

Book Recommendation System Using Machine Learning

Shivam Goswami

Department of Electronics and Communication Engineering
KIET Group of Institutions
Ghaziabad, India

Shivam Mishra

Department of Electronics and Communication Engineering
KIET Group of Institutions
Ghaziabad, India

Shobhit Chaudhary

Department of Electronics and Communication Engineering,
KIET Group of Institutions
Ghaziabad, India

Ajeet Pratap Singh

Department of Electronics and Communication Engineering
KIET Group of Institutions
Ghaziabad, India

Abstract:- In today's world, people focus on reviews and ratings available online. Recommendation system works like a filtering technique that provide information on the basis of previous user experience. These technologies used in various websites and apps to provide better experience to user and also used to gain profit. This study suggests fast and simple book recommendations method which help user to select right books based on their choice. Its thorough description is offered together with the general architecture. In this system collaborative filtering was employed. lastly, additional details are depicted with test results based on the online survey.

Keywords:- Book, Collaborative Filtering, Recommendation System, User Ratings.

I. INTRODUCTION.

The magnitude of knowledge accessible nowadays is exploding, especially online. It gets difficult to find the data you required. Such issues are what recommendation systems are meant to address. Without having to actively search the web, one can swiftly acquire pertinent information with their assistance. As a result, recommendations systems are used by numerous websites today to market and sell their items [1]. A long row of things such as books, music, movies, services and many more can be suggested to the customer on the basis of their online profiles or even social media accounts, online history, including links they have visited, search activity, including the time and duration of their activity, and other online behaviors. These technologies are helping online stores boost up their revenue.

In this study, we show that recommendation algorithm works like a filtering system that shows user a book on the basis of rating, reviews and past activity of an user. We developed a system that gain an understanding of user preferences by analyzing user rating on books and generate a record or table that user is most likely want to read based on their choice.

An overview of the literature on associated studies is given in Section 2. Section 3 outlines the specific ways in which the suggested system. The evaluation process and its findings are given in Section 4. In Section 5, we made some conclusion.

II. RELATED WORK

During the last few years, the study of recommender system has expanded significantly. Recommendation systems employ a variety of strategies to make appropriate recommendations. Conventionally Both collaborative and content- based filtering are employed. In content-based filtering system recommends an item to user on the basis of user preference for an item [2]. Contrarily, it is not compulsory that user preferred content in past will also prefer same content in the future. Information about their preferences can be gathered based on how they rate items. The effective application of recommender system is the Amazon corporation recommends a variety of their items in a very effective and efficient manner. Furthermore, Hybrid recommender system is used that combines the two previously mentioned methods which can be used by most of the online sites to enhance their efficiency [3].

Today, there are numerous book recommendation systems. The developers of these technologies leverage data from social media to understand user preferences in order to make the best recommendations.

In this work, we provide a recommendation system that assesses the buyer's interests in order to offer the customer the best choice. Using collaborative filtering, association rule mining and content-based filtering, the quality and content are taken into account from [4]. Our aim is to provide user recommendations by considering experience of search in a coherent and well organized manner.

III. PROPOSED SYSTEM

The current services require a better user profile information [5]. customers sign up for such platforms, peruse reading material, and give them ratings, write reviews, pass along suggestion. A system formulates its recommendations using this data. Our recommendation engine emphasizes efficiency and quickness. After applying, the user must choose their top books from at least three different categories. The suggestion offered by the system based on this data. The user can keep rating books, buying them, and adding them to their reading list, all of which will help the recommender system to improve accuracy. A user can update a database by rating the books using a straightforward search and filtering interface, and they will then receive the right book recommendations. These suggestions based on a collaborative filtering process.

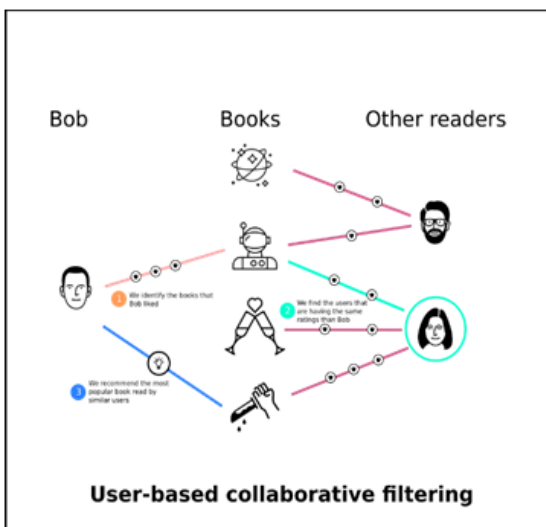


Fig 1 collaborative filtering

A. Accumulate Details.

The data used in a recommendation system is crucial. In recommender system data should be gathered to make system more accurate and reliable. We selected information for that aim from already-available resources such as a website that offers thousands of books that contains various genres and categories. Data accumulated and stored in MYSQL. There are roughly 20,000 popular books total.

B. Evaluation of User liking

There are two distinct kinds of customer in the system: unregistered and registered customers [6]. Visitors can search a book according to their preference and read basic information about that book. Registered users have the advantage to rate the books and get system recommendation.

After registering, firstly a customer was requested to choose two or more of his preferred type (see Fig. 2) and then rate at least 10 books to know their preferences. An inbuilt search box given in a system for a customer to find book on the basis of their preferred choice.

Home Page



Fig 2 web page

C. Providing Recommendations Following user preference learning, the system offers suggestions (see Fig. 3). Recommended list can be bisected into different group or class.

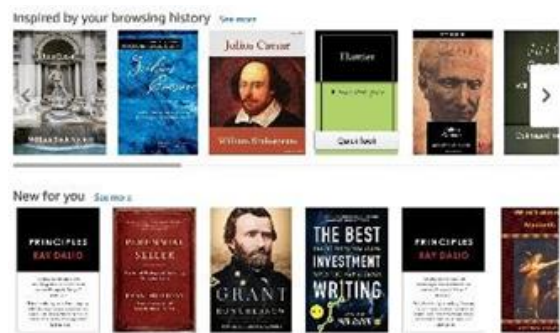


Fig 3 suggestion row

We employed collaborative filtering to make the suggestions for our system. It gathers an immense quantity of data regarding a customer tastes collaborative filtering is a method for providing recommendations on various products. As it was previously said [7], the idea behind this method is that if two users (users A and B in Fig. 4) have similar views for one item, it is more likely that they will have similar preferences for other items rather than with a different user. Realizations from a collaborative filtering can take many diverse forms. One of them is constructed using neighborhood-based methods that compute similarity between two items.

	Book 1	Book 2	Book 3	Book 4	Book 5
User A	👍	👎	👍		👍
User B		👍		👎	👎
User C	👍	👍	👎		
User D		👍	?		👎

Fig. 4. Preference table

IV. EXPERIMENT RESULTS

Three types of recommendation systems are distinguished: A user study analyses quantitative and qualitative metrics and watches the behavior of a group of participants who will interact with the system, while an offline experiment simulates user behavior. Actual users of the system perform tasks while it is being evaluated. We chose to conduct our research via an online survey since, as far as we are aware, there is no database that is currently available that is appropriate for our work and because online evaluation has not yet been implemented. As a result, we made the decision to develop an online tool to evaluate the performance of our system.

We chose a group of independent readers and asked them to rate the system on factors like the relevance of the recommendations and the practicalities and the system's functionality (0–10). A higher score suggests that the advice is more pertinent.

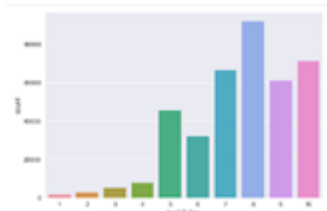


Fig 6 Experiment Result

Despite the excellent outcomes of the internet survey, users identified several system-related issues. One of them was the issue that suggestions are less helpful when the same book appears in multiple categories. This is due to some genres being closely related, making it possible for things from those genres to appear in both genres.

V. CONCLUSION

In this research, book recommendation system based on collaborative filtering described. The primary objective was to make recommending system efficient. The main aim to develop a system that can provide users with appropriate suggestion without requiring extensive profile information, search history, etc. The output of the experiments shows that the suggested method offers appropriate suggestion to users.

REFERENCES

- [1]. Zhao kai, Lu Peng-Yu ,“ Improved Collaborative filtering approach based on User similarity Combination”,IEEE International Conference on Management Science & Engineering ,Helsinki, Finland ,2014,pp 238-241.
- [2]. Pasquale Lops, Marco De Gemmis, and Giovanni Semeraro. “Content-based recommender systems: State of the art and trends.” In: Recommender systems handbook. Springer,2011, pp. 73–105.

- [3]. Pijitra Jomsri, “Book recommendation System for Digital Library based on User profile by using Association rule”, Thailand, IEEE, 2014, pp 130- 134.
- [4]. Raymond J Mooney and Loriene Roy. “Content-based book recommending using learning for text categorization.” In: Proceedings of the fifth ACM conference on Digital libraries. ACM. 2000, pp. 195–204
- [5]. Anand Shanker Tewari, Kumari Priyanka ,”Book Recommendation system based on Collaborative filtering and association rule mining for college students”,IEEE,2014,pp135-138
- [6]. Xiaoyuan Su and Taghi M Khoshgoftaar. “A survey of collaborative filtering techniques.” In: Advances in artificial intelligence 2009 (2009), p. 4
- [7]. Jinny Cho, Ryan Gorey, Sofia Serrano, Shatian Wang, JordiKai Watanabe-Inouye, “Book Recommendation System” Winter 2016.