Amigos.com: An Attitude based Friend Recommendation System on Social Network

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Abstract: Developing a recommendation system for social network which is to discover life styles of users, measures the similarity of life styles between users. If their life styles have high similarity it recommends friends to users. User's daily life is modelled as life documents, from which users life styles are extracted. A linear feedback mechanism is integrated that exploits the user's feedback to improve recommendation accuracy and also providing a web search facility.

Keyword: Social network, Daily Activity, Lifestyles, Friends recommendation

I. INTRODUCTION

Social network sites have attracted millions of users with the social revolution in Web 2.0. In the social network sites, a user can register other users as friends and enjoy communication. However, users of social network sites may easily get overwhelmed by the excessive volume of friend information. A powerful aspect of social networks is the customization of user experiences.

Also, SNSs(Social Network Sites) are increasingly attracting the attention of academic and industry researchers. What makes SNSs unique is that they have a relationship with friends [2]. People tend to trust the opinions of friends they know rather than the opinions of strangers [3].

In the SNSs, a user can register other users as friends and enjoy communication through a virtual message and a diary such as blog. With the rapid growth of social networks, users of SNSs may easily get overwhelmed by the excessive volume of information. The friendship can significantly affect the quality of recommendations. Therefore, the recommendation of better friend is the essential factor of social network sites to find truly valuable information.

The recommendation system is important in every field of social networking. With the recommendation system the recommending things become more popular. Flipkart recommends different type of electronic product; home appliance etc., Netflix and Rotten Tomatoes recommends the movie to user with their rating accordingly. The recommendation system becomes the important part of the social networking and the internet application.

Proposes a friend recommendation method to support users to explore and find friends interactively under a context of interest. The system can enhance users' awareness of their social networks under different interest contexts, and help users seek potential friends sharing similar interests in an interactive way.

II. RELATED WORKS

A. Social Network Site

The evolution of the Web from Web 1.0 to Web 2.0 has brought up new platforms as SNSs that are used by users to articulate and manage their relationships. SNSs are an online phenomenon which has become extremely popular. They provide social network based services to support easy message posting, information sharing and inter-friend communication.

SNSs are defined as web-based services that allow individuals to (1) construct a public or semipublic profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.

The SNSs are used to articulate and manage relationships to personally known people. It is expected that a recommendation sent by one of the social network contacts is perceived as highly relevant for the user. The success of SNS to bind users and their friends has initiated concepts for usage of social network data for a more precise and personalized recommendation of information to users.

B. Recommender System

Recommendation systems have received significant attention from both academia and industry since the mid-1990s when collaborative filtering was introduced. Recommendation systems are usually classified into two categories: content-based recommendations and collaborative filtering based recommendations.

Content-based filtering recommends items that are similar to ones, the active user preferred in the past. Content-based recommendation systems recommend an item to a user based on item description and user's interests and are useful recommending web pages, news articles, items for sale, etc.

Traditional collaborative filtering recommends items to an active that have been rated highly by users who are similar to the active user. Collaborative filtering based systems recommend items that other similar users have preferred. Collaborative recommendation computes the similarity to other users rather than to other items. Several hybrid recommendation systems combine both collaborative and content-based methods.

In recent years some recommendation system that try to suggest item like Books, music, movie and so no are becoming more and more popular. For instance Amazon recommends the item to user based on their previous visits and Netflix recommends items that other users are looking at. Rotten Tomatoes recommend movies to a user based on the user's previous ratings and watching habits.

Researchers have also been proposed recommendation mechanism. Bian and Holtzman proposed Matchmaker in this it recommend friend to user based on personality match using collaborative filtering. Kown and Kim proposed Friend recommendation system where recommendation is based on Social and Physical context. But author did not specified what social and physical context is and how to obtain those information.

Geographically related friends recommendation is proposed by YU et al in this recommendation mechanism it combines both GPS information and social network structure Hsu et al. studied the problem of link recommendation in weblogs and similar social networks, and proposed an approach based on collaborative recommendation using the link structure of a social network and content-based recommendation using mutual declared interests. Gou et al. proposed a visual system, SFViz, to support users to explore and find friends interactively under the context of interest, and reported a case study using the system to explore the recommendation of friends based on people's tagging behaviors in a music community.

III.SYSTEM ANALYSIS

A. Existing System

Most of the friend suggestions mechanism relies on pre-existing user relationships to pick friend candidates. That is the friend suggestions are based on mutual friends. Existing social networking services recommend friends to users based on their social graphs, which may not be the most appropriate to reflect a user's preferences on friend selection in real life.

For example, Facebook relies on a social link analysis among those who already share common friends and recommends symmetrical users as potential friends.

1) Match Maker:

Match maker is another recommendation system which recommend user to watch the shows that his social network friends have watched or is watching. Match maker recommend the user to become friends with someone who is matching same TV character and is friend with another users matching TV character.

B. Proposed System

Proposed system Amigos.com: An attitude based friend recommendation system. Discovers life styles of users, measures the similarity of life styles between users, and recommends friends to users if their life styles have high similarity. Model the daily lives of users as life documents, the life styles as topics, and the activities as words. Probabilistic topic model consider discover the probabilities of "life styles" from the "life documents". Bag-of-activity model replace the raw data with their probability distributions and consider the frequency.

Similarity metric is used to measure the similarity of life styles between users, and calculate users' Impact in terms of life styles. Integrate a linear feedback mechanism that exploits the user's feedback to improve recommendation accuracy.

This approach involves four well-defined steps: identification of requirements, architecture definition, prototype implementation, and performance evaluation.

The characteristics of proposed system are:
- Flexibility: It allows users to move sessions from more than one application.
- Transparency/seamless operation: Once installed, the synchronization software centrally stores the user's files on the company's servers, automatically tracks the changes, and synchronizes them across the user's devices.
- Security: The synchronization tool the transmitted information is always encrypted.
- Inter-operatable across heterogeneous system.

Social network like facebook, twitter doesn't provide any searching mechanism. But proposed system provide web searching facility.

IV. PROPOSED WORK

Life styles and activities are reflections of daily lives at two different levels where daily lives can be treated as a mixture of life styles and life styles as a mixture of activities. This is analogous to the treatment of documents as ensemble of topics and topics as ensemble of words. By taking advantage of recent developments in the field of text mining, we model the daily lives of users as life documents, the life styles as topics, and the activities as words.

Given "documents", the probabilistic topic model could discover the probabilities of underlying "topics". Therefore, adopt the probabilistic topic model to discover the probabilities of hidden "life styles" from the words [1]. In probabilistic topic models, the frequency of vocabulary is particularly important, as different frequency of words denotes their information entropy variances.

Following this observation, propose the "bag-of-activity" model to replace the original sequences of activities recognized based on the raw data with their probability distributions.

Thereafter, each user has a bag-of-activity representation of his/her life document, which comprises a mixture of activity words.

Friend Recommendation Algorithm:

1. Start
2. Create new suggestion list
3. Get all interest of user
4. Select first interest of user
5. Check if all interest are processed
6. Sort suggestion list
7. Display suggestion list
8. Go to step 22
9. Else get all users with same interest
10. Check if all users are processed
11. Select next interest
12. Go to step 5
13. Else check if the user is already a friend
14. Select next user
15. Go to step 10
16. Else if user is already in suggestion list
17. Increment the user common interest count by 1
18. Go to step 14
19. Else add user to suggestion list
20. Common interest count = 1
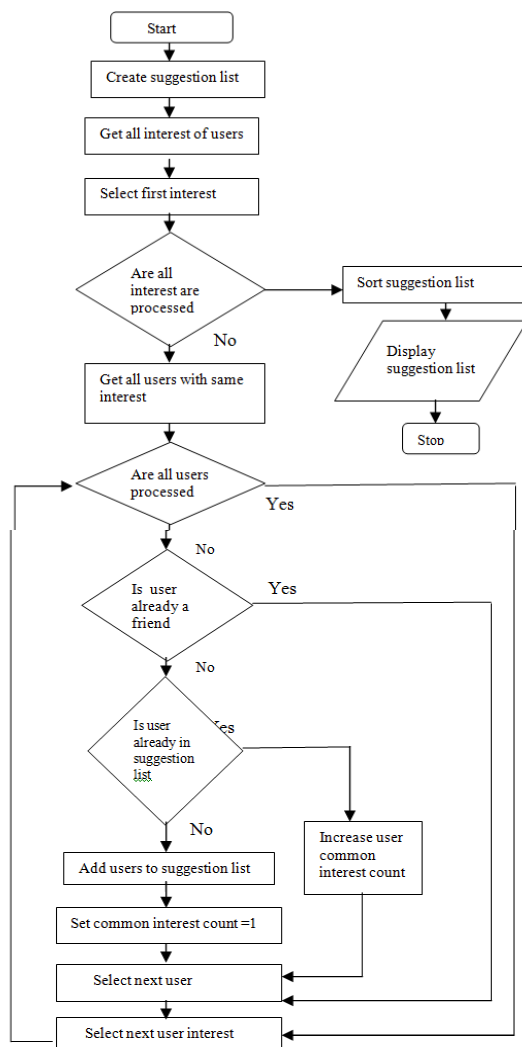21. Go to step 14
22. Stop

Fig 1:flowchart for friend recommendation procedure

V. FEEDBACK CONTROL

For optimization of performance, feedback control mechanism is included into the system. Feedback is given by user. Feedback can be in the form of query or statement. Feedback is generated by the system and it is analysis on the basis of another user's feedback. In otherwords one feedback is compared with the other.

In this, feedback is for reducing the ambiguity of user's activity. Sometimes system cannot recognize the exact activity is performing by the user. So for that system can query that what kind of activity is performing by user? Then user can respond as feedback to the system. By this system can get exact activity. System stores such kind of feedback and when in future, such kind of activity is occurs then system directly considers the activity and increases its frequency.

VI. CONCLUSION

Long time ago, people usually made friends with others on the basis of their geo-graphical locations such as people working in their once or living in their neighborhood. The emergence of various social networking sites has given a revolutionary approach of making friends. There are various ways to group people or become friends with somebody on social networks. People can easily make friend on the social networks. But some time recommendation is not as per user's consideration.

Most of the time, habits or life style is the most prominent factor between two users friendship but is not widely used by most of the social network recommendation systems. This is because user's life style is difficult to capture through web actions. So by considering this, we are attempting to use a handy tool like mobile phone to capture and model user's lifestyle and recommend friends on the basis of similarity between two users life style. Most of the time user's lifestyle is based on the activities that performed in their daily life. Our daily life is characterized by numerous activities. This recommendation system allows users to share their lifestyle along the social network. On the basis of this lifestyle system recommends the appropriate friend to the user. This surely helps user to find their friend on the social network.

This paper focuses on providing the overview about the various recommendation techniques developed or proposed till now. Various categories in which recommendation algorithms can be classified are discussed above.

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