

A Friend Suggestion System for Social Networks

¹Phepale Pranoti, ² Prof C.V Longani

¹ ME II year, ² Assistant Professor

¹ Computer Department,

¹ SRES's College of Engineering, Kopargaon, India

Abstract - A Friend Suggestion System for Social Networks uses the lifestyle of user to suggest friends. Many social networking sites recommend friends, items, books. For e.g. Facebook suggest the friends based on social relationship those who share common friends. Proposed system uses the lifestyle of user to recommend friend instead of social graph. The lifestyle of user can be determined from the user's daily activities that he performs every day. Based on the similarity of lifestyle between the users the friend matching graph is drawn. The friend matching graph is generated in tabular form. System analyze friend matching graph to find out which users are more similar. Based on that users are recommended. System also allows user to give feedback about recommended friends.

Index Terms - Friend recommendation, Social network, Text mining.

I. INTRODUCTION

In our everyday life social networking sites play important role. Social Networking site have more information about users. Social Networking sites also help to understand the behavior of user. Each social networking site notes each and every activity such as (what are user's likes, what user is doing, what are user's hobbies, does user likes movies). Social Networking sites also helps in getting user information such as age, gender, job profile, likes. The social networking sites such as Facebook, Twitter, and Google+ have provided us number of ways of making the friends.

There are various social networking sites available for recommending items and they recommend the items that are more popular. For e.g. Facebook recommends the friends based on social relationship those who have mutual friends. The existing recommender system considers a factor such as taste and people already they know to recommend a friend. 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. Major part of system consists of lifestyle extraction, friend matching graph generation, friend recommendation, and feedback control. Lifestyle and activity of the user is being considered for recommending friend. The system developed which will be easily embedded into the different application where recommendation is based on lifestyle.

II. LITERATURE SURVEY

Farrahi and Gatica-Perez.[2] find out the and proximity) and based on that they find out the daily routine of the people by using LDA model. Probability based method helps to find the people's lives from given data, and this can be used to find out daily life and location of user. Most of the activity found out using this approach is working from 11-5pm with 2-3 persons.

Hsu et al. [3] have consider interests of user in various aspect, personal details about user, and whatever that user post on page all the history about post in a user information page for each in order to provide suggestions. After that based on common interests the suggestion was done. It considers the personal vocabulary in the algorithm can be used to discover the activity of the user. They have applied the method to daily life of users.

D.M Blei.[5] in this the authors have explained latent Dirichlet allocation (LDA).LDA is a probabilistic model which is used in text mining. It consists of Document which is then collection of topics and topic which is consisting of words. In this firstly we need to decide the topic. For e.g. in LDA suppose topic is Cat related then the it will have words with their probabilities such as milk, kitten, and meow.

L.Bian et al.[6] They have presented a Matchmaker ,a system which is based on personality matching. The system is based on the mutual understanding of people .Matchmaker allows users network to match them with similar characters and uses the TV programs as matrix to suggest users friends.

SoundSense.[7] used the method to determine sound types such as music, voice and from that they determine the sound events. It may also consider different sound types.

Scope:

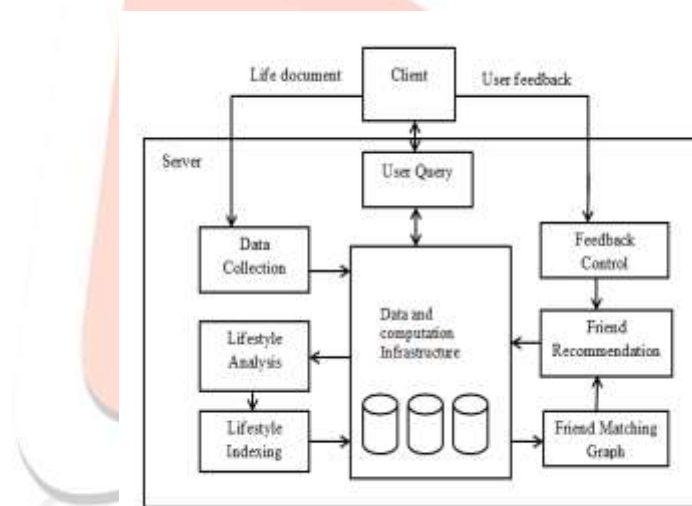
1. We can recommend a friend based on their life styles for social networking sites. .
2. Modules of the system will include Life style extraction, Friend matching graph, Query and friend recommendation and Feedback control.
3. To update the friend list as per user response.

Objectives:

1. To successfully extract peoples life style data.
2. To generate an appropriate friend matching graph
3. Provide friend suggestions as per the base idea
4. To make necessary changes as per the user feedback

III. SYSTEM OVERVIEW

Proposed system uses Lifestyle and activity of user to recommend Friend. System generates Friend Matching graph which is generated in tabular format. Friend-matching graph represent the similarity between users life styles and how they influence other people in the graph. The link weight between two users is used to represent the similarity of their life styles. System uses Recommendation algorithm in order to recommend friend. For recommendation firstly the friend matching graph is constructed and then recommends friends to the users by analyzing friend matching graph.

**Fig .1:** System Overview

It consists of following modules as explained below:

a) Data Collection Module:

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. This module is intended for data collection from the different users. Extract the keywords from the data which can be used for life style analysis. This data can be collected from different aspects like life styles, activities etc. of the user.

b) Lifestyle Analysis:

This module will analyze the data collected by previous module. The analysis can be in the form of counting the frequency of getting particular word in use by user, the users work activities etc. based on that we can connect the users with similar life styles which is the base idea of the proposed system. The lifestyle of user can be extracted from the user details and the activity can be determined by reading the post from the database and carrying out the preprocessing on that post in order to determine the activity. After we know the lifestyle of user then place into the database in the form of (life-style, user) instead of (user, lifestyle).

c) Friend matching graph generation:

In this module, we will generate the friend matching graph to represent the similarity between their life styles and how they influence other people in the graph. To characterize relations among users, in this section, we propose the friend-matching graph to represent the similarity between their life styles and how they influence other people in the graph. In particular, we use the link weight between two users to represent the similarity of their life styles. The weight given on edge between two users states how much user's lifestyle is similar. The graph helps to identify which user can be chosen as a friend.

e) Friend Recommendation

This module will suggest friends to the users by analyzing graph which is generated in previous module. The suggestion results are mostly depending upon users. Some users may want System to suggest users with high impact, while some may want to know the people having same life styles. It may also happen that some users want the system to suggest users who have high impact and also more similar life styles to them.

f). Feedback control

This module allows user to give feedback about recommended friend list. It will help us to understand how much that user is satisfied

IV. EXPERIMENTAL RESULTS

The system has been implemented using Asp.Net. The system uses MYSQL as the database. New user can register all their details and login to profile by using username and password

A. Data Collection:

B. Lifestyle Analysis:

Lifestyle Option	Choice
Favourite Cuisine	spicy
Favourite Place	mandi hills
Favourite Movie Type	Comedy
Favourite Cloth Brand	max
Favourite Car	swift
Favourite Actor	salman
Favourite Actress	dipika
Hobbys	reading
Sports	basketball
Occupation	software engineer

Fig.3. Lifestyle document for each user

C. Recommend Friend:



Recommended Friend Name	Similarity Value
pooja phepale	0.6318725474315
Pranali Phepale	0.3
Shivu Bhasle	0.3
swarnali Jondhale	0.3
swetal phepale	0.471404520291032

Fig.4. Recommend Friend based on Similarity metric

D.Feedback Control:



Fig.5. Feedback given by user

v.RESULT ANALYSIS

Graph represents the activity vs. probabilities. Total we have considered 15 activities and plotted the result for activity and corresponding activities probability for one user.

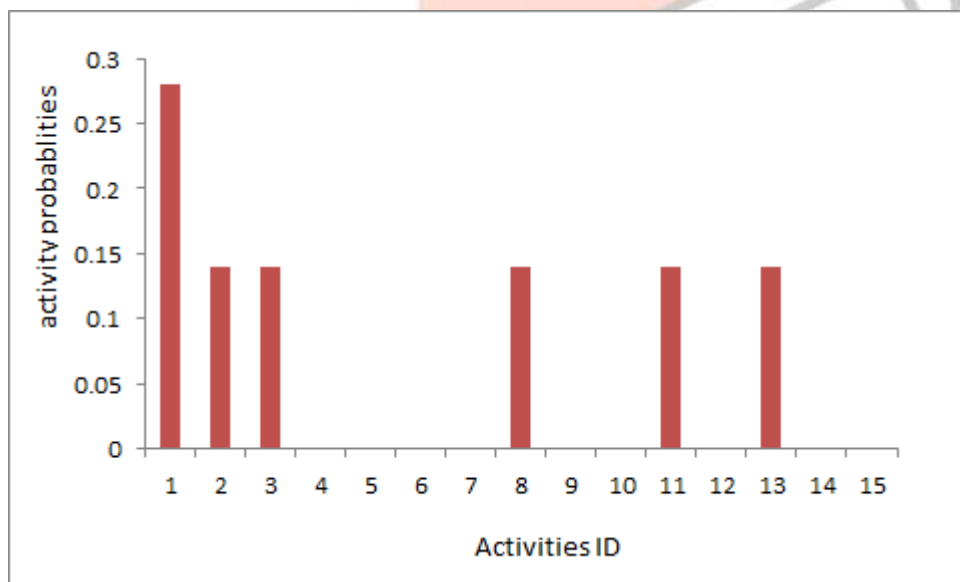


Fig 6.graph represent activity vs probabilities

Graph represents the userid vs. similarity value. We have calculated similarity value for each user and based on that we plotted graph.

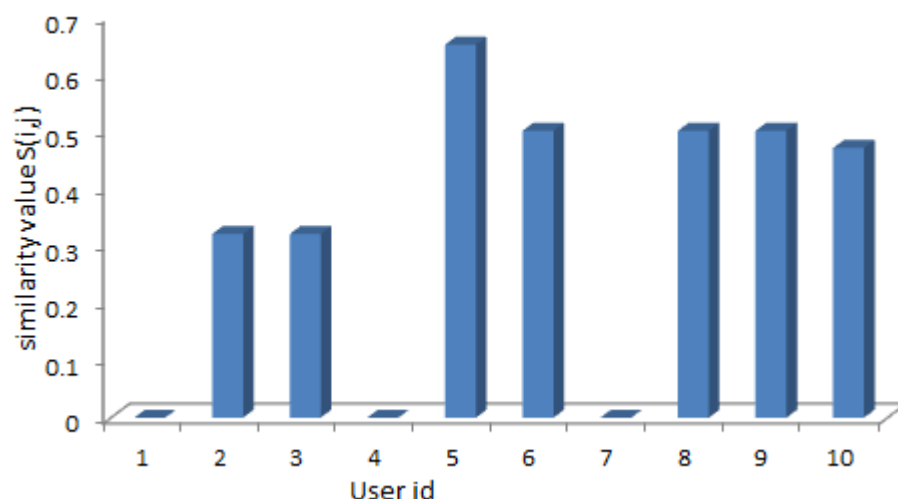


Fig 6.graph represents userid vs. similarity value

VI. CONCLUSION

A System for Suggestion of Friends for Social Networks uses lifestyle of user to suggest friend. This is different from many recommendation mechanisms. Proposed system uses Lifestyle and activity of the user for friend suggestion. For each user life document will prepared which consist of activity and lifestyle of that user. If we can find out the lifestyle and activity performed of user, then it will be very useful for recommendation. The Lifestyle of user can be extracted from user details and activity can be recognized from the post of the user on his profile. Based on the same lifestyle friend matching graph is generated in tabular form for each user. Also the algorithm helps in efficiently recommending the friends. In algorithm the score is calculated for each user. The system suggests list of user those who having the highest score. The user can also give feedback about suggested friends from which we can understand the satisfaction of user. The Feedback module helps to improve the efficiency of the system.

VII. ACKNOWLEDGMENT

I would like to take this opportunity to express our profound gratitude and deep regard to my Project Guide **Prof.C. V. Longani** for her exemplary guidance, valuable feedback and constant encouragement throughout the duration of the work. Her valuable suggestions were of immense help throughout my project work. Her perceptive criticism kept me working to make this project in a much better way. Working under him was an extremely knowledgeable experience for me.

BIOGRAPHY



Pranoti.D.Phepale received the B.E. degree in Computer Engineering from University of Pune, Pune, Maharashtra, India in 2013. She is currently pursuing the M.E.degree in Computer Engineering with SRES Sanjivani College of Engineering, Kopergaon, Savitribai Phule Pune University, Pune, Maharashtra, India. Her current research interests include Data mining

REFERENCES

- [1] Zhibo Wang, Jilong Liao, Qing Cao, Hairong Qi and Zhi Wang, "Friendbook: A Semantic-based Friend Recommendation System for Social Networks", IEEE Transactions on Mobile Computing, 2014.
- [2] Char K. Farrahi and D. Gatica-Perez, "Probabilistic mining of sociogeographic routines from mobile phone data", Selected Topics in Signal Processing, IEEE Journal of, 4(4):746-755, 2010.
- [3] W. H. Hsu, A. King, M. Paradesi, T. Pydimarri, and T. Weninger, "Collaborative and structural recommendation of friends using weblog-based social network analysis", Proc. of AAAI Spring Symposium Series, 2006.
- [4] T. Huynh, M. Fritz, and B. Schiel, "Discovery of Activity Patterns using Topic Model", Proc. of UbiComp, 2008.
- [5] D. M. Blei, A. Y. Ng, and M. I. Jordan, "Latent Dirichlet Allocation", Journal of Machine Learning Research, 3:993-1022, 2003.
- [6] L. Bian and H. Holtzman. Online friend recommendation through personality matching and collaborative filtering. Proc. of UBICOMM, pages 230-235, 2011.

- [7]. E. Miluzzo, C. T. Cornelius, A. Ramaswamy, T. Choudhury, Z. Liu, and A. T. Campbell, "Darwin Phones: the Evolution of Sensing and Inference on Mobile Phones", Proc. of MobiSys, pages 5-20, 2010.
- [8]. E. Miluzzo, N. D. Lane, S. B. Eisenman, and A. T. Campbell, "Cenceme-Injecting Sensing Presence into Social Networking Applications", Proc. of EuroSSC, pages 1-28, October 2007.
- [9]. L. Gou, F. You, J. Guo, L. Wu, and X. L. Zhang, "Sfviz: Interestbased friends exploration and recommendation in social network", Proc. of VINCI, page 15, 2011.
- [10]. S. Reddy, M. Mun, J. Burke, D. Estrin, M. Hansen, and M. Srivastava, "Using Mobile Phones to Determine Transportation Modes", ACM Transactions on Sensor Networks (TOSN), 6(2):13, 2010.
- [11]. I. Ropke, "The Dynamics of Willingness to Consume", Ecological Economics, 28(3):399-420, 1999.
- [12]. Z. Wang, C. E. Taylor, Q. Cao, H. Qi, and Z. Wang, "Demo: Friendbook: Privacy Preserving Friend Matching based on Shared Interests", Proc. of ACM SenSys, pages 397-398, 2011.

