



# A Survey on Friend Recommendation for Online Social Network

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**Abstract---**Twenty years ago, people typically made friends with others who live or work close to themselves, such as neighbours or colleagues. With the rapid advances in social network services such as facebook, Twitter, Google+ have provided us revolutionary way to making new friends. In this paper, which recommend the friends to their user based on their life style instead of social graph. By using sensor rich smart phone and then inspired with the text mining, we model the daily life of user as a life document, from this the life styles are extracted by Latent Dirichlet allocation algorithm. Further use the similarity metric to measure the similarity of life style between the user and calculate the user impact with the friend matching graph. Finally, The system to integrates the feedback mechanism to improve the accuracy of recommendation.

**Keywords:** Life style, friend recommendation, activity recognition.

## I. INTRODUCTION

Mobile computing is a technology that allows the transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to the fixed physical link. The Mobile computing involve:

### *Mobile Communication:*

It refers to the infrastructure that ensures the seamless communication goes on.

### *Mobile software:*

It is actual program that runs on the mobile hardware. It deal with the characteristics and requirements of mobile application. This is the engine of that mobile device.

### *Mobile Hardware:*

It includes mobile device or device components that receive or access the mobility of service. Mobile device are becoming increasingly sophisticated and the latest generation smart phones

Now incorporates with many diverse and powerful sensors. These sensors include GPS sensor, light sensor, audio sensor etc.

The availability of these sensors in mass marketed communication making new opportunity for data mining and data mining application.

## II. PROBLEM STATEMENT

In the existing system of social network recommend the friends to the user based on their social graph (Profile information based). They use the rules to group the people together by using two technique:

- People they already know
- Taste
- For example: Facebook relies on social link analysis among those who already share common friends and recommends symmetrical users as potential friend

Unfortunately, this approach may not be the most appropriate user preference friend selection in real life.

## III. PROPOSED SCHEME:

Zhibo Wang et al. [1] In this paper is semantic based friend recommendation system for social network, which recommend the friends to the user based on their life style. Upon receiving the request the system returns the people with highest recommendation score. It also concern the privacy at data level and life pattern level.

### *Methodology:*

Text Mining – we model the daily life of user as a



life document. Life document contains the mixture of life style and then the life style contains the mixture of activities.

**Probabilistic topic model** – It discovers the probability of life style.

**Similarity Metric**– To measure the similarity of life style between the user.

**User impact Ranking** – is reflected by his neighbors in friend matching graph.

**Advantage:**

- In traditional utility theory is just an assumption that does not have any explanation. Here the explanations are put forward that satisfies our physical needs.
- User has to be feeling independently.
- This process increases the consumption rate of social network.
- It also concerns the privacy.

#### IV. RELATED WORK

X. Yu, A. Pan *et al.* [2] This paper recommends friends to the user based on GPS-based cyber physical social network by combining GPS data with social network information. It generates the set of GPS patterns to describe people's real life interaction and correlation. It overcomes the traditional link prediction method (find the friend solely on social network information). Christo Ananth *et al.* [6] proposed a secure hash message authentication code. A secure hash message authentication code to avoid certificate revocation list checking is proposed for vehicular ad hoc networks (VANETs). The group signature scheme is widely used in VANETs for secure communication; the existing systems based on group signature scheme provide verification delay in certificate revocation list checking. In order to overcome this delay, this paper uses a Hash message authentication code (HMAC). It is used to avoid time-consuming CRL checking and it also ensures the integrity of messages. The Hash message authentication code and digital signature algorithm are used to make it more secure. In this scheme the group private keys are distributed by the roadside

units (RSUs) and it also manages the vehicles in a localized manner. Finally, cooperative message authentication is used among entities, in which each vehicle only needs to verify a small number of messages, thus greatly alleviating the authentication burden.

**Methodology:**

**GPS pattern extraction**–convert the noisy GPS data into meaningful GPS pattern.

**Pattern based heterogeneous network building** – combine geographical and social network information together in one network.

**Random walk with restart on the network** – Use random walk score to measure similarity between people vertices and then use the transition probability matrix to describe the transition capability.

**Advantage:**

- This type of friend recommendation is useful in people wanted to organize real life events like party, game etc.

**Disadvantage:**

- It only considers the user's current geography.

L. Bian *et al.* [3] This paper recommends friends to people by analyzing and matching people's online profile with the profiles of TV characters. For producing rich conceptual information the collaborative filtering in the existing social network. Then use the relationship in TV programs as a parallel comparison matrix. This type of friend recommendation suits them well by their social network.

**Methodology:**

**Collaborative Filtering** – Identifies the user with choice similar to the target user and then computes the prediction based on the score of the neighbours.

**Personality Matching** – It evokes the high probability of sustainable relationship.

**Advantage:**

- It uses the social information and mutual understanding among people.



- Personality provide rich conceptual information.

*Disadvantage:*

In this paper the proposed friend recommendation which is used in context aware applications. The author propose the friend recommendation using physical and social context.

*Methodology:*

Physical Context – It computes the friendship score based on the similar behavior .

Social Context – It computes the friendship score based on the distance between the people in the

friend matching graph.

*Advantage:*

- Finding friends satisfy the current user's context.

*Disadvantage:*

- However the authors does not explain what physical context and how to extract the information

## V. COMPARATIVE STUDY:

	RECOMMENDATION METHOD	FIND SIMILARITY ON	REMARKS
Friendbook: A Semantic - Based Friend Recommendation System for Social Networks	Context and content	Life style and Location	It satisfy the user physical needs therefore increase the consumption rate of social network.
Geo-friends recommendationin GPS-based cyber-physical social network	Context and content	Location similarity	Do not capture the user interest.
MatchMaker: A friend recommendation system through TV character matching	Collaborative Filtering	Ratings given from user	Application limited to TV shows
Friend recommendation method using physical and social context	Context	Attributes from User Profile	Used in context aware application. Method to extract the physical context doesn't explained.

## CONCLUSION

We conclude that, compared with other friend recommendation system, the life style based friend recommendation that give the source of

enjoyment because they fulfil the user physical need. This process increase the consumption rate of the social network. The privacy is concerned at two different level instead of telling similar life style between the people it only shows the





recommendation score. In future more security features will added

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