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FRIEND SUGGESTION ON SOCIAL NETWORK SITE BASED ON LIFE STYLE

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ABSTRACT-Social network sites attracted millions of users. System for suggestion of friends for Social Networks which uses the lifestyle of user to suggest friend. Many social networking sites recommends the friends, items, books for e.g. Face book suggest the friends based on social relationship those who share common friends. System uses the lifestyle of user recommend friend instead of social graph. The lifestyle of user can be determined from the user details such as hobbies, job profile. The captured information is then processed and lifestyles of users are excerpted using a text data mining algorithm known as "Latent Dirichlet Allocation". Further, similarities between users are computed using the lifestyles extracted from LDA and the user with highest similarity is suggested as friend. To further, improve the efficiency of the application, a feedback system is incorporated. Using which the users can evaluate the suggestions presented by the system.
Keywords: Friend book, suggestion, social network, lifestyle.

1. INTRODUCTION

Real life friends play an important role in off-line social events while most virtual on-line friends can fulfill such social function. Twenty years ago, people typically made friends with others who live or work close to themselves, such as neighbors or colleagues. Recommend friends to user based on life style. The LDA algorithms is used. Friend Matching method is used. 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.User's daily life as life documents, from which his/her life styles are extracted by using the Latent Dirichlet Allocation algorithm. Further propose a similarity metric to measure the similarity of life styles between users, and calculate users' impact in terms of life styles with a friend-matching graph. Facebook relies on a social link analysis among those who already share common friends and recommends symmetrical users as potential friends. Unfortunately, this approach may not be the most appropriate based on recent sociology findings. Social networking sites have gain their position in world of internet. This project friend suggestion is based on social networking. It is different from other sites as it targets the lifestyle and habit for making new friends. Friendbook find user's life style and habit by using handy tool like mobile phone for suggestion system. Most of the system considers factors habit, attitude, taste, moral standards, and economic level of people already they know for suggestion. Proposed system recommends the friend based on their lifestyle. If we can find out the lifestyle and activity performed of user, then it will be very useful for suggestion. Major part of system consists of lifestyle extraction, friend matching graph generation, friend suggestion, and feedback control. Lifestyle and activity of the user is being considered for recommending friend. The system is to be developed which will be easily embed into the different application where suggestion is based on lifestyle

2. EXISTING SYSTEM

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.The supervised learning algorithms is used. Privacy is insensitive. Match maker is another suggestion system which recommend user to watch the shows that his social network friends have watched or is watching.. Recommend friends to user based on life style. The LDA algorithms is used. Friend Matching method is used.

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3. PROPOSED SYSTEM

Friend book discovers life styles of users from user-centric sensor data, measures the similarity of life styles between users, and recommends friends to users if their life styles have high similarity.Unsupervised learning method is used. Privacy is sensitive comparing to existing system. Friend matching Graph measures the similarity of the dominant life style. It shows the suggestion scores with users. Modified LDA is used. Used for computing large scale data. Enables scalability to long term recordings of activities. Rank scores are based on the Graph Construction.

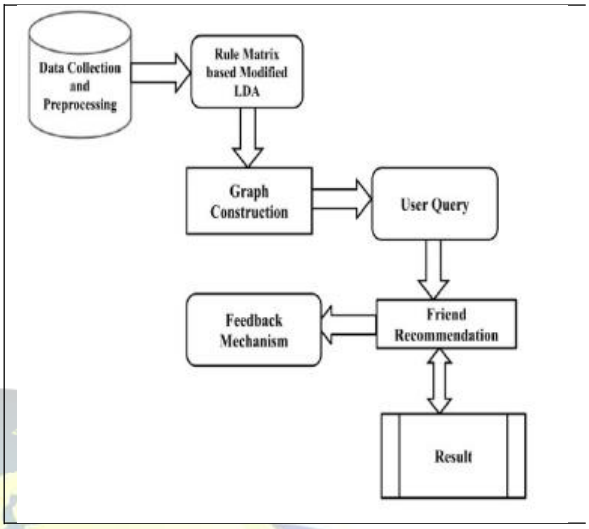

Fig. 1 Architecture of Friend book

4. SYSTEM OVERIEW

In our day to day life we do many course of activities like walking, talking, eating, etc. which have some meaningful sequence. This course of activities altogether having meaningful sequence gives us the user's life style. Consider office work life style, it consists of walking, talking, traveling, typing, etc. It use different type of sensors of android mobile phone like microphone, camera, GPS, gyroscope, accelerometer to this course of work. Many challenges are there to capture accurate life style from sensor data, to calculate user's life style activity. Here use mobile activities to capture users' life style. Mobile activities like Browsing activity and App Usage Activity, App Frequency can be used as a key measure to collect relative data. This activity can be further categorized into low-level abstractions like "Gaming", "Technical", "Social", "Arts and Literature", "Sports" etc. Then we save this data on cloud. After then, when the user seeks to suggest friends for himself, we use this gathered data to match his profile with candidate friends profile to find the best similar matching profile based on category ranking.

Data collection module Collects one's activity based on the raw data from sensing phase.It identifies status or action at a short time period.The Motion activity are Sitting/Walking/Running/Riding/Driving.Then the Life Style Analysis and Indexing is used to improve recognition accuracy, features are extracted to characterize the data. Tested several features such as mean, median .It is calculated on the basis of data obtained from sensor rich smart phones. Then the life style indexing module puts the life styles of users into the database in the format of (life-style, user) instead of (user, life-style). A friend-matching graph cans be constructed accordingly by the friend-matching graph construction module to represent the similarity relationship between users' life styles. The impacts of users are then calculated based on the friend-matching graph by the user impact ranking module. The user query module takes a user's query and sends a ranked list of potential friends to the user as response. The system also allows users to give feedback of the suggestion results which can be processed by the feedback control module. With this module, the accuracy of friend suggestion can be improved. The main challenge developing relevant friend suggestions is due to the dynamic nature of humans' perception of friendship.

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```
Input: Any two user's interest sequence A(i)=1,2…n and
B(j)=1,2…m
        Output: The top suggestion results: recom
R
        begin
                R(0….n) ← 0
                R(0….m) ← 0
               pairs(0….n,0…m)      0
               for i ← 1 to n do
                  for j ← 1 to n do
               d ← Euclidean distance(
                   A(i),B(j)) s  1/1+d
         find-max{R(i-1,j-1)+s,R(i,j-1),R(i-1,j)}
        recom R
```

exceed then system will recommend that friend to the query user.

5.4 ALGORITHM

FRIEND MATCHING

The content of the user profile are scanned and then the contents are classified according to the areas. Then the areas are ranked based on the probability of their frequency. The top most ranks are considered and the friend suggestion is done based on the similarity of the ranks.

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5. LIFE STYLE EXTRACTION USING TOPIC MODEL

Life Style Modeling

Life style and activities are the major contributors in modeling the daily life of a person. Here, Daily life is a mixture of life styles and a Life style can be viewed as a mixture of activities. This is similar to the documents being modeled as a mixture of topics and topics as a mixture of words. An analogy can be established between daily life and document, life style and topic, activity and word. So in this system, daily life of a user is modeled as a life document, life styles as topics and activities as words.

Activity Recognition

In our system, we are going to use motion sensors like accelerometer, gyroscope and various other sensors like camera, microphone, GPS etc. The data obtained from these sensors is always noisy. Hence it needs to be processed to obtain some information from it so that we could use it to recognize the activities of a user. Various filters and techniques are used to improve the recognition accuracy. In case of ambiguity, the user will be prompted to enter the activity he/she is performing.

Friend Matching Graph

This system recommends friends to a user based on the similarity between their lifestyles. For this purpose, a friend matching graph is constructed. Every vertex of a friend matching graph represents a user and the weight on every edge between two users represents the similarity between their life styles. If the similarity between query user and any other user

FEEDBACK CONTROL

To support performance optimization at runtime, we also integrate a feedback control mechanism into Friend book. After the server generates a reply in response to a query, the feedback mechanism allows us to measure the satisfaction of users, by providing a user interface that allows the user to rate the friend list.

6. EVALUATION

In this section the performance evaluation of Friendbook on both small-scale field experiments and large-scale simulations.

7.1 Evaluation using Real Data

We first evaluate the performance of, Friendbook on small-scale experiments. Eight volunteers help contribute data and evaluate our system. Demonstrates the profession of these users. Most of them are students, while the rest include a businessman, an office worker, and a waitress. Each volunteer carries a Nexus smartphone with Friend book application installed in advance. They are required to start the application after they wake up and turn it off before they go to bed. Aside from this, we do not impose any additional requirement on the usage of the smartphone. For example, we do not require them to carry the smartphone all the time during the day or attach the smartphone to some special parts of the body. It is worth noting that some of the eight users are already friends before experiments but some of them are not. In fact, some strangers within the group become friends afterwards. However, strangers living far away from each other do not become friends although they choose each other as a friend at the friend suggestion phase. This also motivates the usage of GPS information into the system to improve the suggestion accuracy.

7.2.Evaluation using Simulated Data

We perform simulations to further evaluate performance of Friendbook when the scale of the system is large. Our friend suggestion method is based on life styles extracted from sensors on users' smart phones, which is quite different from existing friend suggestion methods. To the best of our knowledge, there is no real data set that can be used for a large-scale performance evaluation.

7. RELATED WORK

Suggestion systems that try to suggest items (e.g., music, movie, and books) to users have become more and more popular in recent years. Amazon recommends items to a user based on items the user previously visited, and items that other users are looking at. Bian presented Match Maker, a

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collaborative filtering friend suggestion system based on personality matching. Kwon and Kim proposed a friend suggestion method using physical and social context. Yu et al recommended geographically related friends in social network by combining GPS information and social network structure. Hsu etal studied the problem of link suggestion in weblogs and similar social networks, and proposed an approach based on collaborative suggestion using the link structure of a social network and content-based suggestion using mutual declared interests. Gouet 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 suggestion of friends based on people's tagging behaviors in a music community. These existing friend suggestion systems, significantly different from our work, as we exploit recent sociology findings to recommend friends based on their similar life styles instead of social relations. The MIT Reality Mining project and Farrahi and Gatica-Perez tried to discover daily location-driven routines from large-scale location data. They could infer daily routines such as leaving from home to office and eating at a restaurant. However, they could not discover the daily routines of people who are staying at the same location. For instance, when one stays at home, his/her daily routines like "eating lunch" and "watching movie" could not be discovered if only using the location information.

8. FEEDBACK CONTROL

To support performance optimization at runtime, we also integrate a feedback control mechanism into Friendbook. After the server generates a reply in response to a query, the feedback mechanism allows us to measure the satisfaction of users, by providing a user interface that allows the user to rate the friend list. . The period for collecting data usually takes at least one day. Longer time would be expected if the user wants to get more satisfied friend suggestion results. After receiving a user's request (e.g., life documents), the server would extract the user's life style vector, and based on which recommend friends to the user. The suggestion results are highly dependent on users' preference.

8. EXPERIMENTAL RESULT

$r(i)=\sum d(i)/n$

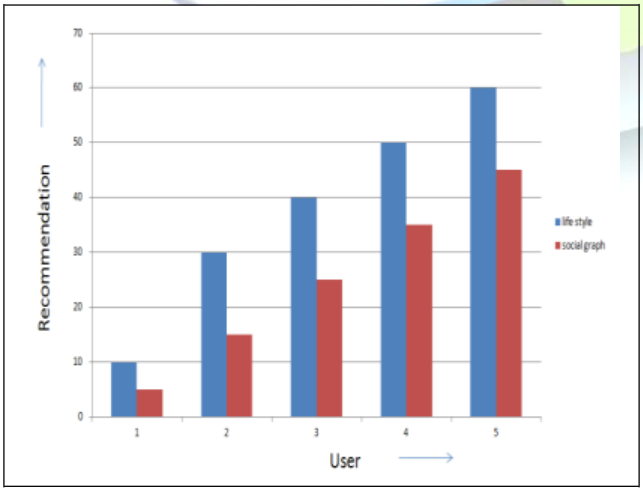
where r(i) -

Suggestion d(i) –

Data

n - no of users

COMPARISON OF EXISTING AND PROPOSED SYSTEM



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9. 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 suggestion 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 networks suggestion 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 suggestion 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. Which surely helps user to find there friend on the social network.

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