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CONNECTED FRIEND OVERLAPPING GROUPS BASED ON SOCIAL NETWORK CONTEXT

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ABSTRACT: Many users is connected Social network sites (SNSs) to creating the social revolution with same mentality User's social behavior to connect with diffrent Social networks is constituted Because of its user group's common interest in some social emerging models. The import social networking sites are Facebook, Twitter, LinkedIn, whatsapp, Google plus. These trajectories uses only connect locations in the physical world and also bridge the gap between people and locations. Social network context is used to real-world is often correlated within a specific context. The correlation is powerful resource to effectively increase the ground truth available for annotation. We present analysis results of a commercial MSN for quantified the correlation many users friendship with their mobility characteristics social graph properties, and user profiles. This Location sharing related contents is geo-tagged photos and notes. LBSN sites include foursquare, brightkite, GyPSii, Citysense. Detecting overlapping communities is very important to understand and analyze the structure of social network. Recommendations help to suggest the opinions to the friends and family members. Friends have a good relationship many themselves. Hence, they try to recommend the things that can be useful to the persons closest or nearer to them. This paper reviews the overlapping community's structure, algorithms for overlapping community detection and recommendation based on location and friend.

Index Terms: Overlapping Communities, Friend Recommendation, Location Recommendation. Social networks, context, event annotation, images, content management, multimedia, Social Networking Sites.

1. INTRODUCTION

Social networks is experienced dynamic growth. Social websites such as Twitter, YouTube and Flickr is billions of users who share opinions, photos and videos every day. Users make on-line friends through these social networks [1]. One challenging model to help these users to efficiently find new social friends. Social friend recommendation is offered a new research several schemas is proposed to conduct recommendation efficiently [2]. Exploitation of social network data is security of the crowd of users on social network into number of proprietary and closed social networks. We proposed new framework similar to Facebook where the friend is recommended using online models as well as his personal interest number of peoples with a secured sharing [3]. In the location-location graph a node is a location and a directed edge between two locations stands for that a least

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some users have consecutively traversed these two locations in a trip[4]. We can infer the user graph where a node is a user and an edge every two nodes represents that the two users have visited the same location in the real world [5].

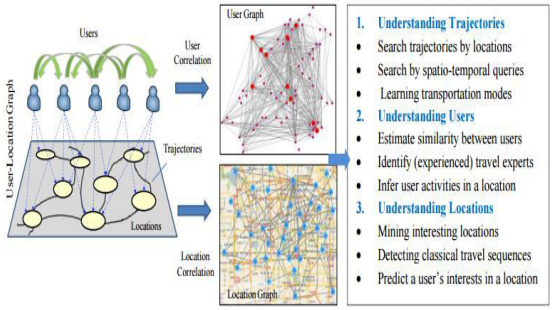

Figure 1. The philosophy and research points of GeoLife

A recommendation is designed to recommend data to many situations such as online shopping, dating, and social events. Recommendation to decision making by filtering the uninterested things [6]. By recommendation, Furthermore recommendations could also benefit virtual marketing, since the appropriate recommendations could attract users with specific interests. Recommender systems on location based social networks are comparatively new and mainly locations and friends are recommended [7].

2. RELATED WORK

The research works based on social networks is discussed. Scellato [8], presented a graph analysis based model to study social networks with geographic data and new metrics to characterize geographics distance affects social structure. Noulas. [9] a users behavior in foursquare. This users behavior helps to know the users check-in nature. Also the author reveals patio-temporal patterns and urban spaces demonstration. We leverage the attribute divergences many friend pairs and non-friend pairs to the classification model. A few Web sites addressing the friends suggestion problem [10]. The Tweetsum Mr. Tweet,6 and Twitseeker7 focus on recommending friends for micro-blogging service Twitter. Twitter itself also provides user suggestions. Most of these tools suggest friends by analyzing the users update content popularity though no details of their analysis algorithms. Our study focuses on modeling friendship over location-based MSNs and the model is used to recommend people a user is more likely to meet in person. In the ESP game [11], the authors develop an ingenious online game in which people play against each other to label the image authors take into account browsing history with respect to an image search for determining the sense associated with the image. The context in which the annotation is used labeled is not taken into account the authors explore a collaborative annotation system for mobile devices. In [12], the authors provide label suggestions for identities based on patterns of re-occurrence and co-occurrence of different people in different locations and events is not make use of user-context or commonsensical and linguistic relationships and group semantics.

3. GENERIC TRAVEL RECOMMENDATION

A Tree-Based Hierarchical Graph (TBHG) models is number of users travel sequences on a variety of geospatial scales. 1) Detect stay points: We detect from every GPS trajectory some stay points where a user has stayed in a

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certain distance threshold over a time period. 2) Formulate a tree-based Hierarchy. We can stat points detected from users GPS logs into a dataset [13]. We hierarchically cluster this dataset into many geospatial regions in a divisive manner the similar stay points different users would be assigned to the same clusters many levels. 3) Build graphs on each level. We connect the clusters of the same level with directed edges stay points from one trip is separate contained in two clusters a link is generated in two clusters in a chronological direction according to the time serial of the two stay points [14].

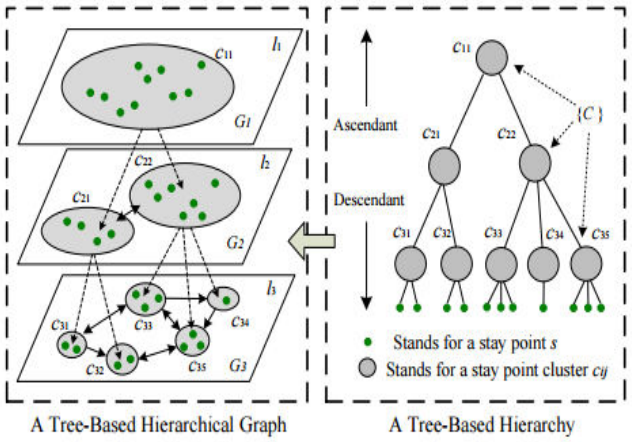

Figure 2. Building a tree-based hierarchical graph

Based on the TBHG is propose a HITS-based model to infer users' travel experiences and interest of a location within locations. This model leverages the main strength of HITS to rank locations and users with the context of a geospatial region.

PERSONALIZED FRIEND & LOCATION RECOMMENDATION

The generic recommendation model is wants to visit locations matching travel preferences Actually people outdoor movements in the real world would imply rich data about their life interests and preferences [15], People uses many location histories might share similar interests and preferences. GPS trajectories is conduct a personalized friend & location recommender many places that could interest the individual while having not been found by the individual.

4. OVERLAPPING COMMUNITY DETECTION ALGORITHMS

Overlapping community detection algorithms work on community overlapping was started by Palla in 2005[10]. After this work many algorithms is found for the overlapping community detection [16]. These classes namely Clique Percolation algorithms, Agent and Dynamic based algorithms, Fuzzy based algorithms, Local expansion and Optimization algorithms and Line graph and Link partitioning algorithms

A. Clique Percolation Method

Clique Percolation Method (CPM) is local topological properties of a network [17]. It is a first attempt over an overlapping community. CPM is total cliques of size k in a network at the stating stage. If the k-cliques representing the vertex shares k-1 members then only two nodes is connect to each other There is an assumption in CPM that the graph is number of cliques and it is suitable only for networks which considers densely connected segments. The graph involves a few cliques is not possible for CPM to detect meaningful social structure. CPM is conceptually simple, but CPM-like algorithms to finding overlapping

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communities as they aim to find specific and restricted/limited structure in a network.

B. Fuzzy Detection Algorithm

Fuzzy community detection algorithms is solve strength of association every pairs of nodes and communities. These types of algorithms finding a soft membership vector, factor for every node This is the drawback of such algorithms the value is determined from the data and provided as a parameter to the algorithm. These algorithms include proposing approach for combining spectral mapping, fuzzy clustering and optimization of a quality function [12], access every vertex of the graph is multiple communities at the same time[18], disjoint community detection.

C. Agent and Dynamic based algorithms

Label Propagation Algorithm (LPA) is an event and dynamic based algorithm proposed by Raghavan et al in 2007. LPA finds communities every a large networks and runs linearly in the number of edges. The vertex replaced the label which is used by same maximum number of neighbors and updates its own label [19]. This method is repeated. LPA uses only the network model to guide itself it does not require modify details and prior information communities in a network. The drawback of LPA is, it can detect only disjoint communities [20]. CONGA is an extension to the Girvan and Newman's algorithm.

D. User's Online Behavior

The user's considered social connection. In Facebook, a user is create a personal profile, add other Facebook friends, and join any community and number of friends.[21]. Determining user's online behavior change work nowadays as the behavior fluctuates very often. User behavior is very important for this model is friend recommendation system. We have defined what user's online behavior is formally

E. Behavior Definition

Let's consider three set: users (US), activities (AC) and

Related activities (RA).

US = {u | users in SNS} = {u1, u2, u3, …… , un}

AC= {a | activities of the users in SNS} = {a1, a2, a3, …,am}

RA = {r | a subset of activities that any user may follow in a session or time duration in SNS}

RA = P (A) (1)

RA ={{a1},{a2},{a3},…,{an},{a1,a2},{a1,a3},…, {a1, a2, a3,…, an}}

The behavior of the user is completely related to the activities of the users. Users is different models [22]. The activities which are performed by the user in a particular time duration denoted as RA.

5. EXPRESEMENT RESULT

To finding the proposed friendship model is collected the changes of users friend lists for 45 days and found 5,098 new friend pairs. We also randomly selected another 100,000 non-friend pairs which have no overlap with the 100,000 non friend pairs used for model training. The

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two groups of user pairs were test sets for model evaluation the ranking values' distributions of the two test set there are 78.42% friend pairs whose ranking value is larger than 2.5, by adding all the bars with x > 2.5, while there are 90.16% non-friend pairs whose ranking value is smaller than 2.5 to indicate the common ranking values with the large numbers 66.86, 100, and 100 in Equations 10, 17, and 20, respectively.

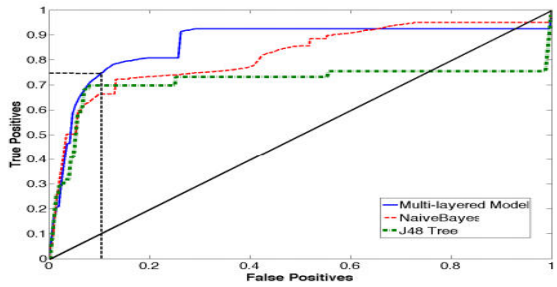

Fig. 11. ROC curves of the friendship ranking.

6. CONCLUSIONS

We take reviewed is overlapping community detection algorithms based many categories. Overlapping communities provides the structure of real world social networks and understand the relationship structure every nodes it is essential to identify an overlapping communities in a LBSNs. Recommendations plays an important role by giving suggestions to the users. This reduces time to seek new things at a location beside to user. Recommendations are assist users to make new friends. We found that the multilayered model provided better performance which is practical and valuable for a friend recommendation application. Our recommendation algorithms incorporated activation spreading to given an event facet as a query. The key observation in this paper was that people with in social networks often have correlated activities within a specific context.

7. FUTURE WORK

Our future work is focus on implementing a friend recommendation model is based on the proposed multi-layered model. Using the real system to receive feedback from the users directly about the accuracy of this model is combining other user attributes such as those based on update information. In further improve the modeling performance recommendations based on overlapping communities profiling can also be possible.

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