

Friend & Group Recommendation System Based on User's Lifestyle & Finding Fake Users.

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Abstract - Now a day's Social networking services are a very popular means to communicate with users around the all over world. All this social sites work like an online community of internet consumers. Out of these users plenty of members share common tastes in hobbies, and interests. Some of the popular social networking services are Twitter, Facebook, LinkedIn and so on. Social network site provide an important source of information regarding users and their interactions which is very valuable for the recommender systems in order to guess valuable events. In web-based social networks trust relationships between users reveal the synonymy of their interests, likes, lifestyles. In our proposed work, we are developing social network based recommender system named "Friend Recommendation System" an application that utilizes the information of the user and makes suggestions by choosing users major interest and measuring the synonymy between each user and thus recommending friends, groups and news by using Recommendation Algorithm, mainly based on user lifestyle, interest. We are also using this user interests to give user an efficient search facility on social network.

Key Words: Social network, Recommendation System, Similarity graph, SNS etc.

1. INTRODUCTION

Social networking is increasing the number of social contacts by making connections through individual by individual. It creates interconnected Internet communities that help people make contacts that would be good for them to know. Some of the web applications dedicated to social networking include LinkedIn and Facebook, Twitter

etc. [1]. Recommendation systems that try to recommend items to users have become more and more popular in recent years. For example, Amazon [2] suggest items to a user based on items the user earlier visited, and items that other users are looking it.

The frequency of visiting Social networking sites is now more than personal email and other Accounts. There are various social networks which have grown to such enormous proportions that they rival entire countries in terms of population. In India also more than 80% Peoples are in on networking sites. If we consider Facebook as an example will be a country it would be the fifth-most populated in the world. Today Facebook is one among the most popular Social sites in this area of communication and sharing, Advertising. The challenge for the existing social networking services sites is how to suggest a good friend to a user as most of them rely on the pre-existing user relationships to pick the friends. And find out the fake users on social sites.

For more than a decade recommendation systems are proposed to overcome the information overload, Finding Fake user, Recommendations of friends. Many algorithms and systems have been developed for the same. Still, they face the challenges for that. The recent emergence of online social networks provides us with enormous amount of information related to user behavior and friend interactions have demonstrated their importance to develop an efficient recommendation system in this field. And to make a social network more user Friendly. If we consider Face book's the friend recommender system is based on the concept of social graphs. This system wasn't found to be much appropriate to recommend. So here in our proposed work we are presenting Friend Recommendation System - A multiple recommendation system, which recommends friends, groups and news based on interests and life style of an users. We are also providing a mechanism in order to find fake users from the system.

2. LITERATURE REVIEW

To make our proposed system more strong. A lot of researchers have carried out their work in the area of recommender system in the past decade by using various techniques. These recommendations can be related to any applications, Social sites such as E-commerce application, Social Networking sites. Here in this paper we are considering recommendations system for social networking sites based on user area of interests. This paper presents here a couple of such techniques.

Author Joonhee Kwon and Sungrim Kim et.al in paper [3] when compared with the traditional recommendation methods, this approach finds the friends to satisfy a user's current contexts.

Till now in previous recommendation system the word used here Context has rarely been incorporated. Next this word context can be divided into two level first physical and second social contexts. In this approach they represented a friend recommendation system using the physical and social context of users in social network. Here they have calculated friendship score by using the both spiritual and social friendship. Here the spiritual friendship is computed by physical contexts and social friendship is computed by using the social contexts of users. First the spiritual friendship score is computed using by a logged context score and an inputted context score of users. The second the social friendship score is calculated using distance between friends in the social friendship graph. We can use this method for context-aware applications using relationship of a friend in social network services. The main contributions of this paper are described as given below.

1. Firstly, in this method calculate the friendship score based on similar behavior using physical context of that user. The Physical context of that user is nothing but the current location and time.
2. Secondly, the method calculates friendship score with friend relation in the friendship graph using social context.
3. Finally, combine the all of the friendship scores and then recommend friends by the scoring values.

Another work by Li Bian and Henry Holtzman [4] has proposed the system called as Matchmaker, The approaches used in this paper are personality matching and collaborative filtering. In this paper they have mentioned that the exponential growth of online social networking sites has captivated our attention in past few years. So now it becomes the emerging field of Network and Information Ecology, which can be helpful for much analysis. This knowledge has led many new research efforts into the study of social graphs between users. These social graphs can be useful for drawing relations between users, but they realized that the social graphs are

not always a best model for matching information and drawing connections between users. One of the main problems of existing social graphs is that its closeness matching method does not necessarily provide enough contexts to users. In order to overcome these problems they have proposed Matchmaker which is an attempt to address this problem by trying out different approaches like personality matching for efficient friend recommendation. They have developed this system on android device and then tested some users in order to draw feedback for further improvement in this application. The feedback comments from users has suggested that personality similarity does provide the users with more data about suggested friends by this system as compare with closeness matching. Another information that they got from this reviews, that a combination of personality matching and proximity matching will work even good in terms of giving the users more data and sure to add a new friend online efficiently. The main contribution of them are summarized as follows,

1. MatchMaker suggests user a friends whose parallel TV character is friend with the user's parallel TV character.
 2. We decided to allow a user's 1st degree friends on Facebook to recommend characters that are identical to the user.
 3. Then system ranks the characters and when the system finds a connection between two users in contrast with a TV characters' relationship, it recommends the two users to become friend with each other.
- William H. Hsu and Andrew L. King [5] proposed an approach that based on the collaborative recommendation Friend using the link structure of a social networks and content-based recommendation of friend using mutual declared interests of users, this mutual interests are further used in order to draw the links between users. This paper presents a recommender system for links in a social network. Such as links have different meanings depending on the start and end points between users of a weblog service denote friendship between social network users and communities. In this work they have investigated the problem of link recommendation in such weblog-based social networks, and to overcome the problems describe an annotated graph-based representation for social networks. The name of this project is LJMiner recommendation System for the popular weblog service named LiveJournal. This system differentiates friends from non-friends in a connected group of users with greater efficiency than the recommender system actually used by LiveJournal namely, first the ranking users and seconds the communities by decreasing count of mutual interests. They have designed and developed a HTTP-based spider called LJCrawler to harvest user information from

LiveJournal weblog. LJCrawler is a multithreaded program collects an average of five records per sec by traversing the social network in deep and obtaining the results in a master index file. By the use of this crawler they compiled an adjacency list and the following ground features for each user first Account type (user, community) second Paid status (free, paid, permanent) and third Dates of creation and last update and Interest list .

The main contributions of them are summarized as follows:

1. First it calculates popularity of the user.
 2. Popularity of the user.
 3. Number of other friends besides the candidate.
 4. Number of existing friends of the candidate besides the user.
 5. Number of mutual friends between user and candidate.
 6. "Forward removed distance" is then measured.
 7. Backward distance from candidate to user in the graph.
 8. Number of mutual interests between user and candidate.
 9. Number of interests listed by user.
 10. Number of interests listed by candidate.
 11. Ratio of the number of mutual interests to the number listed by user.
 12. Ratio of the number of mutual interests to the number listed by candidate.
- Then mutual interest count is stored in the matrix. And then recommend friend.

2.1 Comparative Study

Sr. No.	Name	Working	Limitation
1	Matchmaker, a collaborative filtering friend recommendation system based on personality matching	MatchMaker recommends user to become friends with someone whose matching TV character is friend with the user's matching TV character.	1. Does not recommends friend based on mutual relationship i.e., proximity matching. 2. Matchmaker does not provide the expected result.
2	Friend Recommendation method using physical and social context.	Firstly, method computes the friendship score based on similar behavior using physical	1. Cannot implement the algorithm using physical context and social context. 2. Cannot

		context and social context.	make a prototype using this method.
3	Collaborative and Structural Recommendation of friends using Weblog based Social Network Analysis.	It calculates number of other friends & number of existing friends of the candidate besides the user & number of mutual friends between user and candidate. Then it calculate "Forward deleted distance"& backward distance. Then mutual interest count is stored in the matrix. And then it recommends friend.	1. Scaling up to tens of thousands and eventually millions of users. Crawling 8 million records is at least technically feasible, but scaling up the graph analyzers is a challenge.

3. PROPOSED WORK

In our proposed work we are presenting, "Friend & Group Recommendation System Based on User's Lifestyle & Finding Fake Users" which present friend recommendation system for social networks, which recommends friends to user based on their life styles instead of interconnection of relationships in social network. In addition to the Friend Recommendation, we also recommending Groups, News & Event to the user based on lifestyle. And we also provide a mechanism for identifying fake users in system.

4. CONCLUSIONS

In this paper, we presented the Friend & Group Recommendation System Based on User's Lifestyle &

Finding fake users. Outlining a recommender system for a social network is difficult as the things prescribed here are not some spiritless merchandise. There are various social elements which assume a part in creating a relationship or a tie between users in social streams. Recommender systems are efficient systems that beat the data overburden issue by giving clients the most relevant contents out of the vast data. Different from the recommendation mechanisms relying on social graphs and mutual friends in existing social networking services. We have presented a system which system which extracts user interest vector from user-centric data and recommends potential friends, groups and news to users if they share similar interest.

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