Friendbook: A Scalable and Efficient Way to Recommend Friends on Social Networks through Life-Style

Mayuri Suresh Pawar¹, Shraddha Popat²
UG Student¹, Assistant Professor²
Department of Computer Engineering
D.Y.Patil college of Engineering, Akurdi, Pune, India

Abstract:
Friend Book is a semantic-based friend recommendation system for social networks, based on their life styles instead of social graphs and Geographical location which suggests friends to users. Friendbook represents life style based friend recommendation system Once asking for recommendation by the user friend book returns a list of people with the highest similarities of life style or activities. Friend book has been implemented on the Netbeans 8.2 IDE for small scale experiments. For the implementation of Friend book Friend Recommendation algorithm is used. The result shows that the recommendation accurately reflects the preference of users in choosing friends. Finally, Friendbook integrates a feedback mechanism to further improve the recommendation accuracy. The results show that the recommendations accurately reflect the preferences of users in choosing friends.

Index Terms: Friend Recommendation, Social Network, Life Style, Friend Recommendation Algorithm.

I. INTRODUCTION

Friend recommendation is the process of recommending friends to users based on any common relationship among them. One of the popular friend recommendation systems these days that is widely used is Facebook, which relies on mutual relationships to recommend friends. Not all the users who have mutual relationships among them, have similar interests or lifestyles. According to social research people bond with the ones that share common interests and lifestyles. Social networking websites provide a platform for a variety of people to socialize. Friendbook is a platform to form a lifestyle vector (interests like travelling, food, shopping etc) to provide a more efficient and a better way of suggesting friends. Hence developed mechanism tracks their lifestyle, by allowing them to visit websites and gets recommended friends which matches users lifestyle. Few years ago, People used to make friends with others who were close to them either with their location i.e neighbors or colleagues or with their relations i.e uncle or aunt. It was a traditional way of making friends by that time.

It was called friends made through the process as Geographical Location-Based Friends because they were influenced by the graphical distances between them. With the rapid advances in modern social networking technologies services such as Twitter, Facebook, Google+ have provided us a revolutionary way of making friends. According to Facebook statistics, a normal user has an average of 130 friends which is larger than any other time in history[12]. This recommendation mechanism can be deployed as a standalone app on smartphones or as an add-on on social networking sites. Friendbook can help a user to Find friends sharing same lifestyles with him.

Motivation:
(a) be familiar with each other,(b) To find people with similar life styles: activities, state, habits and surroundings,(c) Helps to encourage by the people of similar life styles to sustain our hobbies. (d)All are helping each other for their problems.

They successfully apply the model to a large, real-life data set, consisting of 97 cellphone users and 16 months of their location patterns, to discover routines with varying time durations. The “MatchMaker, a collaborative filtering
recommendation system based on personality matching."Paper by Bian and Holtzman[1] is about the members recommendation in social networks. The proposed approach is based on the semantic and social collaborative filtering technique (SSCF). In this approach, the building of communities of users is based on the calculation of similarities between them and includes semantic and social dimensions. These two dimensions are respectively related to the computation of similarity between the user and (1) his close friends and (2) those he trusts. A recommender system based on this approach has been developed. The preliminary experiments results show the importance of integrating the semantic and social aspects in the recommendation process. The “Visual system for recommendation of friends on social networks” paper by Gou ET all [7] is about a visual system, SFViz, to support users to explore and friends interactively under the context of interest, and reported a case study using the system to explore the recommendation of friends depends on people’s tagging behaviours in a music community. These existing friend recommendation systems, however, are significantly different from our work, as they exploit recent sociolgy to recommend friends depend on their identical life styles instead of social relations.

“Friendbook:
An Advanced Friend Recommendation System For Social Networking sites” in this paper Tejaswini M.S Mrs. Rajeshwari J, Shreya Sharanagowda, Megha H. A [8] they work on many methods in the present social networking sites where friend recommendation is based on pre-existing relationships like mutual friends, geographical distances, etc. This is not best way to recommend friends based on recent social findings. Hence they have formed a friend recommendation system that suggests friends to the user based on the lifestyle vector. Inspired by Data Mining, this method utilises Apriori algorithm to match the websites visited by the users, which is the similarity metric used in this method. Wenpu Xing et al.[9] proposed a work on “friend recommendation system using two page ranking algorithm” which shows the rapid growth of the Web, users get easily lost in the rich hyper structure. Therefore, finding the content of the Web and retrieving the users’ interests and needs from their behaviour have become very important. In this paper, Web Mining is used to categorize users and pages by analyzing the users’ behaviour, the content of the pages, and the order of the URLs that tend to be accessed in sequence. Two Page Ranking Algorithm is used namely HITS and Page Rank. Both algorithms treat all links equally when distributing rank scores. Weighted Page Rank algorithm is used to enhance the performance.

The results of this simulation show that Weighted Page Rank performs better than the conventional Page Rank algorithm in terms of returning larger number of relevant pages to a given query.

III. RELATED WORK

One challenge with existing social networking services is how to suggest a good friend to a user. Most of them rely on pre-existing user relationships to pick friend candidates. For example, Facebook depends 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 method. On the basis of these studies, the rules to group people together include:

- Habits
- Attitudes
- Tastes
- Moral standards
- Economic level
- people they already know

A powerful aspect of social networks is the customization of user experiences. Recommendation systems constitute a large role in providing quality customized user experiences. The main challenge in developing applicable friend recommendations is due to the dynamic nature of humans’ perception of friendship, which constitutes a cause for heterogeneity in social networks. It is usual and often for humans to change their view of friendship. Further, this view varies from person to person in which a social network can undergo frequent and sudden change over time even without the introduction of new nodes. Recommender mechanisms help users to identify their interests and sets of choices by predicting the usefulness degree of an item or group of items to these users. They are defined as a special type of information scanning that gives information about which items might be interesting to users.

- Comparison of Friendbook with existing system:
Recommendation systems can be divided into two areas of focus: object recommendation and link recommendation. Companies such as Amazon and Netflix emphasize object recommendation where products are recommended to users based on past behavioral patterns. Social networking sites such as Facebook and LinkedIn focus on link recommendation where friend recommendations are presented to users. The work we present in this paper focuses on the latter, in which we develop friend recommendations within social networks. The recommendation algorithms employed by sites such as Facebook are proprietary.

However, through observation, it is apparent that a friend of friends approach is being used. This approach is useful and efficient due to ease of implementation and the nature for humans to be drawn together through association. Similar network based approaches such as graph based induction and link mining have been considered but fall in comparison to the effectiveness and efficiency of a friend of friends approach. Study of few recommendation pattern used by web sites: Amazon recommendations change regularly based on a number of factors.

These factors include time and day of purchase, rate or like a new item, as well as changes in the interests of other customers. Because your recommendations will fluctuate, Amazon suggests you add items that interest you to your Wish List or Shopping Cart. E-Bay recommends product on bases of features of items. You Tube recommends items based on like/dislikes concept. In com recommends the songs that are popular, songs from the same movie, similar actor-actress, artist, director etc. RS is used to filter the item/product according to the user interest and looking at the like-minded.
users. Here, the friend matching algorithm is used for the implementation.

IV. SYSTEM OVERVIEW

Figure 1 shows the System Architecture diagram. This shows that how system actually work. The details are sends by the individual machines and are collected on the database. The flow of details are also shown within the figure Implementation of the given algorithm is done using NetBeans 7.4 and Mysql database. Mysql-Java connector has been used for linking NetBeans and Mysql database. The user interface is designed for accepting the values from the user upon which the algorithm has to be applied. Implementation details are like as follow.

1. User Interface is build using widgets from NetBeans Application Development tools.
2. Users will provide the relevant data through the interface.
3. Using the mysql-java connector the linking is done between Netbeans and MySQl.
4. The data is send to the back-end database.
5. Given algorithm is applied to extract the data from the database so as to recommend friends to the user.

The pseudo code of the friend recommendation mechanism is shown in Algorithm 1.

Algorithm 1: Friend Recommendation
Input: User query
Output: Recommended friend list
1: set D = d0,d1,...,dn−1;
2: set total = count; // set the count of database to total
3: for j in range 1 to total
4: if id==total
5: continue;
6: else
7: Compare id with D //Compare database
8: u[j]=dc
9: name[j]=usernames of dc
10: end for
11: print u[j]+name[j] // print result

Scope of Algorithm:
The concept of Friendzone is derived from the basic idea from the base paper Friendbook[14]. The concept gives rise to a new technology which the social networking systems can further use as advancement in recommending friends to others.

This new concept of friend recommendation can lead to new type of social relations amongst the people. Making friends based on lifestyles is a more efficient and reliable process for making a positive relationship amongst the people. As people gives a preference to the life styles than geographical approach for making friends. The algorithm can further be utilized by most of the social networking sites which provides facilities to connect to the world. Using this algorithm the approach for making friends is not bounded to only geographical or social relationship but also provides a way by which people judges to make friends in any part of the world.

Flow chart of given system is given in below figure 2

Comparison of output-

The graph clears that as the number of recommendation increases, the recommendation precision decreases. As the different users may have different activities which can be incomparable to the others, the increase in the number of
recommendation precision decreases with the increase in the number of recommendations.

V. CONCLUSION

In this paper, the survey of a new life style based friend recommendation system for social networks is presented. Outlining a recommender system for a social network is extremely difficult as the things suggested here spiritless merchandise. At the point when a friend is prescribed to a user and the user sends a friend request, the friend can in any case reject the request. There are numerous social elements which suppose a part in creating a relationship or a tie between users. Recommender systems are efficient tools that beat the data over-burden issue by giving clients the most relevant contents. In this paper, the design and implementation of friendbook: a scalable and efficient way to recommend friends on social networks through life-style has been presented. Implementation of the algorithm is done using NetBeans 7.4 and Mysql database. Mysql-Java connector has been used for linking NetBeans and Mysql database. The user interface is designed for accepting the values from the user upon which the Friend Recommendation algorithm has to be applied. Our methodology and results in this paper presents initial discoveries to a potentially strong method of providing friend recommendations in social networks while additionally gaining understandings into how friendships are formed.

VI. REFERENCES


[11]. https://www.google.co.in/

