Dynamic Connection Based Social Group Recommendation

Thirumal P[1], VeeraManikandan S[2], Vinny Kumar A[3], Yamini R[4]

[1,2,3]Student, Dept of computer Science and Engineering,

Adhiyamaan College of Engineering, Hosur

[4]Assistant Professor, Dept of computer Science and Engineering,

Adhiyamaan College of Engineering, Hosur

Abstract - With the development of social networks and online mobile communities, group recommendation systems support users' interaction with similar interests or purposes with others. We often provide some advices to the close friends, such as listening to favorite music and sharing favorite dishes. However, users' personalities have been ignored by the traditional group recommendation systems while the majority is satisfied. In this paper, a method of group recommendation based on external social-trust networks is proposed, which builds a group profile by analyzing not only users' preferences, but also the social relationships between members inside and outside of the group. We employ the users' degree of disagreement to adjust group preference rating by external information of social-trust network. Moreover, having a discussion about different social network utilization ratio, we proposed a method to work for smaller group size. The experimental results show that the proposed method has consistently higher precision and leads to satisfactory recommendations for groups.

Key words: *Group Recommendation, SocialItem, SocialConnection, Collaborative Filtering*.

1.INTRODUCTION

Recommender system (RS) has been successfully exploited to solve information overload. In ECommerce, like Amazon, it is important to handling mass scale of information, such as recommending user preferred items and products. A survey shows that at least 20 percent of the sales in Amazon come from the work of the RS. It can be viewed as the first generation with traditional collaborative filtering algorithms to predict user interest. However, with the rapidly increasing number of registered users and various products, the problem of cold start for users (new users into the RS with little historical behavior) and the sparsity of datasets (the proportion of rated user-item pairs in all the user-item pairs of RS) have been increasingly intractable.

Fortunately, the appearance of web2.0 greatly improves user's initiative on the Internet, and then brings volume of social networks such as Facebook, Twitter, Yelp1, Douban2, Epinions3, etc. The interpersonal relationship, especially the circles of friends, of social networks makes it possible to solve the cold start and sparsity problem. The rich of social media give us some valuable clues to recommend user favorite items preferred brand/products , user's preferred tags when sharing a photo to social media networks, and user interested travel places by exploring social community contributed photo.

Many social network based have been proposed to improve the performance of the RS. Recently, Yang et al. propose to use the concept of 'inferred trust circle' based on the domain-obvious circles of friends on social networks to recommend user favorite items. Their approach not only refines the interpersonal trust in the complex networks, but also reduces the load of big data. Meanwhile, besides the interpersonal influence, Jiang et al. demonstrate that individual preference is also a significant factor in social network. Just like the idea of interpersonal influence, due to the preference similarity, user latent features should be similar to his/her friends' based on the probabilistic matrix factorization model, . However, do all users actually need the relationship on the social networks to recommend items? Does the relationship submerge user's personality, especially for the experienced users? It is still a great challenge to embody user's personality in RS, and it is still an open issue that how to make the social factors be effectively integrated in recommendation model to improve the accuracy of RS.

A news recommendation technique utilizing real-time Twitter data as the basis for ranking and recommending articles from a collection of really simple syndication feeds. And one of the conclusions is that users with more friends tend to benefit more. Three separate dimensions in designing such a recommender: content sources, topic interest models for users, and social voting. uch solutions be accepted as mobile social networks continue to grow exponentially.

2.LITERATURE SURVEY

2.1Text Mining and Cyber Crime

This chapter describes the state of technology for studying Internet crimes against children, specifically sexual predation and cyberbullying. We begin by presenting a survey of relevant research articles that are related to the study of cybercrime. This survey includes a discussion of our work on the classification of chat logs that contain bullying or predatory behavior. Many commercial enterprises have developed parental control software to monitor these behaviors, and the latest version of some of these tools provides features that profess to protect children against predators and bullies. The chapter concludes with a discussion of these products and offers suggestions for continued research in this interesting and timely sub-field of text mining.

3.SYSTEM SPECIFICATIONS

3.1 EXISTING SYSTEM

The existing application, a novel interest subgroup extraction approach to represent the multi-interests of a group. Then we adaptively select the similar users and items based on each subgroup to generate a compact and small rating matrix for efficient collaborative filtering. A dynamic aggregation function to combine all recommendation lists as the final results delivered to the group. We have conducted extensive experiments to evaluate our proposed recommendation approach. The experimental results have proved the high effectiveness and efficiency of our system compared with existing competitors.

3.1.1 DRAWBACKS:

- No recommendation methods used

- Users might see all posts, it's irritates users

- Users might see lots of posts

- No personalizations

3.2 PROPOSED SYSTEM:

The influence of trust network on the group recommendation system. In the traditional group recommendation, when the group preference diverges, the potential intentions of some group members will be ignored. In this paper, we use the trust network relationship in social networks to introduce group members' external real information, through a true evaluation of an item, to amend the group of a forecast of an item, when the group disagreement is small, that is, within the group to achieve the same case, to reduce the social network recommended to the group impact. Thereby dynamically adjusting the impact of social networking factors improves the quality of group recommendations. Through experiments, different aggregation strategies are used to verify the effectiveness of the proposed method in different group sizes. The error of the proposed method does not increase with the increase of the group and will remain at a relatively low level. Based on this, we further discuss the influence of social network utilization on the results of the group recommendation system. Our method shows that, in the group recommendation system, under the same group size, the utilization rate of social network is higher and the root mean square error is lower. In other words, the higher social network utilization ratio is, the better group recommendation is obtained. This shows that, for a new user, as long as the user chooses a few trusted objects, our method can get a good result.

3.2.1 ADVANTAGES:

- Recommendations based on user's preferences, so user can get posts based on their interests

- An efficient recommendation technique used

4. CONCLUSION:

In this paper, a personalized recommendation approach was proposed by combining social network factors: personal interest, interpersonal interest similarity, and interpersonal influence. In particular, the personal interest denotes user's individuality of rating items, especially for the experienced users, and these factors were fused together to improve the accuracy and applicability of recommender system. We conducted extensive experiments on three large real-world social rating datasets, and showed significant improvements over existing approaches that use mixed social network information.

SCREEN SHOTS:

REFERENCES:

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

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

[3] M. Jamali and M. Ester. A matrix factorization technique with trust propagation for recommendation in social networks. In Proc. ACM conference on Recommender systems (RecSys), 2010.

[4] R. Salakhutdinov and A. Mnih. Probabilistic matrix factorization. In NIPS 2008, 2008.

[5] Y. Koren, R. Bell, and C. Volinsky. Matrix factorization techniques for recommender systems. Computer, pp. 30-37, Aug.2009.

[6] M.E. Tipping and C.M. Bishop. Probabilistic principal component analysis. Journal of the Royal Statistical Society, Series B, pp. 611– 622, 1999.

[7] G. Adomavicius, and A. Tuzhilin. Toward the next generation of recommender systems: a survey of the state-of-the-art and possible extensions. Knowledge and Data Engineering, IEEE Transactions on, pp. 734-749, Jun. 2005.

[8] R. Bell, Y. Koren, and C. Volinsky. Modeling relationships at multiple scales to improve accuracy of large recommender systems. KDD'07, pp. 95-104, 2007.

[9] B. Sarwar, G. Karypis, J. Konstan, and J. Reidl. Item-based collaborative filtering recommendation algorithms. In WWW, pp. 285-295, 2001.

[10] M. Jahrer, A. Toscher, and R. Legenstein. Combining predictions for accurate recommender systems. KDD'10, pp. 693-702, 2010.