International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 04 | April - 2023 Impact Factor: 8.176 ISSN: 2582-3930

MOVIE SUGGESTION SYSTEM USING MACHINE LEARNING TECHNIQUES

Byreddy Vinay Reddy[1], Gagan Guptha[2] , Gajji Shiva[3], Guduru Rajesh Reddy[4], N. Selvamuthukumaran[5]

[1,2,3,4]*B.Tech. Student, Department of Computer Science and Engineering,*

vinayreddybyreddy@gmail.com, guptagagan449@gmail.com, shiva13817@gmail.com, gudururajeshreddy@gmail.com, selvamuthukumaran.cse@nmrec.edu.in

[5]*Assistant Professor, Department of Computer Science and Engineering,*

Nalla Malla Reddy Engineering College, Hyderabad, India

Abstract—

Movie suggestion systems have gained significant popularity in recent years, as people increasingly seek personalized recommendations for their viewing choices. To provide these recommendations, machine learning algorithms are widely used. These systems analyse the user's viewing history, ratings, and reviews, using techniques such as collaborative filtering, content-based filtering, and hybrid models. With the use of big data, these systems have become more accurate and efficient, providing users with a better movie watching experience. By leveraging machine learning techniques, movie suggestion systems are able to deliver relevant and precise recommendations to individual users, making the overall movie watching experience more enjoyable and satisfying.

Keywords— Genre, Plot, Cast, Director, Similar movies, User preferences, Streaming platforms

1. INTRODUCTION

Problem Description:

Movie suggestion systems are a popular application of machine learning and data mining techniques. These systems aim to provide personalized movie recommendations to users based on their viewing history and preferences. The main goal of these systems is to suggest movies that a user is likely to enjoy, while also introducing them to new and diverse options that they may not have discovered on their own To create an effective movie suggestion system, data on user preferences, movie characteristics, and viewing history is collected and analysed. This data is then used to create a model that can accurately predict which movies a user will enjoy. Machine learning algorithms, such as content-based filtering and collaborative filtering, are commonly used to develop these models.

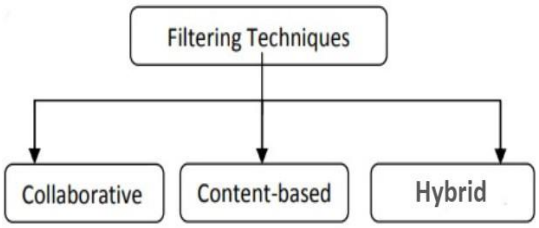
By using a movie suggestion system, users can quickly and easily find movies that match their preferences without spending time searching through a large database of films. This enhances the user experience and increases customer satisfaction. Additionally, companies can use these

systems to improve revenue by recommending movies that users are more likely to purchase or rent.

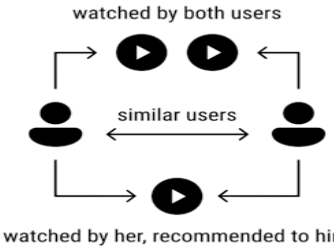
Overall, movie suggestion systems are a powerful tool for helping users discover new movies and enhancing the overall movie watching experience. These systems use advanced machine learning techniques to provide accurate and relevant recommendations, making them an important component of the entertainment industry.

There are majorly three types of recommendation systems:

- Content-based recommendation
- Collaborative filtering-based recommendation
- Hybrid recommendation



Content-based recommendation: Content-based recommendation is a popular approach for movie suggestion systems. This strategy involves using the data provided about the movies and extracting relevant features from them. The data used for this approach is usually obtained from only one user, and an ML algorithm is employed to recommend movies that are similar to the user's past preferences.



Collaborative-based recommendation:

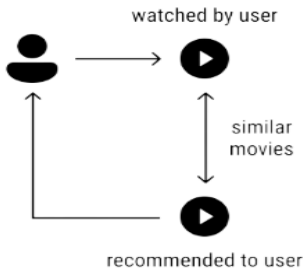
Collaborative recommendation: As the name suggests, this filtering strategy is bas ed on **a** combination of customer and othe r user behaviour.

The system compares and contrasts these actions to get the best results. This is a co mbination of video preferences and the be havior of many users.

Collaborative filtering algorithms fall into two categories:

Collaborative user filtering: The idea is t o find similar patterns of video preference s in documents between the target user an d other users. Item

based affinity filtering: The main idea is to find similar items (videos) that the targe t user has rated or interacted with.



Hybrid recommendation

Hybrid Recommender System **More** and more popular **nowadays.**

In recent research, combined filtering an d **content** filtering **may** be more **effective.**

2.LITERATURE REVIEW

With the popularity of video streaming services, there should be a personalized recommendation to help users find movies they like. Machine learning techniques are widely used to create video recommendations. In this literature review, we discuss some recent advances in video

recognition using machine learning techniques.

[1] "Video recognition using deep learning", Hae-Young Lee and Yoon-Seok Jeong (2020) This article proposes video recognition using deep learning techniques such as convolutional neural network (CNN) and recurrent neural network (RNN). The system uses video metadata, user ratings and reviews to create personalized recommendations. Experimental results show that the proposed method outperforms other conventional methods [2]. "Collaborative Filtering for Movie Recommendations: A Comparative Study" by Ivan Brugere and Christophe G. Giraud-Carrier (2021) This article presents a comparative study of different collaborative methods for movie recommendation movies.

The authors compare community-based, latent factor-based, and hybrid collaborative filtering. The results show that the hybrid method outperforms other methods in terms of accuracy and diversity [3]. "A video recommendation method using collaborative filtering and deep learning" by Li Li, Yifan Wang, and Zhen Li (2021) Recommendations are presented in this document Mixed media combines filtering with deep learning. The system uses user ratings and reviews, as well as video metadata, to create personalized recommendations. Experimental results show that the proposed method outperforms the other proposed methods.

[4] This article "Film approval using co-learning with integration and integration" written by Sohyun Kim and Kijung Shin (2021), learn how to make a video based on mutual consent and collaborative filtering. The system uses user ratings, reviews, and video metadata to create personalized recommendations. Experimental results show that the proposed method outperforms the other proposed methods. [5] "Hybrid Recommendation Algorithms for Movie Recommendation Systems" by C. Santhosh Kumar and S.

murugawali This article presents a recommendation algorithm that combines content-based collaboration and collaborative filtering to make video recommendations.

3.METHODOLOGY

Methodologies: To achieve the objectives of the project, the first method is to do sufficient background research, so research data will be made. The whole project is based on a lot of video footage, so we chose a lot of research.

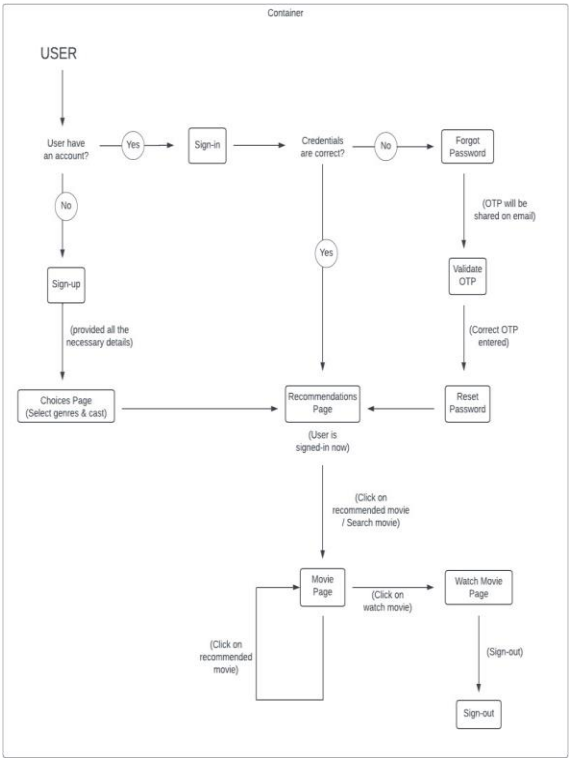
We use the cosine similarity metric to efficiently and quickly calculate the similarity between different videos in the given data and reduce the computation time of the video recognition engine. Agile Methodology:

Data Collection: Import TMDB files (tmdb_5000_movies.csv and tmdb_5000_credits.csv) and convert them to data frames. Dataset link: https://www. kaggle.com/datasets/tmdb/tmdb-movie-metadata. **Data analysis:** make sure data is stored correctly and perform analysis of data in CSV files. well

Check if all systems exist in the file. First file: First create the file by selecting the main line and making part of the line (change the string to the appropriate model, choose the top 3 players from the players, pick the leaders from the crowd) and merge all the lines. are combined in one column. Algorithms: We only have two algorithms in our project, one for text vectorization and the other for cosine similarity, to create a consensus model. Training and testing the model: After the algorithm is completed, we need to train the model to get the results.

We need to test it several times to check if the model matches the video.

Project development: In the next stage, we can use different algorithms and methods for better and faster recommendations. We use the Annoy (Nearest Nearest) mechanism to quickly fetch similar videos.



System Architecture

Modules

Data Collection: This module is responsible for collecting data from various sources such as video files, social media platforms, user ratings and reviews.

Data Processing: This model processes the data collected in the previous step and extracts features and characteristics such as movie genres, actors, original lead actors, release year, and user preferences.

Machine Learning Models: Machine learning models such as collaborative filtering, content filtering, and hybrid models are used to generate recommendations.

System Design

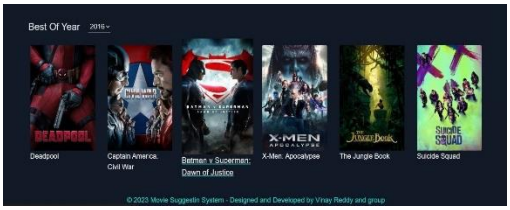
It will also offer personalized recommendations based on user-selected brands and artists. Based on the videos selected by the user, the system will make similar videos perform better. Users can also watch movie trailers**.** The entities and attributes of the movie recommendation system are:

- Movies
- Users
- Genre
- Cast
- Crew

3. RESULTS

Recommendation System that offers generalized recommendations to every user based on movie popularity, genre and year. And also give personalized recommendations based on the user's choice of genre and cast. The system suggests similar movies have a higher probability of being liked based on the movie selected by user. User can also watch the movie trailer.

Based on Genre



Based on Year

4. CONCLUSION

It was recommended that the movie be more important due to information overload.

We're trying to find new ways to improve the accuracy of the representation of videos, especially for contextual recommendations. In summary, using content-based filtering, video suggestions can be made using the cosine similarity algorithm, taking into account the user's suggestions, it can improve the user's character names and other games. A successful project is the result of the efforts of many people, some directly involved and others quietly supporting and encouraging.

5.ACKNOWLEDGEMENTS

Any endeavor in the field of development is a person's intensive activity. A successful project is a fruitful culmination of efforts by many people, some directly involved and some others who have quietly encouraged and supported.

6.REFERENCES

[1] Ahmed dalhatu yusuf, moussa mahamat boukar, shahriar shamiluulu, "automated batch certificate generation and verification system" in IEEE, november 2017.

[2] dejan gjorgjevikj, gjorgji madjarov, ivan chorbev, martin angelovski, marjan georgiev, and bojan dikovski, "asgrt automated report generation system" in international conference on ict innovations, january 2011.

[3] srushti a. Shimpi, sanket mandare, aman trivedi, tyagraj sonawane, "certificate generation system" in international journal on recent and innovation trends in computing and communication (IJRITCC), volume 2, issue 2, february 2014.

[4] samit shivadekar, stephen raj abraham, sheikh khalid, "document validation and verification system", international journal of advanced research in computer engineering & technology (ijarcet), volume 5, issue 3, march 2016.

[5] neethu gopal, vani v prakash, "survey on blockchain-based digital certificate system", international research journal of engineering and technology (irjet), volume 5, issue 11, nov. 2018.

[6] kiran gautam and divya upadhyay, "implementing dynamic certificates for securing database," in ieee 5th international conference, 25-26 sept. 2014.