

Movie Recommendation System (MRS Prime)

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Abstract: Now-a-days, the recommendation system has made finding the things easy that we need. Movie recommendation systems aim at helping movie enthusiasts by suggesting what movie to watch without having to go through the long process of choosing from a large set of movies which go up to thousands and millions that is time consuming and confusing. In this article, our aim is to reduce the human effort by suggesting movies based on the user's interests. To handle such problems, we introduced a model combining both content-based and collaborative approach. It will give progressively explicit outcomes compared to different systems that are based on content-based approach. Content-based recommendation systems are constrained to people; these systems don't prescribe things out of the box, thus limiting your choice to explore more. Hence, we have focused on a system that resolves these issues.

Keywords: Movie recommendation, rating, genre, recommender system, hybrid filtering.

1. Introduction

Recommendation systems are a type of information filtering system which attempts to predict the preferences of a user and make suggests based on these preferences. These have become increasingly popular over the last few years and are now utilized in most online platforms that we use. The content of such platforms varies from movies, music, TV shows and videos to friends and stories on social media platforms, to products on e-commerce websites, to people on professional and dating websites. Every user has different preferences and likes and even the taste of a single user can vary depending on a large number of factors such as mood, seasons or type of activities the user is doing.

The evolution of technology brings us many advanced platforms such as Machine Learning, Deep Learning, Data Mining, the Internet of Things (IoT), etc. To satisfy the need of society, almost in each work, we use this technology. It has many real-life applications such as PowerShell, TP, IoT, Cloud Computing, Artificial Intelligence, Uncertainty, virtualization Environment, SPP, and so on. IT is the mode to store, fetch, communicate and utilize the information. So, all the organizations, industries and also every individual are using computer systems to preserve and share the information. As we probably are aware, the world is becoming quicker and everybody is moving towards accomplishing their objectives. Individuals need more time to go to the market and purchase things not simply that, they don't have the opportunity to pick between things. What's more, this has prompted the innovation

of recommendation systems. Recommendation systems have become well Corresponding Movie recommendation system using machine learning known now a days, be it in the field of entertainment, education, etc. Earlier, the users needed to settle on choices on what books to purchase, what music to tune in to, what motion pictures to watch and so on. Commercial movie libraries effectively exceed 15 million films, which boundlessly exceeds the visual ability of any single individual. With a large number of motion pictures to browse, individuals now and then get overpowered. Therefore, an efficient recommendation system is necessary for the enthusiasm of both movie service providers and customers. With the improvement of recommendation systems, the customers will have no agony in settling on choices and organizations can keep up their client gathering and draw in new clients by improving users' satisfaction. Additionally, nowadays the modern technologies like machine learning and deep learning also plays a vital role in the process flexible technologies for day-to-day operations. In this manuscript, we discuss about the recommendation by using hybrid filtering.

2. Objectives

1. The objective of our proposed system is to recommend appropriate movies to the users. According to the ratings, cast, genre of the other users provided they are in same cluster. This needs consistent updates in the cluster and database.
2. The system proposed is a kind of collaborative user base filtering system which finally recommends the likable movie to the users. Content based filtering recommends the movies as per the cast.
3. This will extract vital information and recommend the users according to user's preferences, interest, or history about movies. Our system is to use dataset which are to be thoroughly filtered in order to gain user's idea for movies.

3. Literature Review

Kumar et al. [8] proposed MOVREC, a movie recommendation system based on collaborative filtering approaches. Collaborative filtering takes the data from all the users and based on that generates recommendations. A hybrid system has been presented by Virk et al. [3]. This system combines both collaborative and content-based method. De Campos et al. [4] also made an analysis of both the traditional

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recommendation techniques. As both of these techniques have certain setbacks, he proposed another system which is a combination of Bayesian network and collaborative technique. Kuzelewska [5] proposed clustering as an approach to handle the recommendations. Two methods for clustering were analyzed: Centroid-based solution and memory-based methods. The result was that accurate recommendations were generated. Chiru et al. [7] proposed Movie Recommender, a system that uses the user's history in order to generate recommendations. Sharma and Maan [6] in their paper analyzed various techniques used for recommendations, collaborative, hybrid and content-based recommendations. Also, it describes the pros and cons of these approaches. Li and Yamada [8] proposed an inductive learning algorithm. Here a tree had been built which shows the user recommendation.

One undertaking from the above discussions is that recommendations systems have gained vital name and recognition among researchers because of their frequent look in varied and widespread applications within the fields of various branches of science and technology.

4. Proposed Methodology

1. Entertainment is a part of the life. We all want something to do in our free time. Many of us watch movies in our spare time for entertainment. But when we want to watch movies then we are confused which movie we should watch.
2. If someone recommends us a movie, then how easy will it be for us to watch a good movie? This will also save our time to find a perfect movie which we can comfortably watch in our spare time. That's why we have introduced this Movie Recommendation System, which recommends us movies based on the ratings of the users.

This section contains a series of steps and the methodology of the proposed system. How the system is going to operate, and events that are going to occur is briefly explained,

- 1) First, a new user is provided with a screen that contains a search bar that allows him to search for a particular movie.
- 2) It shows rating as per IMDB website (Internet Movie database).
- 3) There is a like button if the user likes any movie that movie will be add in the Watched list.
- 4) With the help of advance search option user can search movie as per the year and genres.

The filtering which we used in this movie recommendation system is collaborative filtering:

- 1) This system matches persons with similar interests and provides recommendations based on this matching.
 - 2) If a person A likes items 1, 2, 3 and B likes 2, 3, 4 then they have similar interest and A should like item 4 and B should like item 1. In this method user with similar interest have common preferences.
 - 3) It is entirely based on the past behavior not on the present context.
- *User-User Collaboration:* These systems recommend products to a user that similar users have liked. For

measuring the similarity between two users we can either use person correlation or cosine similarity. This computing is suffers from many problems. One main issue is that users' preference can change over time. It indicates that precompiling the matrix based on their neighbouring users may lead to bad performance. To tackle this problem, we can apply item-based CF.

- *Item Based Collaborative Filtering:* Instead of measuring the similarity between users, the item-based CF recommends items based on their similarity with the items that the target user rated. Likewise, the similarity can be computed with Pearson Correlation or Cosine Similarity.

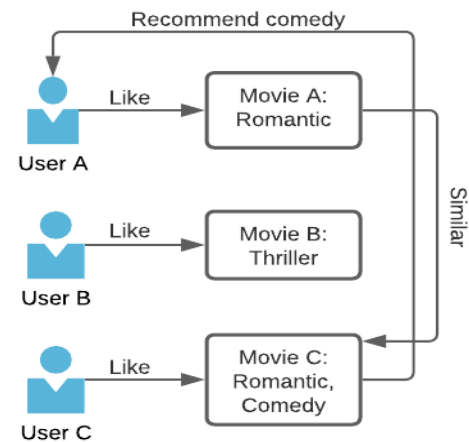


Fig. 1. Methodology

5. Conclusion and Future Scope

This recommendation system recommends different movies to users. Since this system is based on a collaborative approach, it will give progressively explicit outcomes contrasted with different systems that are based on the content-based approach. Content-based recommendation systems are constrained to people, these systems don't prescribe things out of the box. These systems work on individual users' ratings, hence limiting your choice to explore more. While our system which is based on a collaborative approach computes the connection between different clients and relying upon their ratings, prescribes movies to others who have similar tastes, subsequently allowing users to explore more. It is android application that recommends them appropriate movies based on other's ratings, cast and genre.

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