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## *Recommendation of friends based on shared data and configuration for social network in data mining*

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**Abstract:** *In existing system friend's suggestions are based on the user profile details such as school, college etc. In proposed work, we present Recommendation system, based on shared data & configuration for social networks, which finds in four ways, in first way algorithm recommends friends to users based on their life styles instead of social graphs. In second way recommendation of friends to users based on user Area of interest. In third way recommendation based on lifestyle with Date of Birth. In fourth way recommendation based on lifestyle with living locality. Where recommendation system discovers life styles of users from user-centric shared data and configuration, measures the similarity of life styles between users, and recommends friends to users if their life styles and constraints have high similarity. Also based on number of messages shared by user, based on that application identifies user area of interest. By mining, we model a user's daily life style as life documents, from which his/her life styles are extracted by using the shared data and user configuration. We further propose a comparative metric to measure the similarity of life styles & constraints between users, and calculate the Gain in terms of life styles and constraints matching count with a friend's minimum threshold level. Upon receiving a request, recommendation of friends returns a list of people with highest recommendation scores to the user.*

**Keywords:** *Friend recommendation, friends, users, social networks, life style & constraints.*

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### I. INTRODUCTION

A social networking service (also social networking site or SNS) is a platform to build social networks or social relations among people who share similar interests, activities, backgrounds or real-life connections. In past years, people typically made friends with others who live or work close to themselves, such as neighbors or colleagues. With the rapid advances in social networks, services such as Facebook, Twitter and Google+ have provided us revolutionary ways of making friends. One challenge with existing social networking services is how to recommend a best friend to a user. The main types of social networking services are those that contain category places (such as former school year or classmates), means to connect with friends (usually with self-description pages), and a recommendation system linked to trust. Popular methods now combine many of these, with American-based services such as Facebook, Google+, LinkedIn, Instagram, and Twitter etc. According to these working, we group the people together include: 1) life style; 2) daily activities; 3) tastes; 4) ethics; 5) economic level; 6) living locality; 7) Area of interest . In this work, we use the constraint based method, keyword extraction method, this method is used to removing stop words & retrieving special keyword and clustering technique to specifically refer to the actions. First, how to automatically and accurately discover life styles & constraints from user centric shared data? Second, how to measure the similarity of users in terms of life styles & constraints? Third, who should be recommended to the user among the website user shared information? Based on number of messages shared by user, the application identifies user area of interest. To address these challenges, we present Recommendation system, a novel user interest & lifestyle based recommendation of friends based on shared data and configuration.

## Scope and Objectives

- According to work, Recommendation system is the first friend recommendation system exploiting a user's area of interest & life style information discovered from shared data and configuration.
- We propose a unique comparative metric to characterize the similarity of users in terms of life styles and constraints then construct a matching count with minimum threshold value and after sorting & reversing we retrieve top five users are recommend as friends to users based on number of messages shared by user.

## II. LITERATURE SURVEY

### *Social Networking Site*

The rapid growth and exponential use of social digital media has led to an increase in popularity of social networks and the emergence of social computing. In general social networks are structures made of social entities that are linked by some specific types of interdependency (e.g. kinship, friendship, common interest, beliefs, or financial exchange). Recommendation system like social graph generation & forecasting using social network mining, finding strong groups of friends, finding popular friends in social network are well known.

### *Survey papers:*

#### *Social Graph Generation & Forecasting using Social Network Mining*

Social network has gained remarkable attention in last decade, and people are becoming more interested in and relying on social network. The heavy reliance on social network sites cause them to generate massive data. Data mining provides wide range of techniques for detecting useful knowledge from massive data. These techniques are used for information retrieval, statistical modeling and machine learning & employs data preprocessing, data analysis, data interpretation.

#### *Graph Based Forecasting For Social Networking Site*

The Social networking site play an important role in today's world thereby attracting lots of researchers to take advantage of the user's information available in these sites. Mining the database using different algorithms like association rule mining require multiple database scan. In this research forecasting is based on the directed weighted social graph. It deals with visualization of a dataset and prediction of some occurrences based upon this data. The methodology proposed is to generate a social graph of user's actions and predict the future social activities using graph mining. A dataset from the social networking site is considered and converted to a directed, weighted social graph. This graph is updated dynamically based on the changes in the database of social networking site. By creating some mathematical rules applied on the graph, we could project the future activities of users in terms of community memberships, the strength of a relationship between two users without knowing the content of the discussion. We can also find the most popular community. To find the efficiency of this method, the result interpreted by this experiment will be compared to other methods used for prediction like Apriori etc

#### *Finding Strong Groups of Friends among Friends in Social Networks*

Over the past few years, the rapid growth and the exponential use of social digital media has led to an increase in popularity of social networks and the emergence of social computing. In general, social networks are structures made of social entities (e.g., individuals) that are linked by some specific types of interdependency such as friendship. Most users of social media (e.g., Face book, Google+, Linked In, My Space, Twitter) have many linkages in terms of friends, connections, and/or followers. Among all these linkages, some of them are more important than another. For instance, some friends of a user may be casual ones who acquaintances met him at some points in time, whereas some others may be friends that care about him in such a way that they frequently post on his wall, view his updated profile, send him messages, invite him for events, and/or follow his

tweets. In this paper, we apply data mining techniques to social networks to help users of the social digital media to distinguish these important friends from a large number of friends in their social networks.

### III. RELATED WORK

Amazon [1] recommends items to a user based on items the user previously visited, and items that other users are looking at. Netflix [3] and Rotten Tomatoes [4] recommend movies to a user based on the user's previous ratings and watching habits. Recently, with the advance of social networking systems, friend recommendation has received a lot of attention. Generally speaking, existing friend recommendation in social networking systems, e.g., Facebook, LinkedIn and Twitter, recommend friends to users if, according to their social relations, they share common friends. Meanwhile, other recommendation mechanisms have also been proposed by researchers. For example, Bian and Holtzman [8] presented MatchMaker, a collaborative filtering friend recommendation system based on personality matching. Kwon and Kim [13] proposed a friend recommendation method using physical and social context. However, the authors did not explain what the physical and social context is and how to obtain the information. Yu et al. [14] recommended geographically related friends in social network by combining GPS information and social network structure. Hsu et al. [12] studied the problem of link recommendation in weblogs and similar social networks, and proposed an approach based on collaborative recommendation using the link structure of a social network and content-based recommendation using mutual declared interests. Gou et al. [11] 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 recommendation of friends based on people's tagging behaviors in a music community. These existing friend recommendation systems, however, are significantly different from our work, as we exploit recent sociology findings to recommend friends based on their similar life styles & area of interest instead of social relations.

### IV. PROBLEM FORMULATION

Recommendation of suitable friends for a user in a social network based on user area of interest, lifestyles and constraints is a key factor for building a better relationship among people.

#### **Proposed Work:**

In this proposed work, we present a recommendation of friends based on shared data and configuration for social networks in data mining, which recommends friends to users based on their user area of interest, life styles and constraints instead of social graphs. Which finds in four ways, In first way algorithm recommends friends to users based on their life styles by extracting the possible lifestyle for each user then trace for each entry in buffer with all user lifestyle, Where recommendation system discovers life styles of users from user-centric shared data and configuration, measures the similarity of life styles between users, and recommends friends to users if their life styles have high similarity. Among that we sort and reverse top five users are recommended as friends. In second way recommend the friends to users based on Area of interest by extracting information of login user then apply the keyword extraction method that remove the stop words and retrieving special keywords (for example tom we have exam at 9am in this example the stop words we, have, at words are removed and retrieves only special words tom, exam) that data is compared with predefined data set by administrator based on that we cluster the messages shared by user then application identifies the user area of interest and same process is used for retrieve other users after comparing and matching. The application recommends the friends to user based on the type of messages. In third way recommendation based on lifestyle with Date of Birth, here we setting maximum (+3) and minimum (-3) example if present year 2016 minus user DOB 1990 plus 3 or minus 3. In fourth way recommendation based on lifestyle with living locality here we pass the parameter as living locality to the above algorithm. The proposed design will develop a general friend recommendation system by using constraint based method, keyword extraction method and clustering technique and friends suggest will be given to the user. Finally the results will show that the recommendations accurately return the preferences of users in choosing friends.

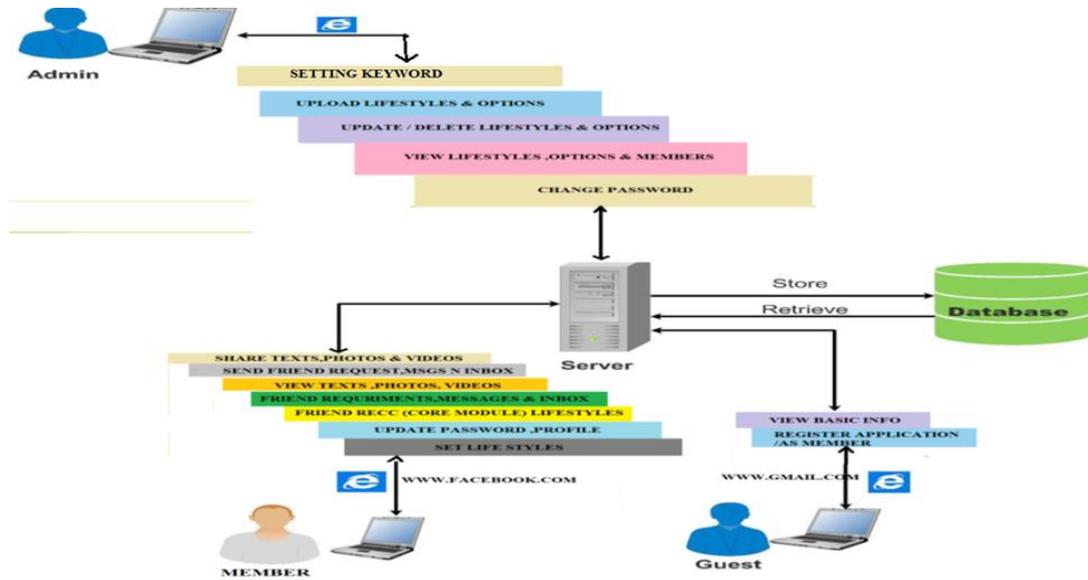


Fig 1: System architecture

**ALGORITHM: FRIEND RECOMMENDATION****Friend Recommendation based on User Interest [AOI]**

**Input**– Users shared information (texts, photos, videos)

**Output**– Identification of User's AOI and Recommendation of Users based on Ci(AOI) and Min Threshold Value (min\_recc)

- Scan the User Database (retrieval of User shared information)
- Tokenization [keyword extraction method – removing the stop words and retrieving the keywords]
- Clustering the messages shared by the users (grouping of similar objects)
  - by comparing with the predefined dataset (created by the admin)
- Identify the user area of interest (cluster[AOI] with more number of objects)
- Retrieve other users shared information from the database [Ui]
- for each entry Ui[users] in buffer[storage server] do
- Trace all users AOI, for the follow the following steps
  - Tokenization [keyword extraction method – removing the stop words and retrieving the keywords]
  - Clustering the messages shared by the users (grouping of similar objects)
    - by comparing with the predefined dataset (created by the admin)
- Compare the present user AOI with the previous users AOI.
- Check if(matching count>min\_recc) [number of msgs to compare]
- Put matching count into arraycount[arraylist]
- arraycount.Sort();
- arraycount.Reverse();
- Retrieve the user details and display [top 10 users]

**Friend Recommendation based on User Life Styles***Input* – User Life Styles(ULSi), Options(Oi)*Output* – Recommendation of Users based on Ci and Min Threshold Value (min\_recc)

- generate all possible user life styles for the user
- generate all constraints [lifestyles]
- for each entry Ui[users] in buffer[storage server] do
- Trace all user lifestyles then,
- Compare the values of present user life styles with the previous users life styles.
- Check if(matching count>min\_recc)
- calculate the gain
  - Gain = 2.0 \* matching count/min\_recc;
- Put Gain into arraycount[arraylist]
- arraycount.Sort();
- arraycount.Reverse();
- Retrieve the user details and display.

**Friend Recommendation based on User Life Styles and User DOB***Input* – User Life Styles(ULSi), Options(Oi) + DOB*Output* – Recommendation of Users based on Ci and Min Threshold Value (min\_recc)

- Here we passing a parameter as DOB to the above algorithm with below logic
- Set the MaxDOB and MinDOB (+3 , \_3)
- Check if(matching count>min\_recc && MinDOB<DOB && DOB<MAXDOB)

**Friend Recommendation based on User Life Styles and Living Locality***Input* – User Life Styles(ULSi), Options(Oi) + LL*Output* – Recommendation of Users based on Ci and Min Threshold Value (min\_recc)

- Here we passing a parameter as living locality to the above algorithm

**V. CONCLUSION**

In this paper, we present the recommendation system for social network based on shared data and configuration. We recommend the friends to user in four ways 1> recommendation of friends based on lifestyle instead of social graph 2> based on number of messages shared by user application identify the user area of interest 3>based on setting maximum (+3) and minimum (-3) the application identifies lifestyle with DOB 4>based on lifestyle with living locality. According to these studies the application provides best friends to user. Also this application provides simplified and reduced manual work, large volumes of data can be stored, and it provides Smooth workflow.

## VI. FUTURE SCOPE

We can add up SMS verification for the new users of the website during registration. We can add up the SMS alert module as a future enhancement to the application, where the website user receives an SMS alert for any notifications such as friend request, messages etc. We can add a module called Photo Album, where website users can see all photos. Also we can add the Email Module as a future enhancement to the application where the website user gets an email for any notifications such as friend request, messages etc.

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