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PG Recommendation

Mohit Sharma[1], Hritik Baliyan[2], Akhil Chikara[3], Govind Sharma[4]
[1, 2, 3, 4]*Department of ComputerScience & Engineering Inderprastha EngineeringCollege, Uttar Pradesh, India*

Abstract: When you plan of going to study far away from your comfort zone, one of the first things to do is to book a good place to stay. Booking a PG online can be an overwhelming task with thousands of PG to choose from. Inspired by the importance of these situations, we made a decision to apply our skills on the task of recommending PG to Students. We used a hotel recommendation dataset, which provided us with a variety of features that helpedus gain a deeper understanding of the process that makes a user choose certain PG. The aim of this PG recommendation project is to predict and recommend best PG to a user that he/she is more likely to book from the given hundred distinct choices.

I. INTRODUCTION

The pandemic has affected almost each and every sector across the world and the hotel industry is one of the hardest hit. The pandemic has changed the way we work, learn and communicate but the majorthing that has been affected is a decent place to live.
As everyone wants to live in a safe and sanitized environment but due this pandemic, the shortage ofhomes and proper maintenance has decreased.
When you plan to study far away from your comfort zone, one of the first things to do is to booka good place to stay.
Booking a PG online can be an overwhelming task with thousands of PG to choose from. Inspired by the importance of these situations, we made a decision toapply our skills on the task of recommending PG to students.
This project will help students as well as peoplewho are living far from their homes for work.
Our target audience will include two groups ofpeople i.e. landlords with houses for rent and Individuals with demand for a rental place. After getting the desirable place the students/working professional can select the placehe/she is interested in.
The objective of this project is to develop an Interactive website for the Booking of the PG especially for the students and provide recommendation system for the ease of the user andalso provide interface for the owner to add/delete property.
The background about the project idea is that whenever anyone is in need of pg they can get it through our website. Our website provides every detail about the pg and the pricing and features of thepg. Also it tells about the availability of the rooms.

A. Recommendation Systems: Its Overview,Research Trends and Future Path

From the past few years, The recommendation system has come up as a crucial research field that targets to help users to find products online that match their interests by providing suggestions. This project provides a regressive study on the Recommendation System which covers the various approaches of recommendation and also various methods used for information retrieval. Because of its widespread applications, it has generated research interest among a huge number of researchers around the world. The main motive of this paper is to find out the trends in Recommendation Field. Over 1000 research papers has been published byseveral publications from 2011 to 2016 and have been studied. Several intriguing outcomes have come out of this study, which will help the present and upcoming researchers to study and set their research Pathways.

B. Knowledge-based Recommender System (KBRS)

Whenever we search a product like bike, car, flat etc., which are not purchased on a regular basis. It becomes difficult to recommend due to lack of proper information about these search items.
For that, few extra information (e.g., the user's website activity) is needed. This system provide recommendation based on extra understanding model which relates to the connection between the current user and things. Case based reasoning method is a basic feature of KBRSs which breaks the user's requirement into various features, depending on different methods and provide similar recommendations that closely matches to user's likely proclivity. Another type of KBRS, known as constraint-based RS which works as per the user's proclivity and shows items that match the preference of user. If search item is unavailable, then a set of another items that are close to the searched item is recommended. Exegetic web technology can play an important role in establishing a diversified knowledge base ofthe users and the products. It utilizes ontologies, a formal knowledge representation the method that is used to express the domain understanding of users and various component.

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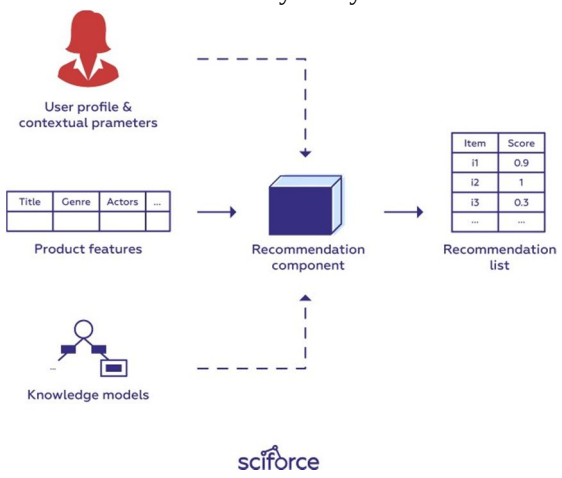
The similarity between products can be measured based on their respective category. Data of a user outline and component statement are used to show a proper matching for the Recommendation. Various issues of common RSs are eliminated by using exegetic-based RS. More details of the exegetic-based RS can be found in the given component. For example, The writers suggested and checked the preference of a exegetic-based recommendationsystem for the social network.

We know that, KBRS is capable of providing the needed data which is unable to be reached through the standard techniques, the knowledge modelling and operate methods in KBRSs are relatively costly in nature.



C. Recommendation System for AcademicLiterature

Due to the massive expansion in the size of research paper, the level of Recommendation System has increased,as it can guide the researchers to find a well suited result for them from this collection.

The recommendation techniques like collaborative- filtering, content-based does not allow the user to provide their personalized requirements; therefore the focus is inclined towards the customized Recommendation Systems that can inspect user's choices by interpreting their inputs.

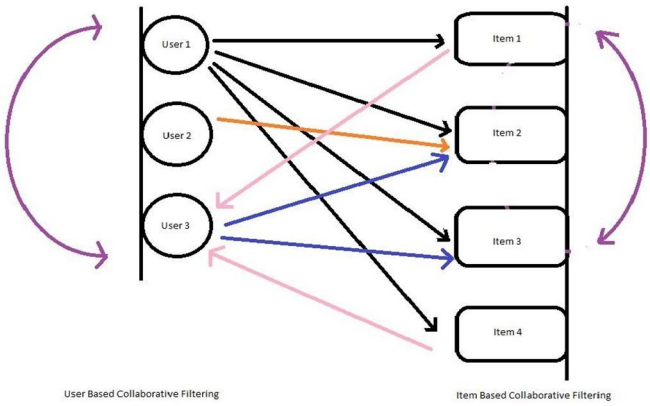
But the world class recommendation methods satisfyinguser's personalized needs make a powerful assumption of dataset.

In the project we are aiming to present a on-demand Recommendation System which can confess the fast growing nature of the research paper.

For achieving the needful, the EIHI (Efficient Incremental HighUtility Itemset Mining algorithm) has been newly inaugurated in the compositions, is used which is focused towork with changing data.

Practically obtained outcomes show that the proposed system convince the researcher's personalized needs and also handles the incremental nature of this analysis paper efficiently.

D. Collaborative Filtering Recommender System(CFRS)



Collaborative filtering methods

This is the most famous and widely used RecommendationSystem.

It follows the belief of "a man is known by his company he keeps." Which means if CFRS believes that if two or more user's interests matched in the past, then it is obvious that in future too their interests should be similar.

Let's consider a scenario, if the purchase history of a user A and user B strongly match then there is a high probability thatif user A buys an item, then user B will also purchase the same or the similar item. Collaborative Filtering focuses on keeping track of the user's earlier feedback and ratings on the products to suggest same products to the user for upcoming use.

Even if the user did not search with a specific item, it would be suggested to user if his squint have used the similiar. It iscertain that to get good recommendation accuracy, consideration of a amount of customer groups are needed.

Trust is a significant parameter for trustworthy recommendation. Moghaddam has added a trust-based CF a method to show a temporal-trust-based method to calculate trust value. The ways of work in Collaborative Filtering details can be found in Ekstrand.

II. RESULTS AND CONCLUSION

After completion of the project, one is able to searchbook pg in his nearby locations easily and it will alsorecommends based on the previous search of the user. After getting the desirable place the students/working professional can select the place he/she is interested in, the user will get the personal details of the owner, he/she can get in contact with the owner and go for further processing. • Also, if someone wants to post the room for rental purposethen this can also be achieved by visiting our website.

To choose among variety of options and based on the huge amount of virtual information is always will be a difficult and bemuse work. Online RS help us to control this. In order do this task competently and correctly, RSs exert useful methods for information retrieval and filtering.

In the earlier years, great research work has been resulted to achieve this kind of results, and various recommendation methods and processes are shown. In the paper, an summary of the various recommendation approaches used in RS such as content-based, collaborative, demographic, hybrid, knowledge-based, and context-aware recommendation has been depicted.

Different issues faced during the designing and implementing RS such as small content analysis, over-specialization, sparsity, scalability, synonymy, abbreviation, and problem like black box are also given.

III. ACKNOWLEDGMENT

It gives us a great sense of pleasure to present the researchpaper on PG Recommendation System during our final year (B.Tech). We would like to extend our heart-felt thank you to our mentor Miss Kirti Kushwah, for her constant support and guidance throughout the course of our project work.

Her sincerity, thoroughness, and perseverance are continuing sources of inspiration for us. It is only her cognizant efforts that our endeavor has seen the light of the day. We also take the opportunity to acknowledge the contribution of his full support and assistance during the development of the project.

IV. FUTURE SCOPE

Till now, majorly all the Recommendation Systems had been made for sellers, customers, and providers, i.e., they are designed to attract needful persons.

It is our firm belief that upcoming Recommendation System will not only be limited to business, but they will have a great impact on our day to day life. These systems will become truly omnipresent and become an important tool in every sector of our life. The future RSs will not be bound only to the applications for purchasing and selling products; Infact it will act as a kind of personal mentor which will help in every sphere of life by giving necessary help.

The perfect RS should be like somebody who identifies us better than we know ourselves, just like a friend. They should be able to detect our requirements and will tell accordingly, even if we do not show precising. Various fields like the internet of things (IoT), AI, cognitive computing, affective computing, etc., will make a great impact in future.

It will be applied to a wider range of applications and also will be able to map user and items better by understanding not only users but also the items. Future Recommendation System will diminish the demarcation between search and recommendations. In fact, Recommendation system will be an important part of the future search engine which willbe able to offer personalized search. It becomes confusing for the customers to finds the argumentation behind the recommendation they get Herlocker. The RSs will be more open. It is therefore important if we are doing a combination of searching and recommending. If people understand the recommendation pattern, they will search more judiciously.

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The Recommendation system will be more intuitive and will continuously improve the contents of the recommendation by taking up user feedback from different origins. It will become ductile by supporting different reiews. Future RSs will come up with innovative recommendation methodologies using reinforcement learning or extensions of recurrent neural networks (RNN) which will allow them to be accurately context, time, and mood-aware.

It will not only be designed to recommend similar items to user but also to understand when and whatto recommend and what not to recommend to the user..

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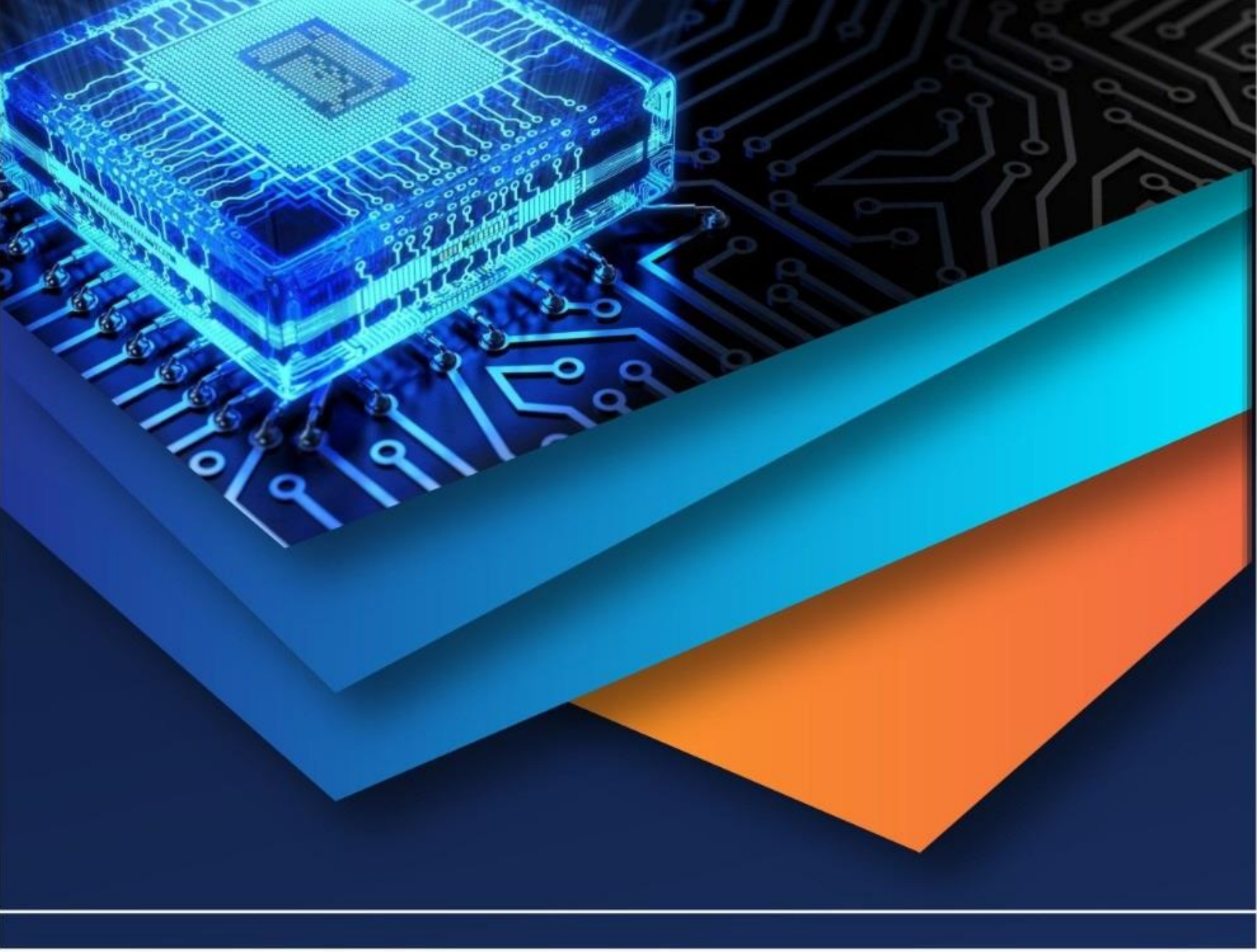

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