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Social users rating behaviors for online shopping

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Abstract – ***In this paper we put forth a survey that reinforcing the implementations of the rating behavior among the social consumers in online shopping. The proposed outcome of the project is to provide an enjoyable and everlasting experience to provide interactive features such as chat room and Instant messaging service, email support, feedback and reviews, currency conversion, like or dislike of the user comments and so on. Interpersonal rating behavior diffusion is proposed to deeply understand users of the social circle which mainly include direct friends, mutual friends, and the indirect friends, for deeper understanding' of rating behaviors .These series of experimentations performed will outperform the disadvantages of the existing system.***

Key Words: Recommended System, SignalR, ColdStart problem, Sparsity

1. INTRODUCTION

This chapter deals with the general introduction of the project, existing system, and the proposed system for this project. General gives a broad introduction about the project and tools to implement it.

1.1 GENERAL

Showcasing is essentially helps the buyer's needs more viably and proficiently with great item and administrations with best cost and conveyance. A decent advertiser consistently fulfilling shoppers needs in better way. Once in a while chance to give the purchasers in better way is outlined by advertisers himself and once in a while it is offered by the innovation. Web is changing the way buyers search for merchandise and enterprises and has quickly advanced into a worldwide occasion. Rowley Jennifer, (1998) analyzed that web is turning into a hotbed of publicizing, shopping and business action. Hsieh et al., (2013) expressed that web is impacting individuals' every day life all the more so when contrasted with past. Individuals' every day exercises have steadily moved from physical conditions to virtual condition . The shopping and installment environment have additionally changed from physical store into online stores. Weiber and Kollmann, (1998) examined that online advancements give numerous upper hands like spryness, selectivity, independence and intuitiveness. Li Na and Zhang Ping, (2002) analyzed that web based shopping has turned into the third most famous Internet movement, promptly taking after email utilizing, texting and web perusing. Jush and Ling, (2012) characterized web based shopping as the procedure a client takes to buy an administration or item over the web . A shopper may at his or her recreation purchase from the solace of their own home items from an online store. Suresh et al., (2011) expressed that internet shopping is getting to be distinctly mainstream in India now. Comscore report, (2013) analyzed that India is presently the world's third biggest web Population. More youthful guys and ladies matured 35-44 rise as power users.73.8 million Indians surfed the web through a home or work PC. BCG report, (2012) expressed that there will be three billion web clients comprehensively, a large portion of the total populace. The web economy will reach $4.2 trillion in the G-20 financial matters. In the event that it were a national economy, the web economy would rank on the planet's main 5, behind just the USA, and India, and in front of Germany. Kanwal Gurleen, (2012) watched that India has more than 100 million web clients out of which one half decides on online buys and the number is rising forcefully consistently. The development in the quantity of online customers is more prominent than the development in Internet clients, showing that more Internet clients are getting to be distinctly agreeable to shop on the web. Up to this point, the shoppers by and large visit online to save inn rooms and purchase air, rail or motion picture tickets, books and contraptions, however now more disconnected item like garments - saris, kurtis, T-shirts-shoes, and planner undergarments, customer durables are being bought on the web. Ace Card Worldwide Insights, (2008) uncovered that 47% of web clients shop on the web. Indian shopping group is around 28 million and Indian

internet shopping business sector is worth about $71 billion. Indian online customers spend around 11% of their own wage in web based shopping.

1.2 LITERATURE SURVEY

Flipkart (Company) was founded in 2007 by Sachin Bansal and Binny Bansal, both alumni of the Indian Institute of Technology Delhi. They worked for Amazon.com, and left to create their new company incorporated in October 2007 as Flipkart Online Services Pvt. Ltd. The first product they sold was the book *Leaving Microsoft to Change the World* to a customer from Hyderabad. Flipkart now employs more than 33,000 people. Flipkart allows payment methods such as cash on delivery, credit or debit card transactions, net banking, e-gift voucher and card swipe on delivery.

After failure of its 2014 Big Billion Sale, Flipkart recently completed the second edition of Big Billion Sale held between October 13 and 17. Where it is reported that they saw a business turnover of 300 million in gross merchandise volume.

Amazon.com, Inc. often referred to as simply Amazon, is an American electronic commerce and cloud computing company with headquarters in Seattle, Washington. It is the largest Internet-based retailer in the United States. Amazon.com started as an online bookstore, later diversifying to sell DVDs, Blu-rays, CDs, video downloads/streaming, MP3downloads/streaming, audiobook downloads/streaming, software, video games, electronics, apparel, furniture, food, toys and jewelry. The company also produces consumer electronics—notably, Amazon Kindle e-readers, Fire tablets, and Fire TV —and is the world's largest provider of cloud infrastructure services (IaaS). Amazon also sells certain low-end products like USB cables under its in-house brand Amazon Basics.

Snapdeal is an online marketplace, based in New Delhi, India. The company was started by Kunal Bahl, a Wharton graduate as part of the dual degree M&T Engineering and Business program at Penn, and Rohit Bansal, an alumnus of IIT Delhi in February 2010. Snapdeal currently has 275,000 sellers, over 30 million products and a reach of 6,000 towns and cities across the country[3]Investors in the company include Softbank, Ru-Net Holdings, Tybourne Capital,premjiInvest, Alibaba, Temasek Holdings,Bessemer Venture Partners, IndoUS Ventures, Kalaari Capital, Saama Capital, Foxconn Technology Group, Blackrock, eBay, Nexus Ventures, Intel Capital, Ontario Teachers' Pension Plan, Singapore-based investment entity Brother Fortune Apparel and Ratan Tata. When Snapdeal acquired Free Charge in an equity deal, investors Sequoia Capital India, Valiant Capital, Sofina, Ru-Net Holdings, and Tybourne Capital also became shareholders in Snapdeal.

[1] **"Competence-Based Song Recommendation: Matching Songs to One's Singing Skill," Kuang Mao, Lidan Shou, Ju Fan, Gang Chen, and Mohan S. Kankanhalli, Fellow, IEEE.**

This paper proposes a novel competence-based song recommendation framework for the purpose of singing. We propose techniques to acquire singer profiles. We also present a song profile model which is used to construct a human annotated song database. Then we propose a learning-to-rank scheme for recommending songs by a singer profile. Finally, we introduce a reduced singer profile which can greatly simplify the vocal competence modelling process. The experimental study on real singers demonstrates the effectiveness of our approach and its advantages over two baseline methods.

[2] **"Enhancing Collaborative Filtering by User Interest Expansion via Personalized Ranking"**
Qi Liu, Enhong Chen, Senior Member, IEEE, Hui Xiong, Senior Member, IEEE, Chris H. Q. Ding, Member, IEEE, and Jian Chen, Fellow, IEEE

In this paper, we propose a novel collaborative-filtering-based recommender system by user interest expansion via personalized ranking, named iExpand. The goal is to build an item-oriented model-based collaborative-filtering framework. It helps to give more accurate ranking recommendation results with less computation cost and helps the understanding of the interactions among users, items, and user interests. Moreover, it deals with many issues such as the overspecialization problem and the cold-start problem. Finally, we evaluate iExpand on three benchmark data sets, and experimental results show that iExpand can lead to better ranking performance with a significant margin.

[3] **"Toward the Next Generation of Recommender Systems: A Survey of the State-of-the-Art and Possible Extensions",Gediminas Adomavicius, Member, IEEE, and Alexander Tuzhilin, Member, IEEE.**

This paper presents an overview of the field of recommender systems and also describes various limitations of current recommendation methods and discusses possible extensions that can improve recommendation capabilities and make recommender systems applicable to an even broader range of applications. These extensions include, among others, an improvement of understanding of users and items, incorporation of the contextual information into the recommendation process, support for multicriteria ratings,

and a provision of more flexible and less intrusive types of recommendations .

[4] **"Personalized Recommendation Combining User Interest and Social Circle", Xueming Qian, Member, IEEE He Feng, Guoshuai Zhao, Tao Mei, Senior Member, IEEE.**

In this paper, three social factors, personal interest, interpersonal interest similarity, and interpersonal influence, fuse into a unified personalized recommendation model based on probabilistic matrix factorization. The factor of personal interest can make the RS recommend items to meet users' individualities and the interpersonal interest similarity and interpersonal influence can enhance the intrinsic link among latent space. . Experimental results show the proposed approach outperforms the existing RS approaches.

[5] **"Author Topic Model-Based Collaborative Filtering for Personalized POI Recommendations",**
Shuhui Jiang, Xueming Qian, Member, IEEE, Jialie Shen, Member, IEEE, Yu n F u , Senior Member, IEEE,and Tao Mei, Senior Member, IEEE

In this paper, an author topic model-based collaborative filtering (ATCF) method is proposed to facilitate comprehensive points of interest (POIs) recommendations for social users. In our approach, user preference topics(cityscape, or landmark) are extracted from the GPS constrained textual description of photos via the author topic model instead of only from the (GPS locations). Advantages and superior performance of our approach are demonstrated by extensive experiments on a large collection of data.

[6] **X. -W. Yang, H. Steck, and Y. Liu, "Circle-based recommendation in online social networks," in KDD'12, 2012, pp. 1267-1275.**

This paper presents an effort to develop circle-based RS. We focus on inferring category-specific social trust circles from available rating data combined with social network data. We outline several variants of weighting friends within circles based on their inferred expertise levels. We demonstrate that the proposed circle-based recommendation models can better utilize user's social trust information, resulting in increased recommendation accuracy.

[7] **M. Jiang, P. Cui, R. Liu, Q. Yang, F. Wang, W. -W. Zhu and S. -Q. Yang, "Social contextual recommendation," in CIKM'12, 2012, pp. 45-54.**

In this paper, we explore social recommendation on the basis of psychology and sociology studies, which exhibit two important factors: individual preference and interpersonal influence. We first present the particular importance of these two factors in online item adoption and recommendation. Then we propose a novel probabilistic matrix factorization method to fuse them in latent spaces.

[8] **H. Ma, H. Yang, M. R. Lyu, and I. King, "Sorec: Social recommendation using probabilistic matrix factorization," in CIKM'08, 2008.**

This paper proposes a factor analysis approach based on probabilistic matrix factorization to solve the data sparsity and poor prediction accuracy problems by employing both users' social network information and rating records. The complexity analysis indicates that our approach can be applied to very large datasets since it scales linearly with the number of observations, while the experimental results shows that our method performs much better than the state-of-the-art approaches, especially in the circumstance that users have made few or no ratings.

[9] **L. Hu, A. Sun, and Y. Liu, "Your Neighbors Affect Your Ratings: On Geographical Neighborhood Influence to Rating Prediction," in SIGIR'14, 2014.**

Data sparsity, scalability and prediction quality have been recognized as the three most crucial challenges that every collaborative filtering algorithm or recommender system confronts. This paper proposes a factor analysis approach based on probabilistic matrix factorization to solve the data sparsity and poor prediction accuracy problems by employing both users' social network information and rating records. The complexity analysis indicates that our approach can be applied to very large datasets since it scales linearly with the number of observations

[10] **G. Linden, B. Smith, and J. York, "Amazon.com recommendations: Item-to-item collaborative filtering," IEEE Internet Computing, 7:76–80, January 2003.**

Many applications use only the items that customers purchase and explicitly rate to represent their interests. At Amazon.com, we use recommendation algorithms to personalize the online store for each customer. There are three common approaches to solving the recommendation problem: traditional collaborative filtering, cluster models, and search-based methods .Our algorithm produces recommendations in real time, scales to massive data sets, and generates high-quality recommendations.

2. PROPOSED SYSTEM

This system will provide advantages by adding points to the customers for their respective purchases, like and dislike for the user comments, Chat application (communication b/w customer and provider about the product quires) and currency convertor operation.

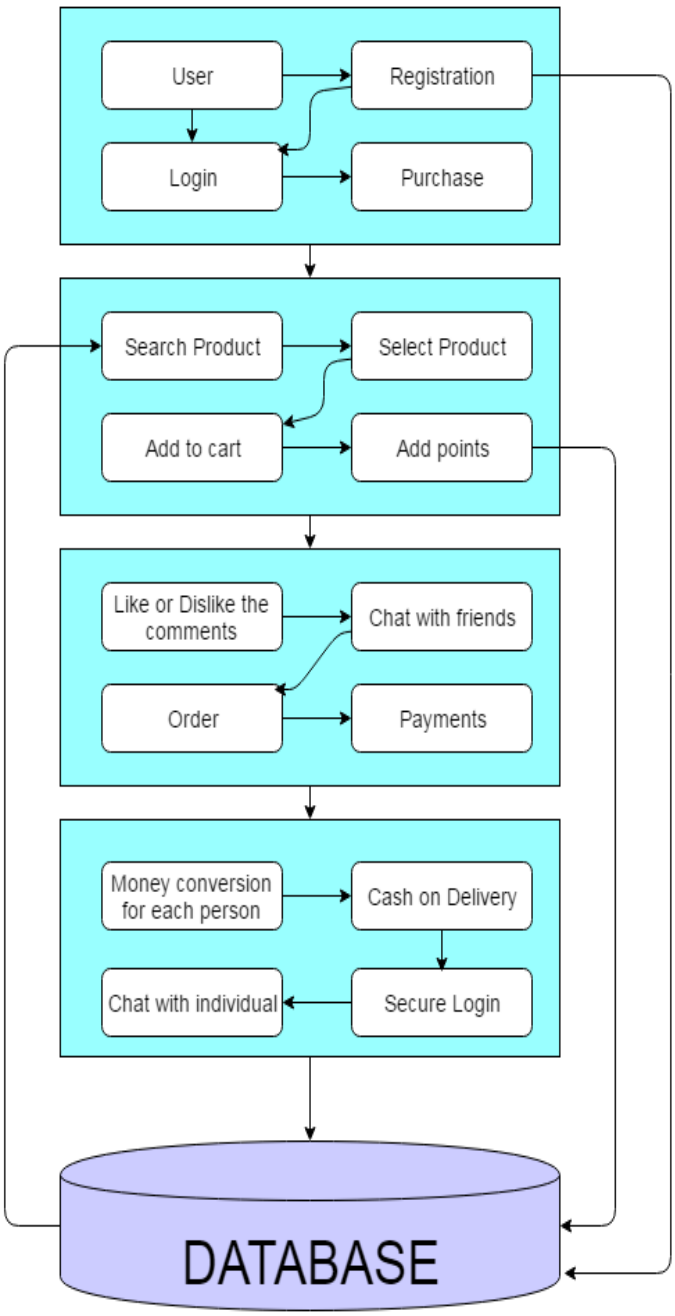


FIG 2.1 OVERALL ARCHITECTURE

The above figure is a conceptual model that defines the structure, behavior and more detailed view of the system .An architecture diagram is a formal description of a system organized in such a way that acts as a support system for reasoning.

In this context diagram, the arrows represent the information received or generated by the application stored in the databases. The closed boxes represent the set of modules.

In the system, we can observe that the client cooperates with the application through a graphical UI. The contributions to the framework are the Search and Filter criteria gave by the client and another audit composed by the client. As soon as the products are added to cart the points are added for respective purchase. Also, the output is in the form of Repeater and grid views which present the users with list of Products available. The users can view complete specification, view Images, like or dislike or reviews, currency conversion, chat with friends regarding products and make secure payment.

3. MODULE DESCRIPTION:

LOGIN PAGE

In the user login module, the user can create account with user name and password to view the product which is applicable. User enters the username and password for validating purpose if it is validated successfully, then the system provides access to search the desired product from the database. The website is done using .net and the Microsoft SQL server is used as the back end to store all the data's. The admin manages the website and database. Here the admin acts as an expert or knowledgeable person.

REGISTRATION PAGE

This module is for new users. These new users are urged to create an account. The account creation is done by filling the registration form with respective details such as Username, phone number, email ID etc. Once they have registered they get authorization to login using their user ID and password.

ADDING POINTS FOR RESPECTIVE PURCHASES

According to their purchase level, points are added to their account. Valuable points could be added based on their every purchase and transactions. If the user purchases above 1000 r/s one point has to be added. Worth for each point will be 100 r/s. This amount gets saved in the user's wallet. These points can be used for later purchase or even for current purchase.

LIKE AND DISLIKE FOR THE USER COMMENTS

In this module user are given opportunity to like or dislike others reviews. This could be helpful to find out the best product form user reviews and feedback of multiple customers. The frequency of the likes and dislikes are considered for the promotion or the deletion of the product from the system.

CHAT APPLICATION (COMMUNICATION B/W CUSTOMER AND THEIR FRIENDS ABOUT THE PRODUCT)

In this system the details of the registered user are collected so they can chat with their friends connecting through facebook account or through any other chat applications. Here we are using Signal dynamic link library for connecting people. Using this application we can chat with an individual or a group of people.

MONEY CONVERTER

Changing over one type of cash into another nation's usable money. In view of current trade rates, a man may get less or more incentive for the item after the cash is changed over. This can be dictated by taking a gander at the present conversion standard for the nation's cash.

USER RECOMMENDATION

Recommendation system is a subclass of information filtering system that look to anticipate the "rating" or "preference" that a user would give to an item. This requires a large amount of information on a user in order to make accurate recommendations. The recommendations are based on the user likes for each product. Users can feed their likes for products, the frequency of positive reviews are given to the users as a recommended products.

4. TECHNIQUE USED

SignalR

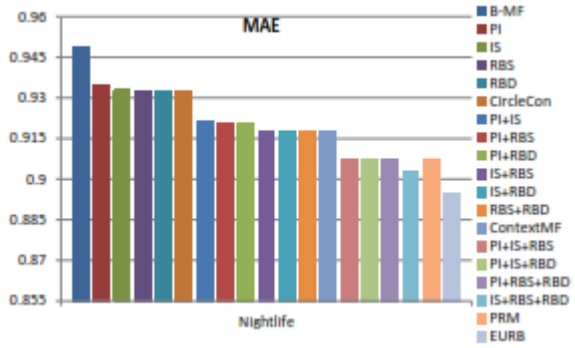
SignalR is a new developer's API provided for ASP.NET web applications, used to add "real time“web functionality to ASP.NET applications. "Real Time" web functionality is the ability to have server node to push contents to connected clients. SignalR supports "server push" or "broadcasting" functionality. It handles connection management automatically. In classic HTTP connections for client-server communication connection is re-established for each request, but SignalR provides persistent connection between the client and the server.

5. CONCLUSION

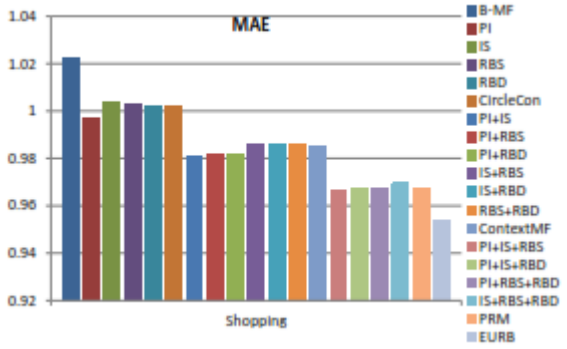
The package was outlined in such a way that future changes can be done effortlessly. The accompanying conclusions can be deduced from the advancement of the project are the automation of the entire system enhance the efficiency, provides a friendly graphical user interface which proves to be better when compared to the existing system, It gives fitting access to the authorized users relying on their authorizations, It effectively overcomes the delay in communications, Updating of information becomes so easier, system security, data security and reliability are the striking features and the System has adequate scope for modification in future if it is necessary.

Performance Analysis Report

We discuss the effect of various factors on performance in Yelp Nightlife and Shopping datasets. Meanwhile, we include the performance of compared algorithms with examine what is the factor that yielded better results. We show the performance of different factors.



Impact of different factors on performance in Yelp Nightlife dataset.



Impact of different factors on performance in Yelp Shopping dataset

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