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Movie Recommendation Model from Data through Online Streaming

Runali Komurlekar¹, Prof. Rajesh Patil²

^{1,2}Electrical Department, Veermata Jijabai Technological Institute, Mumbai, India

Abstract: *With the Pandemic era and easy availability of internet, potential of digital movie and tv series industry is in huge demand. Hence it has led to developing an automatic movie recommendation engine and has become a popular issue. Some of these problems can be solved or at least be minimized if we take the right decisions on what kind of movies to ignore, what movies to consider. This paper examines the recommendations that are obtained with considering the sample movies that have never got an above-average rating, where average rating is defined here as the mid-value between 0 and maximum rating used, for example, 2.5 in 1 to 5 rating scale. The technique used is “collaborative filtering”. Comparison of different pre-training model, it is tried to maximize the effectiveness of semantic understanding and make the recommendation be able to reflect meticulous perception on the relationship between user utilisation and user preference.*

Keywords: *movie recommendation system, user similarity, user similarity, consumption pattern*

I. INTRODUCTION

Movie recommendation systems provide the user the movie suggestions that are more likely to be watched by him using some means like, using the user's past behavior, most watched movies, most rated movies, top rated movies, etc. It is difficult for the user to find out or chose a movie to watch. Out of thousands of available movies available on online platforms. Movie Recommendation Systems provide the movie suggestions and hence saves a lot of time of the user. It introduces interesting movies that the user may not be aware of. It filters the movies with the help of the other user experiences and different ratings. The main purpose is to engage the user with the app and hence monetize the user usage.

Studies conducted to predict and recommend movies to be purchased in the near future through customized analysis of individual users, and applications such as Netflix recommending movies and Amazon recommending products are increasing. In order to predict future consumption, user-based or item-based collaborative filtering algorithms are usually used. However, these methods are usually based on rating data provided by users, and this means that it can't be predicted without rating data. Therefore, a product without rating data can't be included in the recommendation list, which causes a sparsity problem. Also, since these conventional methods do not consider the time changes, it does not reflect the consumption pattern changes of users.

In this paper, a method to predict and recommend a movie by considering movie consumption patterns of user is proposed. The similarity between users based on movie rating data is measured and also users are classified with similar movie preferences. Movie consumption pattern of similar user groups is learned and movies are recommended as per prediction.

II. LITERATURE REVIEW

Lot of research discusses on Recommendation System issues like; evolution of recommender system over the time, Performance comparison of different recommendation algorithms, Comparison of various metrics used in collaborative filtering for recommendation system, Movie Recommendations Using the Deep Learning Approach, Item-Based Collaborative Filtering in Movie Recommendation in Real time, Recommendation Using Frequent Itemset Mining in Big Data, Graph-based Recommendation System, Employing Sparsity Removal Approach and Fuzzy C-Means Clustering Technique on a Movie Recommendation System, Similarity measures for collaborative filtering recommender systems, Film recommendation systems using matrix factorization and collaborative filtering, Performance analysis of recommendation system based on collaborative filtering and demographics.

Some studies, based on movie reviews, used different features to recommend movies. XS et al. presented a method to mine User/Movie Preferred Features based on reviews text. According to their research, more than 70% of customers consult reviews or ratings before purchasing a DVD. Besides purchasing a DVD, viewers also check movie reviews before deciding to buy movie tickets. They applied LDA for finding hidden aspects of user preference and movie features. KL divergence is used for measuring the similarity between movies and users. Compared to their approach, we build the connection between user reviews and user past selection and user engagement.

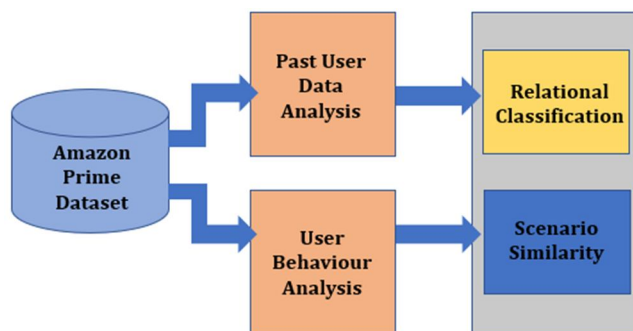
IV. PROBLEM STATEMENT

The research is conducted to select an effective approach to generate leads from the data sets of online streaming and recommend a movie to the user. The recommended movie is based on both the past data collected from different users and present data of user engagement with the category of movies s/he prefers.

The dataset of 4000+ entries and 200+ movies can be used to analyze data on factors like most watched movies, top rated movies, most rated movies, average rating for movies, etc. The collected sample data analysis can further be used to effectively recommend movies to the users.

V. PROPOSED SOLUTION

The proposed solution is a workflow and system architecture shown to demonstrate the dataflow and to involve relationship and scenario, obtain pre-train model of relationship and scenario and two-step recommendation based on relationship classification and scenario similarity calculation.



The Amazon data set collected from Simplilearn sources has almost 4000 entries.

- 1) The data will be divided into training and test data.
- 2) Build recommendation model on Training dat
- 3) Make predictions on test data
- 4) Use the results to build a algorithm to mine data and generate the effective leads.
- 5) Recommend movie as per leads generated.

The aim is to analyze each variable of the data collected through data summarization to get a basic understanding of the dataset and to prepare for further analysis. As mentioned earlier, a analysis will represent the number of movies with top rating, maximum average rating, during which that page was viewed one or more times. A visit counts all instances, no matter how many times the same visitor may have been to your site. So the team needs to know whether the unique page view value depends on visits. - Find out the probable factors from the dataset, which could affect the exits. Exit Page Analysis is usually required to get an idea about why a user leaves the website for a session and moves on to another one. Please keep in mind that exits should not be confused with bounces. - Every site wants to increase the time on page for a visitor. This increases the chances of the visitor understanding the site content better and hence there are more chances of a transaction taking place. Find the variables which possibly have an effect on the time on page. - A high bounce rate is a cause of alarm for websites which depend on visitor engagement. Help the team in determining the factors that are impacting the bounce.

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