

# Survey on Friend Recommendation System for Social Network's

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**Abstract** - *In this paper; we discuss the recommendation in web logs and similar social networks. First, we present a collaborative recommendation using the link structure of a social network and semantic-based recommendation using mutual friend's interests. Next, we describe the application of an approach to a small representative subset of a large real-world. Friendbook discovers life styles of users from user-centric sensor data then it measures the similarity of life styles between users and recommends friends to users if their life styles have high similarity. Inspired by text mining, we present a user's daily life as life documents. This project focuses on providing the overview about the various categories of recommendation techniques developed till now.*

**Key Words:** *social networks, collaborative recommendation, user-centric, life styles*

## 1. INTRODUCTION

The development of social networks generated a major improvement in information spread. From data to search and from search to social interaction user around the world are more deeply involved with the Internet. A main use of social networks is to customization of user experiences. Recommendation systems used for providing quality of customized user experiences. The main aim in developing good friend recommendations form the life style of human's perception of friendship, which gives a cause for heterogeneity in social networks. It is very useful for humans to change their view of friendship, this view varies from person to person in which a social network can undergo frequent and abrupt change over time even without the introduction of new nodes.

Recommended systems help users to identify their interests and set the choices by predicting the usefulness degree of an item or group of items to these users. This system defined as a special type of information about which items might be interesting to users. In this paper describes how this hybrid approach was used to develop

LJ Miner, a recommended system for the popular weblog service Live Journal. LJ Miner differentiates friends from non-friends in a connected group of users with greater accuracy than the recommended system. This task is similar to a friend recommendation task which gives candidates within a specified radius; so that result is a strong positive indication that LJ Miner can generate better recommendations than simple graph-based recommendation in a fielded application [7].

### 1.1 Related Work

Recommendation systems can be divided into two areas i.e. object recommendation & link recommendation. Social networking sites such as Facebook and Twitter focus on link recommendation where friend recommendations are presented to users. Kuan et al. proposed an algorithm to locate groups using a transitive extension based approach [1]. This research proposed the use of a 1.5 clique extension method to derive sub structures, or communities within social networks. Results show that this method was fairly effective in finding community of friends. Research by Leskovec, et. al., emphasized the relevance and effectiveness of multi objective functions in recommendation algorithms [2]. However, similarly to Lipczak and Milios, the focuses on community detection. An analysis on brain networks using multi objective functions was per formed by Santana, et. al [3].

The most important objective of recommended systems is to estimate the ratings for the items that are new for a user [4]. Ultimately, after calculating the estimated rates for the yet unrated items, an ordered list of most related items can be prepared and suggested to the target user. A number of previous studies have revealed the contribution of recommended systems in education. A collaborative filtering method was used in a research to recommend documents that will either encourage the users to expand their knowledge of a given topic [5].

## 2. METHODS AND ALGORITHM

Here we discuss the different methods and Algorithms i.e. network theory, LJ Crawler and ECSN algorithm in detail.

### A. Network Theory:

Network based approaches generally perform providing quality recommendations. Work in both areas i.e. industrial and academic sectors emphasize the use of the friend of friend's method. The intuition is derived from the idea that is more probable a person will know more a friend of their friend rather than a random person. This approach implies a person is more likely to pursue a relationship based on a common association. However, this does not provide any insights into human cognitive components, which is a multidimensional belief system that may change over time [6].

First we initialize filtering process by removing likely irrelevant individuals using the friends of friend's method. This method is widely accepted in existing social networking sites such as Face book and Twitter as means of narrowing the search space for potential links. They utilize this method as people are generally drawn together through some common interest or association. This choice is essential in the filtering process, since it is more likely an individual will capture a relationship given in the common association of an existing friend.

### B. LJ Crawler:

In this paper describes how this hybrid approach was used to develop LJ Miner, a recommended system for the popular weblog service Live Journal. LJ Miner differentiates friends from non-friends in a connected group of users with greater accuracy than the recommended system. This task is similar to a friend recommendation task which gives candidates within a specified radius, so that result is a strong positive indication that LJ Miner can generate better recommendations than simple graph-based recommendation in a fielded application [7].

To design the graph structure and attributes describe in the previous section, we developed an HTTP-based spider called LJ Crawler to harvest user information from Live Journal. This multi-threaded program collects an average of 5 records per second and traversing the social network depth-first and archiving the results in a master index file. Because Live Journal's functionality for looking up users by user number is only available to administrators, we

decide to compile a list of seeds for a disjoint-set representation of the disconnected social network.

### C. ECSN Algorithm:

In the present study, an enhanced version of content-based recommender systems is proposed, which takes advantage of social network based factors to improve the performance of recommendation process in academic social networks. While the pure content-based recommender algorithm considers only the given user's preferences, the proposed ECSN algorithm takes into account the preferences of users' friends and faculty mates too. By improving the prediction accuracy of the recommendation process the higher level of satisfaction is achieved [8].

In reference to the experimental method selected for this research i.e. online study having a pool of users for interacting with different recommender systems was essential. In proposed model, the ECSN recommender engine is responsible for collecting the relevance feedback from My Expert users, generating and keeping updated the user profiles based on their elicited preferences during the interactions with the systems. ECSN recommender algorithm is applied to find top 10 academic items among 100 submitted ones in each week of study and shapes the weekly e-Newsletter for each member of My Expert.

## 3. CONCLUSIONS

This paper focuses on providing the overview about the various recommendation techniques developed. Various categories in which recommendation algorithms can be classified are discussed above. In this we focus on initial findings to a potentially strong methods and algorithms of providing friend recommendations in social networks while additionally gaining insights into how friendships are established.

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