



Types of Movie Recommender Systems

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ABSTRACT

A Movie Recommender System provides us with customized recommendations for movies. A Movie recommender system normally predicts with the help of some particular attribute like songs, genre, cast, etc.. This is a personalized list for every customer. This is even beneficial as it is time-saving and promoting even provides most-rated on the trendy list. Generally, there are four classes of movie recommender systems namely Simple recommender, Content-based, Collaborative filtering, and Hybrid based approach. In our research we intend to use a mechanism of Content-based filtering that is individual to each user. It uses some techniques and recommends through ads, genre, music, etc..., based on user interests whereas collaborative filtering is a method of making automatic predictions about the interest of a user by collecting preferences from many users. More than these recommender systems, Hybrid recommender system is more efficient to be used. This approach may provide higher efficiency and reliability.

Keywords: Recommender system, Simple recommender, Content-based, Collaborative-filtering, Hybrid movie recommender

1. Introduction

Since we all know that the world is developing faster everyday. Everything has become very easier but good technical way. Nowadays people don't even go out for shopping by their own, they are purchasing all online. A recommender system is used to predict or recommend the items which are expected by the user. Likewise, there are movie recommender systems that recommend movies with respect to the user's interest. Each user will be having different interests, there are different types of movie recommender systems. Every user has different preferences like the taste of a single user can vary depending on large number of factors such as mood, likes or dislikes. Since each user is different there are different types of approaches.

1.1 Types of Movie Recommender System

Movie recommender systems are used to recommend the movies to the users based on their interests. The systems aim to suggest relevant movies to the users. The recommender systems not suggest movies there are even more recommender systems that suggest music, books, products, etc. There are four types of movie recommender systems. Namely:

- Simple Recommender
- Content-based system
- Collaborative-filtering
- Hybrid system

1.1.1. Simple Recommender System

The simple recommender shows generalized recommendations to every user based on movie popularity and sometimes genre. Movie popularity means the users are highly rated, genre means story, director, heroes, heroines, music directors they show some content-based. The implementation of this model is extremely the process of finding and bringing back information. The movies need to be sorted based on parameters like ratings and popularity and display the highest rated movies on the list.

Simple recommender systems are very useful to get a list of trending movies. In this systems, not the number of votes for the movie is taken but its average is taken. It gives recommendations to every user without checking their personal profiles.

1.1.2.CONTENT-BASED RECOMMENDER SYSTEM

This type system filters the movies based on users past interactions on an item that is if one person likes an item repeatedly then it will be recommended in future. This can be done by grouping users past interactions of his profile. Here it will use only single user's data where other systems use multiple users data. Also, it causes a drawback called excessive specialization. If a user is inquisitive towards multiple genres then it will be difficult to generate the movies outside those genres even though it might be interesting to them.

However it's relatively simple to feature new movies to system. This approach is based on similarity of movies and doesn't include other users. So that diversity is less in these recommendations. Cosine similarity is most widely used algorithm for this type of systems.

1.1.3.COLLABORATIVE-FILTERING RECOMMENDER SYSTEM

Collaborative filtering works based on users given ratings or different users interest to watching same movies. This type of collaborative filtering approach is called as the user-to-user approach, many websites like YouTube, Netflix and Spotify used to build their recommendation system. It is currently one of the best recommendation approach and usually provides better results than content based recommendation system. This approach is based on the idea that the test user will be recommended movies that are watched and liked by similar users. To know whether two users are similar or not, it considers the movies watched by both of them and their ratings that are given by them.

They are two types of the collaborative filtering system include two methods namely, user-based filtering and item-based filtering. The main advantage of the collaborative filtering approach is that it does not rely on machine analyzable content and thus it is capable of accurately recommending complex items such as movies without replacing an understanding of the item itself.

- **USER-BASED FILTERING**

These systems suggest products to a user based on what other users have liked. Although the computation in user-based Collaborative filtering is very simple, it has significant flaws. One of the most significant issues is that users' tastes can shift over time. It implies that precompiling the matrix depending on the users' neighbours may result in poor performance. We can use item-based Collaborative filtering to solve this problem.

- **ITEM-BASED FILTERING**

This method suggests products based on their similarity to the ones assessed by the target user. As an item-based system, it successfully avoids the problem of changeable user preference. Filtering by collaboration is more static. This technique, however, has a number of flaws. First and foremost, there is the question of scalability. Both the customer and the product contribute to the computation. With m users and n items, the worst-case complexity is $O(mn)$. Aside from that, sparsity is a worry.

1.1.4.HYBRID MOVIE RECOMMENDER SYSTEM

There was no user interference in a Content-based recommender system because any user would be recommended the same set of movies after watching similar movies, whereas there will be no relationships between movies watched by the user in Collaborative filtering. For example, if the user enjoys action movies, the recommendation system would not capture his genre interest. As a result, the Hybrid Movie Recommender System was born, which aims to combine both Content and Collaborative Filtering approaches to provide recommendations for users, combining the benefits and removing the drawbacks of each.

CONCLUSION

The different types of recommender systems are briefly discussed in the study. Depending on the requirements, we can employ a variety of ways. We recommend movies in the Simple recommender system based on their popularity and rating. To make recommendations, the Content-based recommender uses metadata like as cast, crew, genre, and so on. Collaborative-filtering is based on user ratings or several users' interest in watching the same movie. Finally, the hybrid approach combines content-based and collaborative-filtering approaches to compute the system. This hybrid recommender system overcomes all of the previous systems' flaws. This method can be improved to propose videos, music, books, and other media.

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