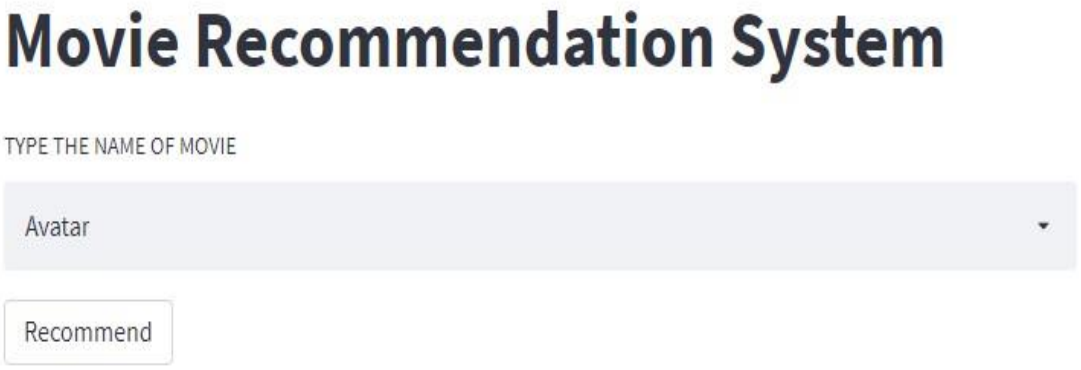
1. Movie ID
2. Title
3. Cast
4. Crew

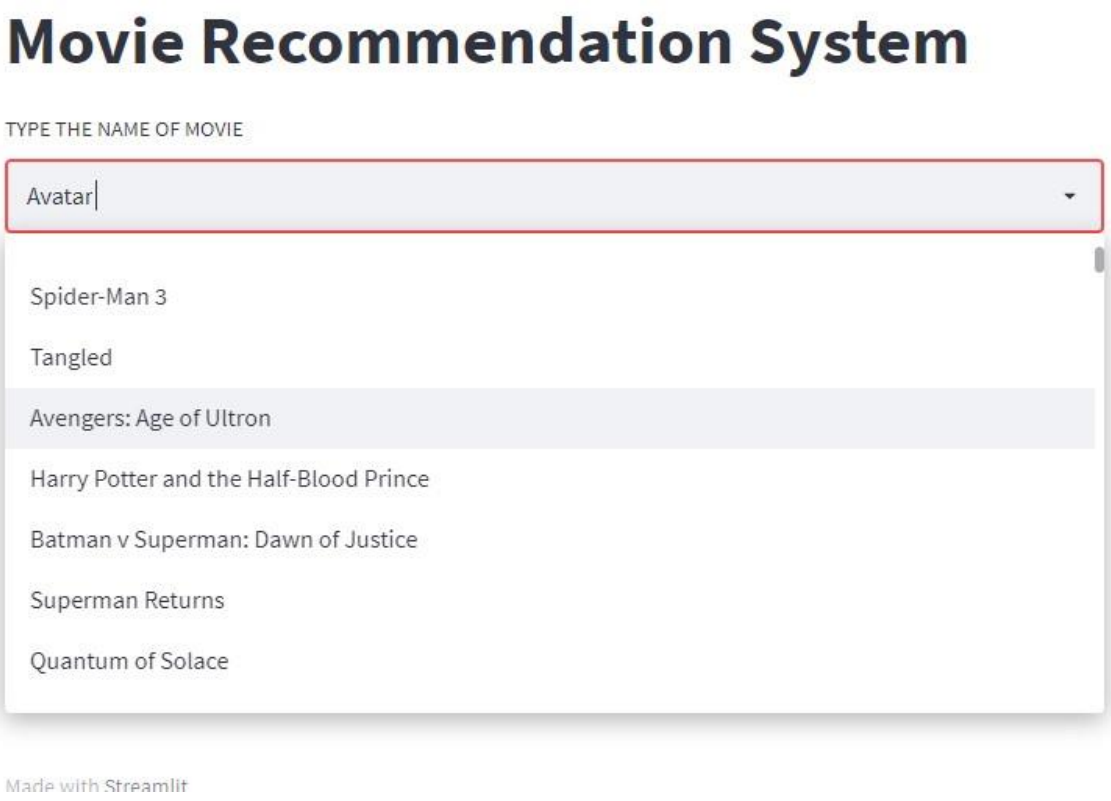
Then we will merge these two data frames in a single data frame. So, total will be 23 columns.

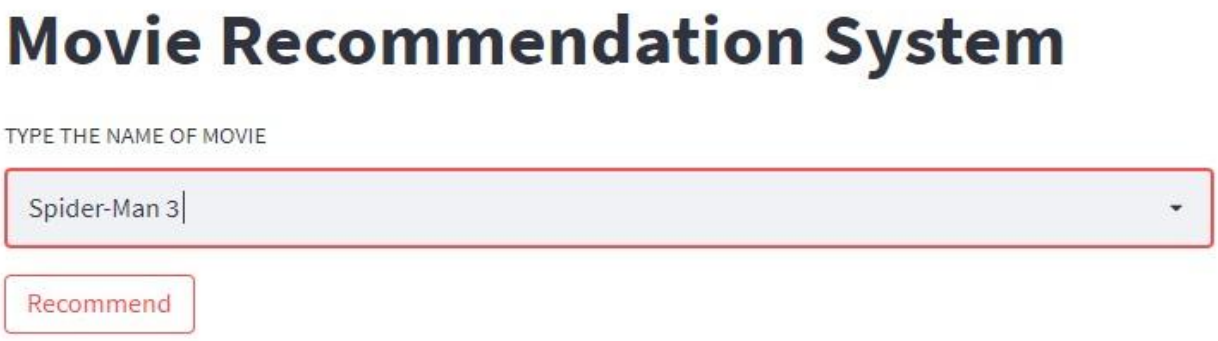
LINK:

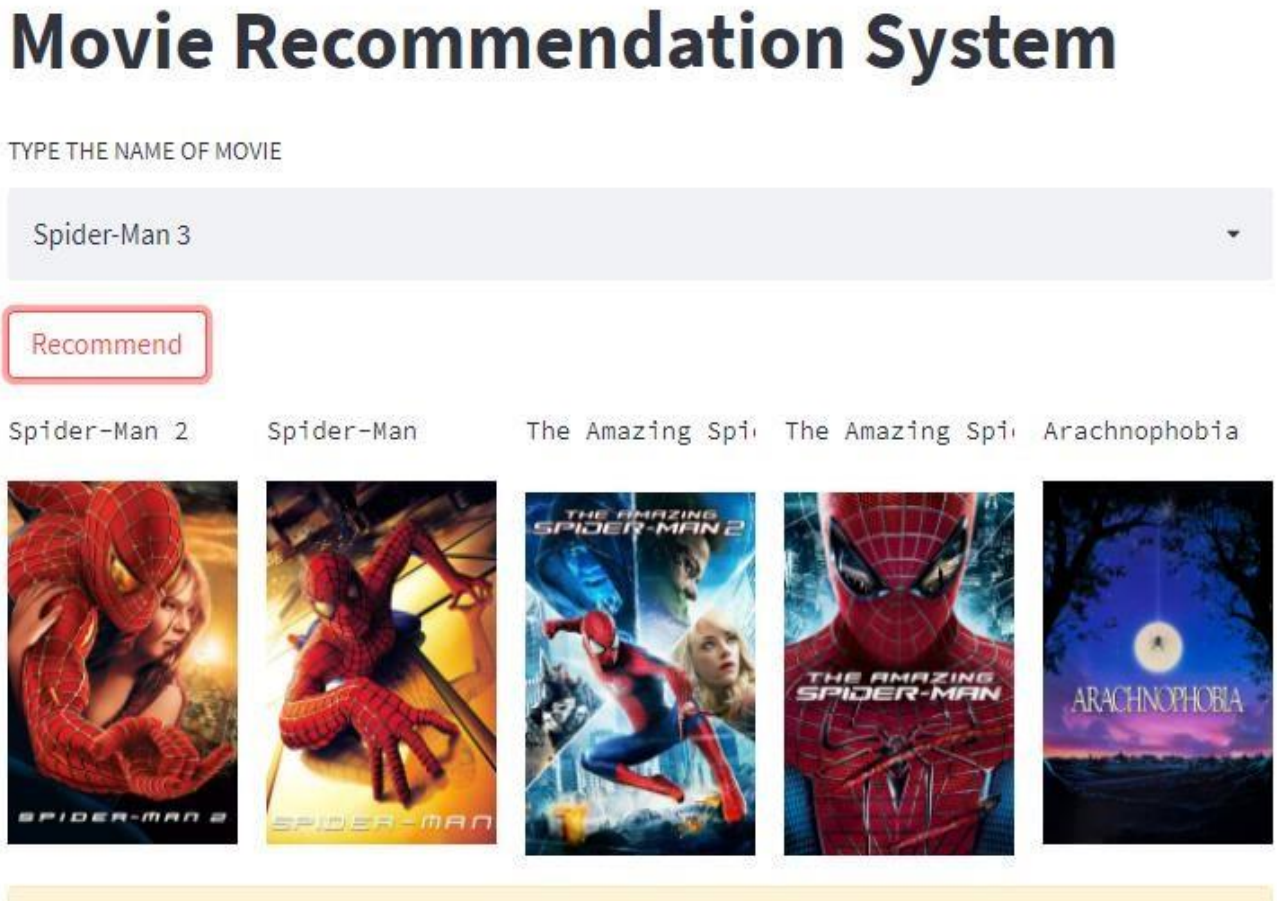
https://www.kaggle.com/tmdb/tmdb-movie-metadata

UI Screens




Movie Recommendation System
TYPE THE NAME OF MOVIE
Avatar
Spider-Man 3
Tangled
Avengers: Age of Ultron
Harry Potter and the Half-Blood Prince
Batman v Superman: Dawn of Justice
Superman Returns
Quantum of Solace
Made with Streamlit


Movie Recommendation System
TYPE THE NAME OF MOVIE
Spider-Man 3
Recommend



Research question

1: What exactly is the goal of a recommendation system?

The goal of recommender systems is to provide recommendations based on user preferences that have been collected. These systems process data using information filtering techniques to offer the user with possibly more relevant things.

2: In a recommendation system, what algorithm is used?

One of the most often used recommendation algorithms is content based filtering (CBF) and its variants. Even novice data scientists may use it to create their own personal movie recommendation system for a resume project, for example.

3. Is it possible to use extracted features to find similar movies?

Features

After exploring different websites, we concluded that following should be some features of any recommendation system.

Features:

- **Drive Traffic**
- **Provide Relevant Material**
- **Increase Average Order Value**
- **Boost Number of Items per Order**
- **Control Retailing and Inventory Rules**
- **Lower Work and Overhead**
- **Provide Reports**
- **Offer Recommendations and Direction**
- **Drop Us A Note**

Literature Survey

MOVREC is a movie recommendation system presented by D.K. Yadav et al. based on collaborative filtering approach. Collaborative filtering makes use of information provided by user. That information is analyzed and a movie is recommended to the users which are arranged with the movie with highest rating first. The system also has a provision for user to select attributes on which he wants the movie to be recommended.

Result And Evaluation

This system recommends movies which we have achieved. Suggestions for fresh material that will boost user engagement are welcome. The goal is to expose consumers to new content that may pique their interest and encourage them to consume more content on our platform and we have achieved that. The common thread running through all of these issues is that they all strive to improve client satisfaction, which will lead to more commissions, sales, and other forms of revenue.

Challenges And Future Work

User interest are the challenges in recommendation systems. Users will have long-term interests, such as health preferences, as well as short-term interests, such as trends and events, and these interests will alter over time. For example, millions of viewers were interested in the midterm elections in the United States in November and would have loved to watch politics-related content. However, for the same person in a different historical period, this will not be the case..Our Future work will be :

- Extend the proposed Solution
- Perform better evaluation
- Consider other application domains
- Use more data or item features
- Experiment with more or different algorithms

References

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- https://geo-viz.com/blog/advantages-of-a-recommendation-system/