SYNOPSIS

Report on

Movie Recommendation System

by

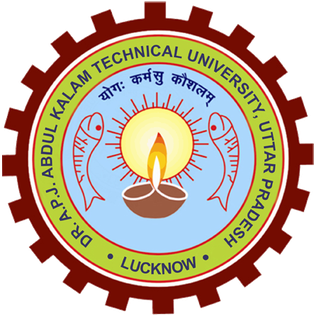
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**Session:2023-2024(III Semester)**

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**(-2023)**

**ABSTRACT**

The rapid growth of digital content and streaming platforms has led to an overwhelming array of movies, making it challenging for users to discover movies that align with their preferences. To address this issue, we propose an Enhanced Movie Recommendation System that integrates Collaborative Filtering and Content-Based approaches to provide personalized movie recommendations to users.

In our system, Collaborative Filtering levereges user-item interactions to identify similar user preferences and recommend movie based on those similarities. We employ advanced collaborative filtering ,to enhance recommendation accuracy.

Furthermore, we incorporate Content-Based Filtering to analyze movie features such as genre, director, actors, plot, and user profiles to provide recommendations. By employing natural language processing and machine learning techniques, we extract meaningful information from movie descriptions and user preferences to enhance the accuracy and relevance of recommendations.

Our system is designed to address the limitations of traditional recommendation systems by combining the strengths of both collaborative and content-based filtering. The integration of these approaches not only enhances recommendation accuracy but also provides a more comprehensive and personalized movie recommendation experience for users.

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**INTRODUCTION**

A recommendation system is a type of information filtering system which challenges to assume the priorities of a user, and make recommendations on the basis of user’s priorities.

The basic concept behind a movie recommendation system is quite simple. In particular, there are two main elements in every recommender system : users and items. The system generates movie predictions for its users, while items are the movies themselves.

The primary goal of movie recommendation systems is to filter and predict only those movies that a corresponding user is most likely to watch. The ML algorithms for these recommendation systems use the data about this user from the system’s database. This data is used to predict the future behaviour of the user concerned based on the information from the past.

Huge range of applications of recommendation systems are provided to the user. The popularity of recommendations systems have gradually increased and are recently implemented in almost all online platforms that people use. Often, these systems are able to retrieve and filter data about a user’s preferences. Many a times, these systems can be improvised on the basis of activities of a large number of people. Due to the advances in recommender systems, users continuously expect good results. Every user has different likes and dislikes. In addition, even the taste of a single customer can differ depending on a large number of aspects, such as mood, season, or type of activity the user is performing. Two critically important methods are widely used for recommender systems. One is content-based filtering, where we attempt to shape the users preferences using data retrieved, and suggest items based on that profile. The other is collaborative filtering, where in we try to cluster alike users together and use data about the group to make recommendations to the customer.

**PROJECT OBJECTIVE**

The Movie Recommendation System provides a mechanism to help users categorize users

with similar interests. Basically the purpose of a recommendation system is to search for

material that will be interesting to a person. Moreover, it involves a number of factors to

create personalized lists of useful and interesting content specific to each user/individual.

Recommendation algorithm collects from the user interest. A set of keywords (or

features) of an item is the Item profile. For example, consider a scenario in which a

person goes to buy his favorite cake ‘X’ to a pastry. Unfortunately, cake ‘X’ has been sold

out and as a result of this the shopkeeper recommends the person to buy cake ‘Y’ which is

made up of ingredients similar to cake ‘X’

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**DEVELOPMENT METHODOLOGY**

Incremental methodology was chosen for this project as the requirements for the project are clearly known, defined as well as understood. As the methodology supports the process of design, implementation and testing with each increment added over a course of time, increment methodology would be a great fit for the project as animal detection task needs a lot of hit and trial in order to fulfill the proposed requirements and functionalities of the aimed project as well as to achieve a good user experience. However, in the making process of the system some minor features can be added but as the main requirements are understood this methodology would be great fit.

**LITERATURE REVIEW**

There are three techniques of recommendation system: Collaborative Filtering, Content-Based Filtering and Hybrid Filtering. In Content Based recommender system, user provides data either explicitly (rating) or implicitly (by clicking on a link). The system captures this data and generates user profile for every user. By making use of user profile, recommendation is generated. In content based filtering, recommendation is given by only watching single user’s profile. System tries to recommend item similar to that item based on users past activity. Unlike content based, collaborative filtering finds those users whose likings are similar to a given user. It then recommends item or any product by considering that the given user will also like the item which other users like because their taste are similar. Both these technique have their own strength and weakness so to overcome this, hybrid technique came into picture, which is a combination of both these techniques. Hybrid filtering can be used in various types. We can use content based filtering first and then pass those results to collaborative recommender (and vice-versa) or by integrating both the filter into one model to generate the result.

**Content-Based Filtering:** Content-Based Filtering are also known as cognitive filtering. This filtering recommends item to the user based on his past experience. For example, if a user likes only action movies then the system predicts him only action movies similar to it which he has highly rated. The broader explanation could be suppose the user likes only politics related content so the system suggests the websites, blogs or the news similar to that content. Unlike collaborative filtering, content based filtering do not face new user problem. It does not have other user interaction in it. It only deals with particular user’s interest. Content based filtering first checks the user preference and then suggest him with the movies or any other product to him. It only focus on single user’s ideas, thoughts and give prediction based on his interest. So if we talk about movies, then the content based filtering technique checks the rating given by the user.

**Collaborative-Filtering:** The concept of collaborative filtering was first introduced in 1991 by Goldberg .The Tapestry system applies only to smaller user groups (e.g. a single unit), and has too many demands on the user. As a proto-type of collaborative filtering recommendation system, Tapestry presents a new recommendation, but there are many technical deficiencies. Since then, there has been a scoring based collaborative filtering recommendation system, such as Grouplens, which recommends news and films. At present many ecommerce sites have been using the recommendation system such as Amazon, CDNow, Drugstor and Moviefinder etc. There is massive amount of data available. As we all know that today in this busy life no one has time to search hundreds of thousands of item and select the one which is similar to their taste. So collaborative filtering is one of the ways to filter the data and provide the relevant information in which the user is interested in. Collaborative Filtering is one of the most well known techniques for recommending items. This technique suggests relevant item to the user based on neighbour’s choice. It first finds out the similarity between the user and his neighbour and then predicts the items. There can be n number of users. This technique finds the similar user from the list of user’s. But the similarity between users is found out based the ratings which the users have given to the particular item. This way the approach continues and the desired result is generated. This strategy takes ratings given by user for any item from the large catalog of item catalog of ratings given by the user.

**SYSTEM ANALYSIS**

**Requirement Analysis:** Movie recommendation system is a web-based app, which provides all the details of the requested movie. Details include recommended movies, as well as top cast, ratings, reviews and so on. The requirement of this project is given below:

1. Functional Requirement
2. •Validate each user input to database.
3. •Autosuggest user for smooth experience.
4. •Simple loading screen to inform user that work is in progress.
5. •Notify user if result is not found.
6. •Simply UI to show more details about the casts.
7. Functional Requirement
8. •Validate each user input to database.
9. •Autosuggest user for smooth experience.
10. •Simple loading screen to inform user that work is in progress.
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**Functional Requirement:**

•Validate each user input to database.

•Autosuggest user for smooth experience.

•Simple loading screen to inform user that work is in progress.

•Notify user if result is not found.

•Simply UI to show more details about the casts.

**Non-Functional Requirement:**

•The processing of each request should be done around 10 seconds.

•Display default data if some data are missing

**Software Requirements:**

•OS: Windows, iOS, Linux

•Browser: Chrome, Brave, Mozilla Firefox, Microsoft Edge, Apple Safari, Opera.

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