FRIEND RECOMMENDATION USING LDA ALGORITHM

Shreyas Yeola [1] | Akshay Wakhare [1] | Swapnil Mule [1] | Shrinivas Halahalli [2]

[1] Student, Computer Engg, G.S.Moze C.O.E., Balewadi, Pune.

[2] Professor, Computer Engg, G.S.Moze C.O.E., Balewadi, Pune.

ABSTRACT

"Friend Recommendation using LDA Algorithm" is a novel semantic-based friend recommendation system for social networks,recommends friends to users based on their activity bag instead of social graphs. 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. Inspired by text mining, we model a user's daily life as life documents, from which his/her life styles are extracted by using the Latent Dirichlet Allocation algorithm. 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.So,our system integrates a feedback mechanism to further improve the recommendation accuracy. This system will be used on the Android-based smartphones.

KEYWORDS: Activity bag,Social graph,text mining.

Introduction:Few years ago,people used to make friends who were their neighbor's or colleagues.Which means only the people who work together or live near could become friends.With the rapid advances in social networks, services such as Facebook, Twitter and Google+ have provided us revolutionary ways of making friends. A recommender system is a personalization system that helps users to find items of interest based on their preferences. Recommender systems are efficient tools that overcome the information overload problem by providing users with the most relevant contents. The importance of contextual information has been recognized by researchers and practitioners in many disciplines including Ecommerce, personalized IR, ubiquitous and mobile computing, data mining, marketing and management.

The Existing system used Habits or life style, Attitudes, Tastes, Moral standards, Economic level, People they already know.In existing system,friend recommendation was done using search window.

We intend to implement the life style extraction using LDA and the iterative matrix-vector multiplication method in user impact ranking.Along with this we will provide recommendation based on user's status window as well.Also,the system will show the percentage of profile matching to the user.We model a user's daily life as Life Documents, from which his/her life styles are extracted by using Latent Dirichlet Allocation Algorithm. We further propose a Similarity Matrix to measure the similarity of Life Styles between users and calculate users' impact in terms of Life Styles with a friend-matching graph.

Materials and Methods: As time passed, World Wide Web (WWW) went on growing. Lots of information is available on WWW. All the information which we get is not relevant, only few of the mare relevant. When a user tries to search something on WWW s/he lands up with thousands of result. As a result,s / he will mess up with huge information. Hence fetching the actually required details becomes cumbersome and time consuming. This gives rise to data filtering system. In early days, for data filtering, Information Filtering (IF) was used. IF was basically developed for filtering documentation, articles, news etc. Looking to our era, e-commerce is growing explosively. Whenever a user makes a search for particu-

lar item on internet to buy, s/he will get many options. Looking at the options user gets confuse what to buy, and will not able to sort the item that is suitable to him/her.Thisproblem gave rise to Recommendation System [RS].

We use Latent Dirichlet Allocation model along with the Expectation-Maximization (EM) method to solve the LDA decomposition, where the E-step is used to estimate the free Variational Dirichlet parameter g and multinomial parameter F in the standard LDA model and the M step is used to maximize the log likelihood of the activities under these parameters. After the EM algorithm converges, we are able to calculate the decomposed activity-topic matrix.

Results and Discussion:

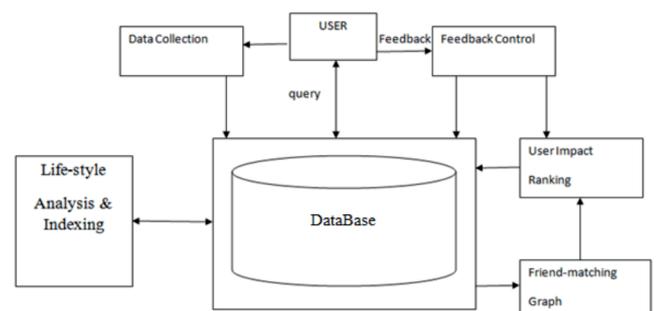
fig: Recommended System Architecture

Recommendation systems can be divided into two areasoffocus: 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 Linked In focus on link recommendation where friend recommendations are presented to users.

The work we present in this project, we develop friend recommendations system within social networks. The recommendation algo-

rithms employed by sites such as Facebook are proprietary. However, through observation, it is apparent that a friends-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.

Conclusion: We designed and implemented the Friend book, a semantic-based friend recommendation system for social networks. It is Different from the other friend recommendation mechanisms that relying on social graphs in existing social networking services, whereas this Friend book extracted life styles from user-centric data collected from sensors on the Smart phone and recommended potential friends to users if they share similar life styles.

REFERENCES:

1. "Friendbook: a semantic based friend recommendation system for social networks." Zhibo Wang, Student Member, IEEE, Jilong Liao, Qing Cao, Member, IEEE, Hairong Qi, Senior Member, IEEE, and Zhi Wang, Member.

2. Amazon. http://www.amazon.com/.

3. Facebook statistics. http://www.digitalbuzzblog.com/facebook-statistics-stats-facts-2011/.

4. Netfix. https://signup.netflix.com/.

5. Rotten tomatoes. http://www.rottentomatoes.com/.

6. G. R. Arce. Nonlinear Signal Processing: A Statistical Approach. John Wiley & Sons, 2005.

7. B. Bahmani, A. Chowdhury, and A. Goel.Fast incremental andpersonalized pagerank. Proc. of VLDB Endowment, volume 4, pages173-184, 2010.

8. J. Biagioni, T. Gerlich, T. Merrifield, and J. Eriksson. EasyTracker: Automatic Transit Tracking, Mapping, and Arrival Time Prediction Using Smart phones. Proc. of SenSys, pages 68-81, 2011.

9. L. Bian and H. Holtzman.Online friend recommendation throughpersonality matching and collaborative filtering. Proc. of UBICOMM,pages 230-235, 2011.

10. C. M. Bishop. Pattern recognition and machine learning. Springer New York, 2006.