Register Number:510123104034

Name :K.Pavithra

Institution: adhiparasakthi college of engineering

Department: B.e computer science engineering

Date of Submission:08.05.2025

1.PROBLEM statement

This research paper consists of prompt based movie recommendation system that recommend the movies to users through using various technologies which interpret the user given prompt and give the movie suggestions to user. Overall traditional system for recommendation which efficiently give the output by using content bases and collaborative techniques. Our approach is to specify the movie among given using user feedback and make the list according the most preferred key word for suggesting that movie. So the overall research underscores the full potential of prompt-based application for user engagement in this platforms and provide the foundation for future expansion in various multiple model

2.OBJECTIVES OF THE PROJECT

The primary objective of this project is to devlop an AI-driven movie recommendation system that delivers personalized movie suggestions to users based on their viewing habits and preferences.

* Personalized recommendations🡪Rating, reviews, viewing history
* Enhanced user engagement🡪providing relevant and personalized recommendations, the system aims to encourage users to explore more moives.
* AI-Driven matchmaking🡪To identify movies that are likely to be enjoyed by a specific user based on their profile and preferences.
* Scalability and Adapatability🡪The system should be designed to handle a large user based and adapt to changing user preferences and evolving movie database.

3.SCOPE OF THE PROJECT

Data collection and preprocessing:

* User Data🡪Gathering data on user preferences, including ratings, reviews, and viewing history.
* Movie D ata🡪Collection metadata about moives , such as genre, cast, director, and plot summaries,
* Data Cleaning and Trasformation🡪Preparing the collected data for analysis and model training.

Model Development and Training:

* Collaborative Filtering🡪Employing algorithm like matrix factorization or neighborhood-based filtering to identify similar users and movies based on user interactions.
* Content-Based Filtering🡪Using moives features and user preferences to suggest movies that are similar in content.
* Deep Learning Models🡪Exploring advanced techniques like neural network for more sophisticated recommendations patterns.

Matchmaking Functionality:

* User Profiling🡪Analyzing user preferences and identifying similar users based on their viewing history.
* Social Interaction🡪Facilitating interactions between users who have similar movies preferences.
* Group Recommendations🡪Suggesting movies based on the collective preferences of a group of users.

Evaluation and Refinement:

* Performance Metrics🡪Using metrics like precision, recall, and F1-score to evaluate model accuracy and relevance of recommendations.
* User Feedback🡪Gathering user feedback to refine models and improve recommendation quality.

4.DATA SOURCES

* Dataset: Movielens Datasset, IMDb dataset.
* Sources: Netflix and Youtube and various Machine Learning technologys etc,..
* Type: Public
* Dataset link: https://github.com/pavithra2930/Sofia.git

5.HIGH-LEVEL METHODOLOGY

Data Colloction :

* User Data🡪Gather information about users viewing history, ratings and preferences.
* Content Data🡪Collect details about movies, including genres, actors, directors, and other relevant attributes.
* Contextual Data🡪consider factors like the time of day , location, and user demographics to personalize recommendations further.

Model Training:

* Collaborative Filtering🡪Analyze user behavior to find patterns and predict preferences based on similar users choices.
* Content-Based Filtering🡪Suggest moives similar to those the users has liked in the past.
* Hybrid approaches🡪Combine collaborative and content –based filtering for more accurate recommendations.

Recommendation Generation:

* Algorithm Execution🡪Run the trained models on user data to generate a list of personalized recommendations.
* Ranking and Fltering🡪Sort the recommendations based on their predicted relevance and filter out irrelevant suggestions.
* Presentation🡪Present the recommendations to the user in a uset-friendly format.

6.TOOLS AND TECHNOLOGIES

Machine learning Algorithms:

* Collaborative Filtering🡪This approach analyzes user behavior and preferences, and recommends movies based on what similar users have liked or rated.Algorithms like k-Nearest Neighbors (KNN) and matrix factorization are often used.
* Hybrid System🡪Combining both collaborative and content-based filtering can often lead to better recommendations.

Data Storage and Management:

* Databases🡪Storing user data(viewing history, ratings,etc.) and movies information(genre,cast,director,etc.)is crucial .Relational databases (e.g.,PostgreSQL,MySQL)orNoSQL databases(e.g.,mongoDB,Cassandra)can be used depending on the scale and complexity of the system.
* Data Storage(Cloud)🡪For large-scale system,cloud-based storage(e.g.,AmazonS3,Google cloud storage)offers scalability and cost – effectiveness.

Other Tools and Technologies:

* Programming Languages🡪Python is a popular choice for data science and machine learning tasks, including building recommendation system.
* Frameworks and Libraries🡪Libraries like Scikit-learn,TensorFlow, and PyTorch can be used for developing and deploying machine learning models.
* API Integration🡪APIs can be used to integrate the recommendation system with other services, such as streaming platforms or e-commerce websites.

AI-Driven Matchmaking System components:

* Data Collection and Preprocessing🡪Gathering data from various sources , cleaning and preparing it for model training.
* Model Training🡪Training machine learning models on the collected data to predict user preferences.
* Prediction and Ranking🡪Making predictions about which movies a user might like and ranking them based on their predicted ratings.
* User Interface🡪Presenting the recommended movies to the user in an engaging and user-friendly way.
* Feedback Loop🡪collecting user feedback on the recommendations to continuously improve the system.

7.Team members and roles

R.MOOGAMBIGAI :Documentation and Presentation

A..PRATHIPA: Data Collection and Integration

T.HEMAVARSHINI: Evaluation and Optimization

S.PRIYA: Data Cleaning and EDA

K.PAVITHRA: Feature Engineering and Modeling