A Survey on Friendbook Using Semantic based Friend Recommendation System

[1]S.Adsure [2]A.Arane [3]A.Chavhan [4]R.Jagdhane [5]A.Pardeshi

[1] *Sonali Adsure, Computer, SRESCOE Kopargaon, Maharashtra, India*
[2] *Arati Arane, Computer, SRESCOE Kopargaon, Maharashtra, India*
[3] *Ashwini Chavhan, Computer, SRESCOE Kopargaon, Maharashtra, India*
[4] *Rohini Jagdhane, Computer, SRESCOE Kopargaon, Maharashtra, India*
[5] *Amruta Pardeshi, Computer, SRESCOE Kopargaon, Maharashtra, India*

ABSTRACT

Existing social networking services advise friends to users based on their social graphs, which may not be the most correct to reflect a user's preferences on friend selection in real life. In this system a novel semantic based friend recommendation system for social networks, which advice the friends to users based on their life styles instead of social graphs. By taking advantage of sensor-rich smartphones, Friendbook expose life styles of users from user-centric sensor data, measures the similarity of life styles between users, and advice the friends to users if their life styles have high similarity .We 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. Upon receiving a request, Friendbook gaincoming a list of people with highest recommendation scores to the query user. 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.

Keyword: - *Friend recommendation, mobile sensing, life style, clustering, similarity metric, k-means, Activity Recognition, Social Networks, Pattern Recognition*

1. INTRODUCTION

A social network is a system where users (nodes) are joined with one another by relationship (edges). The edges are undirected and the quantity of edges demonstrates the quantity of companions a user's has. A percentage of the remarkable interpersonal organizations are Facebook, Google plus LinkedIn and so forth. Each client keeps up a profile. There are numerous properties in the profile which can be utilized to anticipate the quality of ties between diverse users.

The vast majority of the friend advise system depends on previous users connections to pick friend candidates. For example, Facebook depends on a social connection examination among the individuals who as of now impart basic friends and suggests symmetrical users as potential friends. Existing social networking services prescribe friends to users based on their social graphs, which may not be the most appropriate to reflect a user's favorites friend selection in real life. With the quick advancement of social network, approval systems in different fields design. A decent suggestion framework must be combine different sorts of suggestion impacts and assurance differences on the base of precision, in order to fulfil some disagreeable tastes.

One test with existing social networking services is the way to prescribe a good friend to a user. Most of them depend on previous user connections to pick friend candidates. In our ordinary lives, we may have several activities, which structure important groupings that shape our lives. In this system to utilize the word activity to

explicitly refer to the actions made in the order of seconds, for example, "running", "walking", or "reading", while we utilize the expression way of life to introduce to more raised amount reflections of day by day lives, for example, "office work" or "shopping". For example, the "shopping" way of life basically comprises of the "walking" movement, however might *likewise contain the "standing" then again the "sitting" exercises.*

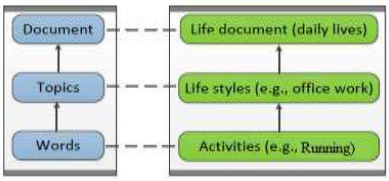

Fig. 1: A Relationship Between Word Archives And Individuals' Everyday Lives

The commitments of this work are summarized as follows:

 Friend recommendation is done based on life style of users.

 We display the everyday lives of users as life reports by collecting activities and use the probabilistic topic model to extract life style data of users.

 Then using similarity metric and calculate the similarity between users and constructing friend matching graphs.

 A user feedback mechanism for improving accuracy and based on that decide optimum threshold value

2. LITERATURE SURVEY

There is an association class of Web applications that include anticipating client expecting user responses to options.Such a facility is called recommendation system. Recommendation systems can be separated into two areas of center: object suggestion and link recommendation. Organizations, for example, Amazon and Netflix stress object suggestion where items are prescribed to clients in light of past behavioral examples . Person to person communication destinations for example, Facebook and LinkedIn concentrate on connection suggestion where companion suggestions are introduced to clients. The work we present in this paper mainly focuses on the latter, in which we develop friend Recommendation system within social networks. The recommendation systems employed by different sites are based on mutual friends. Friendbook ,a novel semantic-based friend suggestion system for social networking communities, which prescribes friends to user's focused around their ways of life rather than social graphs Based on the similarity metric, we model the relations between users in real life as a friend-matching graph.

The development of social networking systems, friend recommendation has become a lot of consideration. The existing friend recommendation in long range social networking systems, e.g., Facebook and Twitter, suggest friends to user's if, as per their social relations, they report common friends. In the temporary, other proposal components have additionally been proposed via analysts. Another Suggestion based on geologically related friends in social network by joining GPS data and social network structure.

. The main steps that required to be handling the anti-phishing are the following:

(1)Pattern Rrecognition: pattern recognition techniques in the agricultural domain. A unique and proper combination of pre-processing, feature extraction, feature selection and classification process is required for each domain or problem in order to optimize accuracy, speed and reduce cost by minimizing feature set used for training and classification. The theories behind pattern recognition are presented at the beginning and a review of different techniques applied in grading, remote sensing, diseases detection etc.is provided as part of the evolution

(2)Page Rank : Page Rank incrementally for evolving graphs. The key observation is that evolution of the Web graph is slow, with large parts of it remaining unchanged. By carefully delineating the changed and unchanged

portions and the dependence across them, it is possible to develop efficient algorithms for computing the Page Rank metric incrementally.

(3)Recommendation Techniques :

Recommendation techniques developed or proposed till now. Various categories in which recommendation algorithms can be classified are discussed above. Also various open source graph processing platforms are discussed in detail.

(4)Friend matching graph : It is a weighted undirected graph G=(V,E,W) where V represents users, Edge represents relationship and Weight represents similarity between users. At a time only 5-10 recommendation are made to the user. outcome of an anti-phishing technique depends on recognizing illegal websites and within moderate span of time. Even though a number of anti-phishing solutions are designed, most of these solutions were unable to make highly accurate decisions causing a rise of false positive decisions, which means labelling a legitimate website as fake. We focus on technical solutions proposed by scholars in the literature.

3. PROPOSED SYSTEM

The figure here shows the flow of recommendation process.

1. Firstly, We open the Application.

2. Then login it, with your ID and Password.

3. Then open your profile .

4. Profile information is already store in the databases. In the database we have to use data collection module.

5. This information is accessed by Life style Analysis.

6. Then life style indexing displays the count, how many User match the life style.

7. Then friend matching graph display the list of friend having similar life styles.

8. Then recommend the friend.

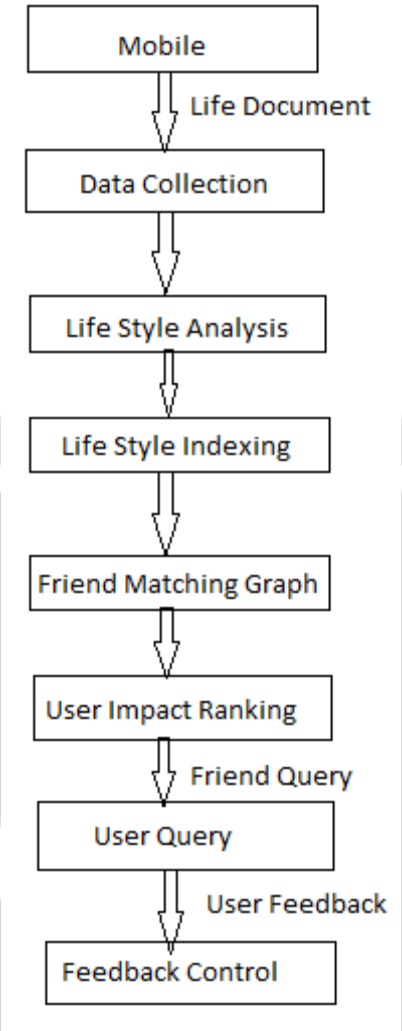

Fig 2: Proposed System Flow Diagram

4. Module Description

There are seven modules used in friend book recommendation system

1. Life Style Modeling

In Life style modeling having so many activities and life style. In these Life styles and activities are reflection of daily live, where daily live can be a mixture of life styles and life style is a mixture of activities.

1. Activity Recognition

In activity recognition there are two movement sensors, first is accelerometer and second is gyroscope, are used to signify the users' motion activities. Generally there are two mainstream approaches: Supervised learning and unsupervised learning. In supervised learning having inputs are assumed to be at the beginning and outputs at the end of the causal chain and unsupervised learning having observations are assumed to be at the end of the causal chain.

2. **Life Style Extraction and storing in Database**

In these life style extraction we have to use Graph API.It is the highly accurate extraction rule. Then we store this user information like name, email, likes etc. In that database we have create.

3. Similarity Metric Module

In this similarity metric module to measure the similarity between two life style .We also argue that two users do not share much similarity if majority of their life styles are totally different.

4. **Friend Matching Graph and User Impact**

Friend-matching graph is used to represent the similarity between their life styles and how they influence other people in the graph. It is a weighted undirected graph, where is the set of users and n is the number of user, they use the link weight between two users to represent the similarity of their life styles.

5. User Impact Ranking

Friend-matching graph is used to represent the similarity between their life styles and how they influence other people in the graph. User impact ranking identify the user quantitatively. The impact ranking means a user's capability to establish friendships in the network.
Once the ranking of a user is obtained, it provides guidelines to those who receive the recommendation list on how to choose friends. The ranking depends only on the graph structure of the friend-matching graph, which contains two aspects: 1) how the edges are connected; 2) how much weight there is on every edge.

Algorithm 1 Computing users' impact ranking

Input: The friend-matching graph G.
Output: Impact ranking vector r for all users.

1: **for** $i = 1$ to n **do**
2: $\mathbf{r}_0(i) = \frac{1}{n}$
3: **end for**
4: $\delta = \infty$
5: $\epsilon = e^{-9}$
6: **while** $\delta > \epsilon$ **do**
7: **for** $i = 1$ to n **do**
8: $\mathbf{r}_{k+1}(i) = \sum_j \frac{1-\varphi}{n}\mathbf{r}_k(j) + \varphi\frac{\sum_j \omega(i,j)\cdot\mathbf{r}_k(j)}{\sum_j \omega(i,j)}$
9: **end for**
10: $\delta = \sum_{i=1}^{n} |\mathbf{r}_{k+1}(i) - \mathbf{r}_k(i)|$
11: **end while**
12: **return** r

6. Friend Recommendation

It receives users Instance and server would extract the user's life style vector and based on which advice friend to the user. Recommendation results are highly dependent on user's preference.

Algorithm 2 Friend recommendation

Input: The query user i, the recommendation coefficient β and the required number of recommended friends from the system p.
Output: Friend list F_i.

1: $F_i \leftarrow \emptyset$, $Q \leftarrow \emptyset$
2: extracts i's life style vector $\mathbf{L}_i$ using the LDA algorithm.
3: **for** each life style z_k the probability of which in $\mathbf{L}_i$ is not zero **do**
4: put users in the entry of z_k into Q
5: **end for**
6: **for** each user $j \notin Q$ **do**
7: $S(i,j) \leftarrow 0$
8: **end for**
9: **for** each user j in the database **do**
10: $R_i(j) = \beta S(i,j) + (1-\beta) r_j \kappa$
11: **end for**
12: sort all users in decreasing order according to $R_i(j)$
13: put the top p users in the sorted list to F_i

- **K-means Clustering Algorithm:**

K-means is data clustering algorithm that is popular for cluster analysis in data mining. Simply speaking it is an algorithm to classify or to group your objects based on attributes/features into K number of groups. K is positive integer number. The grouping is done by minimizing the sum of squares of distances between data and the corresponding cluster centroid. Thus, the purpose of k means clustering is to classify the data. It also use to find the minimum distance to the centroid. The Problem is belongs NP-hard. They both use cluster centers to model the data; however, k-means clustering tends to find clusters of comparable 3-D extent, while the expectation- maximization mechanism allows clusters to have different shapes.

Document Clustering Algorithm:

Input: A collection of document DC1, Number of representatives K.

Output: A set of centroid documents DC1,....,DCk.

Steps:

1. Randomly select K documents as the initial cluster centers;

2. For each document Di do assign its membership to the cluster Cj that has the largest similarity sim(Di;DCj);

3. Find the most centrally located document in each cluster;

4. Repeat Lines 2-3 till small change in total sum of similarity;

5. return;

5. CONCLUSION

In Friend book on the Android-based smartphones, the life document of user daily live will be extracted and by using friend matching graph we recommends potential friends to users if they share similar life styles or the user life style having high similarity.

6. REFERENCES

[1] Zhibo Wang, Jilong Liao, Qing Cao, Hairong Qi and Zhi Wang "Friend book: A Semantic-based Friend Recommendation System for Social Networks",IEEE Transactions on Mobile Computing(2322373),TMC.2014

[2] B. Bahmani, A. Chowdhury, and A. Goel. Fast incremental and personalized pagerank. Proc. of VLDB Endowment, volume 4, pages 173-184, 2010.

[3] Automatic Transit Tracking, Mapping, and Arrival Time Prediction Using Smartphones. Proc. of SenSys , pages 68-81, 2011.

[4] Namrata M.Eklaspur ,Anand S.Pashupatimath "A Friend Recommender System for Social Networks by Life Style Extraction Using Probabilistic Method -Friendtome", *International Journal of Computer Science Trends and Technology (IJCST) – Volume 3 Issue 3, May-June 2015.*

BIOGRAPHIES

Adsure Sonali is pursuing B.E Computer Engg in SRESCOE,Kopargaon. Her areas of research interests include Information Security, Android.

Arane Arati is pursuing B.E Computer Engg in SRESCOE, Kopargaon. Her areas of research interests include Information Security; Android.

Chavhan Ashwini is pursuing B.E Computer Engg in SRESCOE, Kopargaon. Her areas of research interests include Information Security; Android.

Jagdhane Rohini is pursuing B.E Computer Engg in SRESCOE, Kopargaon. Her areas of research interests include Information Security; Android.

Amruta Pardeshi is pursuing B.E Computer Engg in SRESCOE, Kopargaon. Her areas of research interests include Information Security; Android.