An Efficient Friend Recommendation System for Online Social Network

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ABSTRACT

As all current generations are surviving in the world of network since all are able to interconnect with each other. An enhancement of social networks defines avenues for interconnecting close ones those are part of daily life. Since describing recommendations to peoples is most tedious task to accomplish efficient social network. Here Friendbook defines recommendations by considering all necessary facts and semantics related to peoples. It had also implements feedback mechanism for future purpose to improve recommendation accuracy.

Keywords: *- Friend list, Assessment, Life style Analysis, Ranking User Impact Key.*

1. INTRODUCTION

The mobile development community is at a tipping point. Mobile users demand more choice, more opportunities to customize their phones, and more functionality. Mobile operators want to provide value-added content to their subscribers in a manageable and lucrative way. Mobile developers want the freedom to develop the powerful mobile applications users demand with minimal roadblocks to success. Finally, handset manufacturers want a stable, secure, and affordable platform to power their devices. Up until now single mobile platform has adequately addressed the needs of all the parties.

Enter Android, which is a potential game-changer for the mobile development community. An innovative and open platform, Android is well positioned to address the growing needs of the mobile marketplace. This chapter explains what Android is, how and why it was developed, and where the platform fits in to the established mobile marketplace.

Android is hailed as "the first complete, open, and free mobile platform."

Complete: The designers took a comprehensive approach when they developed the Android platform. They began with a secure operating system and built a robust software framework on top that allows for rich application development opportunities.

Open: The Android platform is provided through open source licensing. Developers have unprecedented access to the handset features when developing applications.

Free: Android applications are free to develop. There are no licensing or royalty fees to develop on the platform. No required membership fees. No required testing fees. No required signing or certification fees. Android applications can be distributed and commercialized in a variety of ways.

Android is an operating system and a software platform upon which applications are developed. A core set of applications for everyday tasks, such as Web browsing and email, are included on Android handsets.

The Android platform is designed to be more fault-tolerant than many of its predecessors. The handset runs a Linux operating system, upon which Android applications are executed in a secure fashion. Each Android application runs in its own virtual machine. Android applications are managed code; therefore, they are much less likely to cause the phone to crash, leading to fewer instances of device corruption.

2. LITERATURE SURVEY

The Literature Survey is the most important part of comes before any implementation since it gives a basic and gives efficient way to effective implementation. Kwon [4] proposed friend recommendation which is used in context aware applications these context-aware systems provide the user with adaptive recommendations from available huge information. The recommendation method using context A challenging research issue in social computing is the recommendation method using context. The author proposes a friend recommendation method using both physical and social context. The key idea of the proposed method is consisted of the following three stages; in first step it computes the friendship score based on similar behaviour using physical context computing score the traditional regular information retrieval method, BM25 weighting scheme is used. Secondly, a social context is used in which the method computes friendship score with friend relation in the friendship graph. At last, all of the calculated friendship scores are combined and then recommend friends from ranking of the scoring values. The physical contexts define the spiritual friendship and social friendship is computed by social contexts. The length of edges between nodes of graph that is distance between friends in the friendship graph is used for computing social friendship score. The main merit of this method is finding friends to satisfy user's present context. However physical and social context is not clearly defined and how the information is extracted. The personalized recommendation system with friends-of-friends method to recommend new friends to users is provided by different social network sites. The drawback is that it is more probable a person will know a friend of their friends rather than a random person. However, this approach does not consider social interactions of the user.

Hao [5] proposed a system which recommends friends who have the similar interests. Instead of utilizing the data from social networks, such as interests, the idea of real-time location information and dwell time is being used in the proposed approach. These two methods are compared and results are provided which will give quality friend recommendation. The method uses both context and content based recommendation techniques. Firstly the dwell time at certain location positioned using GPS is gathered and is used for constructing Voronoi diagram .Also data of users interest is collected from social networking sites. Voronoi diagram is constructed using the existing landmark and user's dwell time at certain landmark. After that analysis of data is done using Voronoi diagram and interest similarity Affinity matrix and graph is constructed. The server finds for similar users in a location based on location similarity and interest similarity. Depending on the similarity an acceptable degree is determined. If the value is greater than the threshold, recommend that user as friend. The merit of this method is that it uses the concept of real time location and dwell time. However it has drawback that it failed to track activity of user in a location.

Silva [6] proposed a friend recommendation system for social network based on the topology of the network graphs. The existing topology of network that connects a user to his friends is evaluated and a new local social network called Oro-Aro is formed. For further evaluation it is used in the experiments. An algorithm is used that analyses the sub-graph formed by a user and all the others connected users separately by three scale of division However, only users separated by two scale of division are candidates to be advised as a friend. The algorithm uses various patterns examined by their connections to search those users who have similar activities as of the root user. Based on the characterization the recommendation mechanism was developed. It also analyses the network formed by the user's friends and friends-of friends (FOF).

Nagamalai [7] proposed a trust based friend recommendation system. It extracts fundamental and behavioural attributes from the user profile. Users having similar interests are being computed. For improving effectiveness of recommendation real valued genetic algorithm is used which evaluate user preferences based on individual features in an efficient manner. Hence an enhanced neighborhood set based on the trust propagation is generated. The collaborative filtering algorithm is used for recommendation. The weights are applied to each of the attributes of users and similarities between them are found. On the basis of user preference the weights are applied.

To create different weights genetic algorithms are used. The optimization of better recommendation is done. It is checked by the Fitness value whether the goal is obtained or not. It will look out also the sparsity issue using trust. There will be challenging task of designing a collaborative filtering system which will assure accurate recommendation with sparse user profile. If the user profile is new, and the system failed to capture the user's preference because of lack of ratings, system will come to know about the preference of the user by how repeatedly he uses the system. Hence trust values are used to improve neighborhood set in order to provide accurate recommendation with sparse data. The system has many advantages. One is that weights are calculated by real value which improves performance.

Chin et al [9] proposed a friend recommendation based on physical context. The physical context is based on meetings and encounters here. The method uses the perception that users who meet in conference can be recommended as friends. It will help the conference attendees to better conduct their schedule and enlarge their social network. It develops a friend recommendation system which uses proximity and homophily. Proximity defines physical context based on meetings and encounters. Homophily defines common contents, co-authored papers, giving comments on same blog, mutual friends etc. The communication between the users was captured by an application Find & Connect. It uses both location and encounters data, together with the conference basic services in order to capture the user interactions. The weights are assigned for each attribute using proximity and homophily. Then the relevance vector is estimated for each user and also recommendation score is being computed for each user. Then top N users with the highest score will be recommended. The advantage is that this recommendation mechanism based on physical context is better than FOF approach. And also it provides a motivation why one should a person as his friend ie they know each other before and have encountered before. The main drawback is that it supports only indoor activity.

Gou [10] proposed a novel system SFviz used to support users to explore and find friends interactively under the context of interest. This approach describes both semantic structure of activity data and topological structures in social networks. In this system a hierarchical structure of social tags is generated. It will support users to navigate through a network of interest. To support users in finding potential friends multi-scale and cross-scale aggregations of similarity among users are presented in the hierarchy. The advantage of this system is that it finds friends interactively under the context of similar interest. Also it has limitation that it has restrictive category assignment of users and it is restricted only to tag information. After discussion of literature review of various existing techniques the analysis is done by doing comparison between some of above discussed techniques. The comparison parameters are basis of similarity found in different techniques, remarks and their strengths and weaknesses.

3. PROPOSED SYSTEM

The proposed design will be present Friend Seeker, a brand new recommendation system for social networks that suggests friends to users supported by their life designs rather than social graphs. Friend Seeker discovers life kinds of users from user-centric detector knowledge, personal interest and measures the connection of life designs between users, and suggests friends to users if their life designs have high match. The planned style can develop a general friend recommendation system by mistreatment Latent Dirichlet Allocation (LDA) algorithmic rule and friends counsel are given to the user. Then propose a similarity metric to see the similarity of life designs between users, and calculate users' impact in terms of life designs with a friend-matching graph. Upon receiving a call for participation, Friend Seeker returns a listing of individuals with most recommendation scores to the question user. Finally the planned styles can implement on the An-droid-based System or Smartphone's. The results can show that the recommendations accurately return the preferences of users in selecting friends. They have a tendency to take the bottom design from the paper because the System design is shown in following figure for the planned.

A deserves of planned System
☐ Friend book is that the 1st friend recommendation system exploiting a user's life vogue info discovered from good phone sensors.
☐ The daily lives of users as life documents and use the probabilistic topic model to extract life vogue info of users.
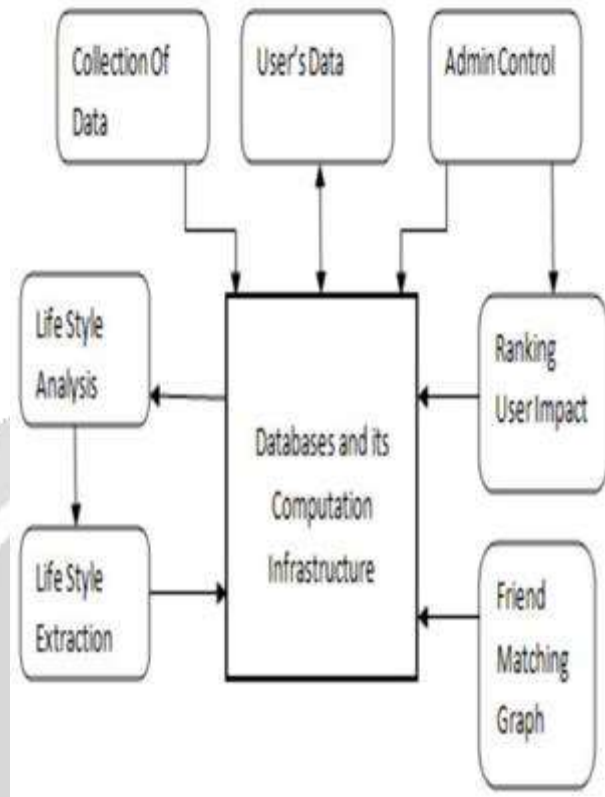☐An integrate a linear feedback mechanism that exploits the user's feedback to boost recommendation accuracy.

Fig -1: System design of Friends Recommendation

The life styles and activities are reflections of daily lives at two different levels where daily lives can be treated as a mixture of life styles and life styles as a mixture of activities. This is analogous to the treatment of documents as ensemble of topics and topics as ensemble of words. By taking advantage of recent developments in the field of text mining, model the Daily lives of users as life documents, the life styles as topics, and the activities as words. Given "documents", the probabilistic topic model could discover the probabilities of underlying "topics". Therefore, an adopt the probabilistic topic model to discover the probabilities of hidden "life styles" from the "life documents". In probabilistic topic models, the frequency of vocabulary is particularly important, as different frequency of words denotes their information entropy variances.
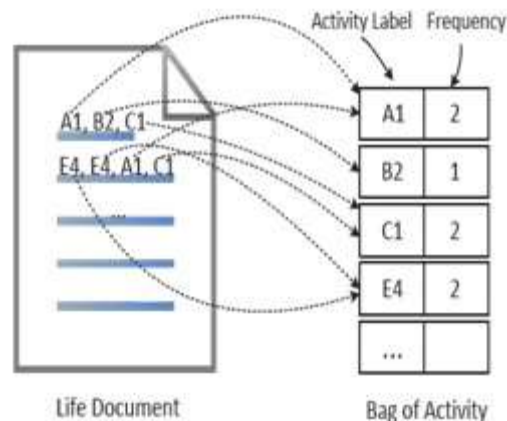

Fig -2: Bag of activity modeling.

4. CONCLUSIONS

The concept of friend service recommendation service presented and a comprehensive survey of the common friend recommendation services of social networks. 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.

5. ACKNOWLEDGEMENT

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