

Project report for my Movie Recommendation API

Github link for the project :

<https://github.com/Mikiyas-STP/MovieRecommendationAPIBasedSystem>

Introduction

I built this system because I enjoy watching movies but sometimes I struggle to search for movies. That is why I built this movie recommendation system. This app allows a user to search for a movie, view details of it and get recommendations for similar movies.

And I created this project to explore how API works, process data in python and build interactive UI. I also added data analysis features to show how movies have been released over the years.

Data source

This app gets data from the movie database (TMDB API) which is a popular online platform giving detailed information about movies including,

- searching for movie by name
- getting movie details such as its release date rating and overview.
- fetching recommendations

By using API the app provides users with real time movie suggestions and insights without manual dataset.

Challenges And Solutions

- Difficulty in keeping the API key Secured
 - About some API errors
 - The Problem - Sometimes, searching for a movie returned no results/caused unexpected errors.
The Solution - I added error messages for this scenario.
 - Some movies have missing data
 - The Problem - some movies lack release dates or poster images.
The Solution - i added a fallback so the app shows "N/A" when data is missing.
 - Data Analysis & Visualization
 - I included a data visualization feature and now the app presents a graph showing movie releases with time this makes the app more interactive.
 - Tools Used
 - Pandas for data handling
 - Matplotlib for visualizations
- ChatGPT helps only to refine the ReadMe file So that it has proper format when posted on github.

Ethical consideration

- Bias in recommendation
Since we are not using a custom recommendation model it might have favored kind of recommending popular movies.
- user privacy
Since the app does not collect any data from users and save history it is positive in user privacy.
- API usage
I used the API as regulated by the guidelines of TMDB to avoid excessive API requests.

What I Learned

- how to fetch and process real time data from api
- how to handle missing data
- how to build ui using streamlit
- how to analyse and visualize data using pandas and matplotlib

What went well and what needs to be improved for next time?

- The app is easy to use and quick, the error handling works well and the visualization feature is a good addition for the project.
- Next, build a custom recommendation algorithm instead of relying on TMDB and Allow the users to save their favorite movie and create watchlists.

Final thoughts

This project was a great way to learn how API and data visualization work together. I will improve it as my knowledge about API integration is broadened in the future.

Feb 21 2025

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