Movie Recommender System: Movies4u

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Abstract:
Many of the largest E-commerce Web sites are implementing recommender systems to help their customers find which products to purchase based on filtering techniques. Recommender systems help E-commerce sites to increase their sales. A movie recommendation system named MOVREC, based on collaborative filtering approach makes use of the information provided by users, analyzes them and then recommends the movie that is best suited to the user at that time using k-means algorithm. In this paper we study techniques i.e collaborative filtering recommender systems to learn about new users and their interests. These technique consist use of information theory to pick out the items that will give the most value to the recommender system, aggregate strategy to select the items the user is most likely to have an opinion about, and personalized techniques that predict which items a user will have an opinion about. This knowledge will empower researchers and serve as a road map to improve the state of the art recommendation techniques.

I. INTRODUCTION

Recommender systems [16] constitute one of the fastest growing segments of the Internet economy today. They help reduce information overload and provide customized information access for targeted domains. Building and deploying recommender systems has matured into a fertile business activity, with benefits in retaining customers and enhancing revenues. Elements of the recommender landscape include customized search engines, handcrafted content indices, personalized shopping agents on e-commerce sites, and news-on-demand services. The scope of such personalization thus extends to many different forms of information content and delivery, not just web pages. The underlying algorithms and techniques, in turn, range from simple keyword matching of consumer profiles, collaborative filtering, to more sophisticated forms of data mining, such as clustering web server logs. Recommendation is often viewed as a system involving two modes (typically people and artifacts, such as movies and books) and has been studied in domains that focus on harnessing online information resources, information aggregation, social schemes for decision making, and user interfaces [17].In this paper, we aim to use collaborative filtering recommendation and actively contribute recommendation that satisfies users' tastes. Design is on the base of data from famous online movie database Movie Lens. Here data collected is not anonymous and is collected in a safeguarded manner. This data collected is not fake as user has to login with his/her complete details (user login id, user password). User can view related links of the movies which are recommended to them. Further filtering techniques are applied and user's recommendation page is updated. Recommender systems use the user, item, and ratings information to predict how other users will like a particular item. Recommender system will become an integral part of the Media and Entertainment (M&E) industry in the near future. There are majorly six types of recommender systems which work primarily in the Media and Entertainment industry: Collaborative Recommender system, Content-based recommender system, Demographic based recommender system, Utility based

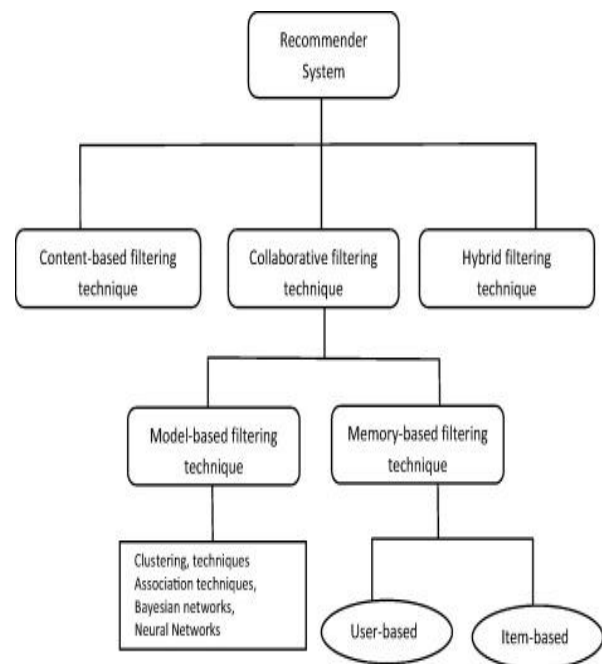recommender system, and Knowledge based recommender system and Hybrid recommender system.

Figure. 2. Types of filtering

i.   Content-based filtering.

Content-based technique is a domain-dependent algorithm and it emphasizes more on the analysis of the attributes of items in order to generate predictions. When documents such as web pages, publications and news are to be recommended, content-based filtering technique is the most successful. In content-based filtering technique, recommendation is made based on the user profiles using features extracted from the content of the items the user has evaluated in the past. Items that are mostly related to the positively rated items are recommended to the user. Content-

based filtering technique does not need the profile of other users since they do not influence recommendation [15].

CONTENT-BASED FILTERING
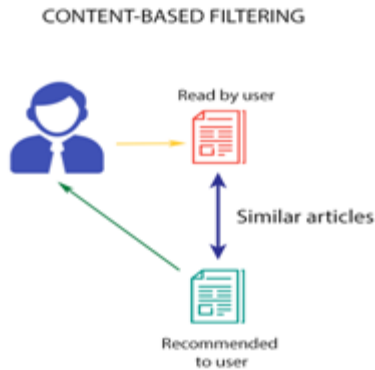
ii. Collaborative filterin

Collaborative filtering is a domain-independent prediction technique for content that cannot easily and adequately be described by metadata such as movies and music. Collaborative filtering technique works by building a database (user-item matrix) of preferences for items by users. It then matches users with relevant interest and preferences by calculating similarities between their profiles to make recommendations. The technique of collaborative filtering can be divided into two categories: memory-based and model-based filtering [15].

COLLABORATIVE FILTERING

iii. Hybrid filtering

Hybrid filtering technique combines different recommendation techniques in order to gain better system optimization to avoid some limitations and problems of pure recommendation systems. The idea behind hybrid techniques is that a combination of algorithms will provide more accurate and effective recommendations than a single algorithm as the disadvantages of one algorithm can be overcome by another algorithm [15].

II. LITERATURE SURVEY

Recommender systems handle the problem of information overload that users normally encounter by providing them with personalized, exclusive content and service recommendations. Recently, various approaches for building recommendation systems have been developed, which can utilize collaborative filtering, content-based filtering or hybrid filtering [9–11]. Collaborative filtering technique is the most mature and the most commonly implemented. Collaborative filtering recommends items by identifying other users with similar taste; it uses their opinion to recommend items to the active user. Collaborative recommender systems have been implemented in different application areas. GroupLens is a news-based architecture which employed collaborative methods in assisting users to locate articles from massive news database [9]. Ringo is an online social information filtering system that uses collaborative filtering to build users profile based on their ratings on music albums [10]. Amazon uses topic diversification algorithms to improve its recommendation [13]. The system uses collaborative filtering method to overcome scalability issue by generating a table of similar items offline through the use of item-to-item matrix [15]. Content based techniques match content resources to user characteristics. Content based filtering techniques ignore contributions from other user as with the case of collaborative techniques. Collaborative filtering and content based filtering approaches are widely used today by implementing them differently and later combining their results or adding a characteristics of content based to collaborative based and vice-versa [12]. In another recommendation system the system will generate recommendations based on the used items of other users whose preferences are similar to current user. These techniques are only applicable when we want to predict things or items for a single user. This approach can be extended to a group recommender system. Demonstration of lack of relationship between user-centered metrics and objective-metrics is done. A metric is used to balance the weight of each of the user-centered metrics (relevance, novelty, global satisfaction, serendipity) combining them into a single value in order to have a more reliable way to judge. It's easier for the user to express an opinion about the recommendation instead of answer 60 questions (short questionnaire rather than long version proposed in ResQue model). This work can be easily expanded into other parameters. User did not perceive positively the non-personalized algorithm and the result is different because the user perceived these recommendations as non-pertinant to his/her choices [19]. The datasets are used as benchmarks to develop new recommendation algorithms and to compare them to other algorithms in given settings .In this section, we present an overview of different datasets, which are available in different domains.

- **MovieLens Dataset**

  There are three datasets of different. All data is collected through the MovieLens web site. The 100K and 1M datasets contain simple demographic information about the users (age, gender, occupation, zip) while the 10M data set only contains user id

- **NetFlix Dataset**

  Netix, the world's largest online DVD rental service, is the 1-million Netix Prize for improving their movie recommendation service.

- **MoviePilot Dataset**

  The MoviePilot dataset contains 290 unique households with between two to four members, and a total of 602 users,

of which the majority has been assigned to a particular household. The dataset contains information about which user rated which movie at which time.

III. CONCLUSION

Recommender systems open new opportunities of retrieving personalized information on the Internet. It also helps to alleviate the problem of information overload which is a very common phenomenon with information retrieval systems and enables users to have access to products and services which are not readily available to users on the system. We come up with a strategy that focuses on dealing with user's personal interests and based on his previous reviews, movies are recommended to users. This strategy helps in improving accuracy of the recommendations. A personal profile is created for each user, where each user has access to his own history, his likes, ratings, comments, password modification processes. It also helps in collecting authentic data with improved accuracy and makes the system more responsive.

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