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Identification of Identical Users among Multiple Social Media Networks

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Abstract: Online social networks (OSNs) have experienced tremendous growth in recent years and become a de facto portal for hundreds of millions of Internet users. These OSNs offer attractive means for digital social interactions and information sharing, but also raise a number of security and privacy issues. While OSNs allow users to restrict access to shared data, they currently do not provide any mechanism to enforce privacy concerns over data associated with multiple users. Online Social Networks (OSNs), which attract thousands of million people to use everyday, also greatly extend OSN users' social circles by friend recommendations. OSN users' existing social relationship can be characterized as 1-hop trust relationship, and further establish a multi-hop trust chain during the recommendation process. As the same as what people usually experience in the daily life, the social relationship in cyberspaces are potentially formed by OSN users' shared attributes, e.g., colleagues, family members, or classmates, which indicates the attribute-based recommendation process would lead to more fine grained social relationships between strangers. The import social networking sites are Facebook, Twitter, LinkedIn, WhatsApp, Google plus. Social networks are constituted Because of its user group's common interest in some social emerging issues. The popular social Networking sites are Facebook, Twitter, LinkedIn, whatsapp, Google plus etc. which are actually online social networking sites. And mainly the large amount of online users and their special interests possess great challenges to support recommendation of friends on social networks for each of the users. However, with the popularity of public cloud services, the main concern of confidentiality is recognized as the problem even for personal individual users The proposed Friend Recommendation framework shows good accuracy for social graphs used as model dataset.

Keywords: Social Network Alignment, Friend Recommendation, Social Networking Sites (Sns's), Cloud Computing.

I. INTRODUCTION

Can users have reasonable expectations of privacy in online social networks (OSNs)? Media reports, regulators, and researchers have replied to this question affirmatively. Even in the transparentǁ world created by Facebook, LinkedIn, and Twitter, users have legitimate privacy expectations that could be violated. Researchers from different computer science disciplines have tackled some of the problems that arise in OSNs and propose a diverse range of privacy solutions, including software tools and design principles. Each of these solutions is developed with a specific type of user, use, and privacy problem in mind. This has had some positive effects: we now have a broad spectrum of approaches to tackle OSNs' complex privacy problems. At the same time, it has led to a fragmented landscape of solutions that address seemingly unrelated problems. Consequently, the field's vastness and diversity remain mostly inaccessible to outsiders and, at times, even to computer science researchers who specialize in a specific privacy problem. One of our objectives is to put these research approaches to OSN privacy into perspective. Social networks is experienced dynamic growth. Social websites such as Twitter, YouTube and Flickr is billions of clients 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 is an area and a coordinated edge between two areas remains for that a minimum a few clients have continuously navigated these two areas in a trip [4]. We can induce the client diagram where a hub is a client and an edge each two hubs speaks to that the two clients have gone to a similar area in this present reality [5]. Since last decade Social networks have experienced dynamic growth. Social websites such as Twitter, YouTube and Flickr have billions of users who share opinions, photos and videos every day. Users make on-line friends through these social networks. One challenging issue is how to help these users to efficiently find new social friends.

Social friend recommendation has therefore become a new research topic and several methods have been proposed to conduct recommendation efficiently. As stated that "In on-line social networks, people behave differently in social situations because they carry different latent social roles". For example, a father and a child will respond differently when seeing a toy in a showcase at a shop. We believe that utilizing the individual's social role information is a new research component for recommendation tasks. In the social networking sites, a social entity or user makes connections with other known or unknown social entities, namely friends or partners, and share their news and views through the profound facilities of the sites. Friends could be offline or real-life friends, classmates, neighbors, colleagues, Family members, friends, relatives or anyone having a profile in the OSN sites. Recommending different aspects in SNS's is a new concept to make people socially active. Community recommendation, connection or friendship recommendation, birthday reminder, event recommendation, restaurant or vacation spot recommender systems are common findings in the SNS's. Recommendations of people on social networking sites is better studying because it is different from traditional recommendations of books, movies, restaurants, etc. due to the social security of "friending". For example, before adding a friend, one has to consider a lot of things, whether he or she know the person personally or his or her activities. Match with the person he or she wants to add as a friend.

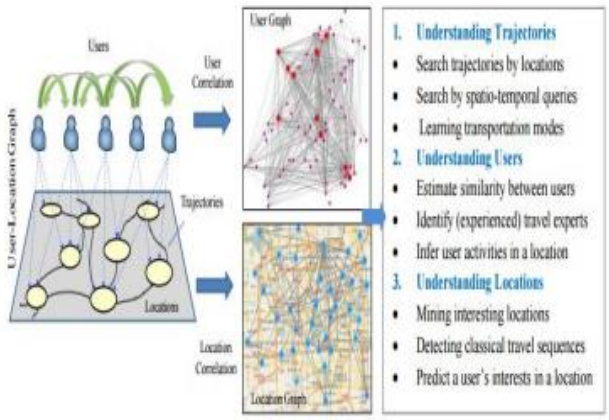

Fig -1: The philosophy and research points of GeoLife

Furthermore, the most challenging part in designing a recommendation system for a social network is the privacy issue of the users. With the ever increasing web crimes and identity theft, people are becoming more and more careful in sharing their personal information. Hence, unless a user can trust the system with their data, the system cannot stand and it will be valueless. Exploitation of social network data is the fragmentation of the crowd of users on social network into number of proprietary and closed social networks. This issue is combined by the fact that each new game or media application tends to build its own social network around it rather than building upon the rich data available about existing social relationships. In this paper, we proposed the framework similar to Facebook where the friend is recommended using online behavior as well as his personal interest among other peoples with a secured sharing.

II. LITERATURE SURVEY

The research works based on social networks is discussed. Scellato [8], presented a diagram analysis grounded model to study informal organizations with geographic information and new measurements to portray geographic separation influences social structure. Noulas. [9] a client's conduct in foursquare. This client's conduct knows the clients check-in nature. In addition, the author exposes patio-temporal outlines 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 friend's suggestion problem [10]. The Tweetsum Mr. Tweet, 6 and Twitseeker7 focus on commending friends for micro-blogging service Twitter. Twitter itself additionally gives client recommendations. Most of these tools suggest friends by scrutinizing the users update content popularity though no details of their exploration algorithms. Our study attentions 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 build up a quick internet amusement in which individuals play against each other to mark the picture creators consider perusing history regarding a picture scan for deciding the sense related with the picture. The context in which the annotation is used labeled is not reserved into account the authors explore a concerted annotation system for mobile devices. In [12], the authors provide label suggestions for identities based on designs of re-event and co-event of different individuals in assorted areas and occasions is not make utilization of client setting or commonsensical and etymological connections and gathering semantics.

Kuan et al. : Kuna proposes an algorithm to locate groups using a transitive extension based approach. This research implemented the use of a 1.5Cclique extension method to derive sub structures, or communities, within social networking sites. Results showed that this method was moderately effective in finding community of similar friends. However, this method doesn't provide insight into how these communities are created. That is, it is important to understand what similar interests cause an implementation in these communities. Recent research has studied the potential effectiveness of combining complex network theory and genetic algorithms.

Silva et al.: Silva treated the recommendation problem as a filtering problem where a genetic algorithm was used to create three indices derived from structural properties of social networks. The result from this study was acknowledged as a baseline to starting work using a new techniques. Study of few recommendation pattern used by websites: Amazon recommendations change regularly based on a so many factors. These factors include time, date and day of purchase, rate or like a new entity, as well as changes in the interests of other customers. Because your recommendations will fluctuate, Amazon suggests you add new things that interest you to your Wish List or Shopping Cart. E-Bay recommends product on bases of features of items. You Tube suggests items based on like/dislikes concept. In.com recommends the songs that are popular, songs from the same movie, similar actor-actress, artist, director etc. RS is used to filter the entity/product

according to the user interest and looking at the like-minded-users. Collaborative filtering: There are so many popular recommendation algorithms based on collaborative filtering. Collaborative Filtering generates a group of users with similar behaviour, and finds the entity suggested by this group. Rankings from user will be taken from user in two ways explicit ranking and implicit ranking. CF algorithms are divided into two types, memory-based algorithm and model based algorithm.

Memory-Based algorithm: Memory-Based algorithm simply stores all the user ranking into memory. There are two variants of memory-based recommendation and both are based on the kNearest Neighbour algorithm: user-based filtering and entity-based filtering. In User - Based Filtering, Ranking matrix is used to find neighbouring users for the active user. This is done by using cosine or user correlation matrix. After knowing the neighbouring user for active user, entity preferred by neighbouring users will be managed on frequency and ranking of entity. Entities that are not known to active user will be recommended. Entity Based Filtering finds the most similar entities. Items are known to be similar when the same set of users has brought them or rated them highly. For each item of an active user, the neighbourhood of most similar entity is identified. Collaborative filtering techniques can be expanded to other algorithms such as tag based and attribute aware and trust aware recommender systems. A diffusion based recommendation algorithm is proposed which consider the personal knowledge. A hybrid user profiling strategy is proposed that take advantage of both content based profiles describing long-term information interests that a recommender system can took a long time and interests revealed through tagging activities, with the goal of enhancing the interaction of users with a collaborative tagging system.

III. PROPOSED WORK

In this system we are using three networks for recommending online friend. First is contact network, second is Tag network and we introduce one new network which is interest network. Firstly in contact and Tag network which is based on association rule. That is if 'A' is friend of 'B' , 'B' is friend of 'C', then 'A' is to be recommended to 'C' as a friend. So, we are use one new type of recommendation network interest network. In this type of network Friends is recommended as their point of interest .Because ofthis users will help to keep us his interest as well as increase his knowledge. We can take any random user from any other sub network and recommend them as friend. So many friends or connections could be recommended to a particular user in any social network. A Tree-Based Hierarchical Graph (TBHG) models is number of users travel classifications on a diversity of geospatial scales. 1) Detect stay points: We detect from every GPS trajectory some stay points where a user has stayed in a 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 disruptive manner the similar stay points different clients would be allocated 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]. Personalized Friend & Location Recommendation: The generic commendation 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 proclivities [15], People uses many location histories might share similar interests and inclinations. GPS trajectories is conduct a tailored friend & location recommender many places that could interest the individual while having not been found by the individual.

IV. COMMUNITY DETECTION ALGORITHMS

Palla started overlying community detection algorithms work on community overlapping in 2005[10]. After this work, many algorithms are found for the overlying community detection [16]. These classes in particular Clique Percolation calculations, Specialist Agent and Dynamic based figuring's, Fuzzy based calculations, Local extension and Optimization calculations and Line chart and Link parceling calculations. 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. On the off chance that the kcliques circles speaking to the vertex offers k-1 individuals then just two hubs is interface with each other There is a supposition in CPM that the diagram is number of factions and it is reasonable just for systems which considers thickly associated fragments. The diagram includes a couple of factions is impractical for CPM to detect meaningful social structure. CPM is theoretically simple, but CPM-like algorithms to finding overlying communities as they aim to find specific and restricted/limited structure in a network. Finally, complete content and organizational editing before formatting. Please take note of the following items when proofreading spelling and grammar: Fuzzy community detection algorithms is solve strength of association every pairs of nodes and communities.

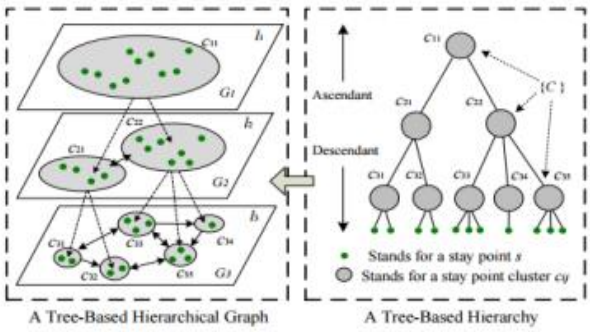

Fig -2: Building a tree-based hierarchical graph

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 suggesting approach for merging spectral mapping,

fuzzy clustering and optimization of a quality function [12], access every vertex of the graph is manifold communities at the same time [18], disjoint community detection. The users considered social connection. In Facebook, a user is creating a individual 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 users online behavior is formally.

V. METHODOLOGY

Sub Network Extraction SNS's are very large entity and has large-scale databases. Day by day the size of the network is increasing and as the people are joining, there is huge number of information overload happens on these sites. For experiment of our proposed system, we can take the whole network of random individuals. After having the whole network of a client for who are going to suggest friends, we extract the sub network of 'n' no of people from the expected graph. Finding Active Friends In this system we introduce new features like there interest in which subject or field. Different people have their different types of interest. We can improve the knowledge and hobbies so when user creates an account he/she could submit his/her interest. Once account has been created whenever user logged in people of similar interests are recommended as friends Common Behavior Common behavior means the common activities of the users. This common behavior is not fixed or pre-defined. For different data set the common behavior will be different. Common behavior will not be only one activity. Two or more activity can make a common behavior. In our methodology the common behavior is the max frequency of the any activity in the dataset. Formally, we can define common behavior as like, B1 and B2 has a common behavior of u1 and u2, if and only if activities r1 & r2 have some common activities. 4.4. Uncommon Behavior Uncommon behaviors are the uncommon activities of the user apart from the common behavior. Any activity of a user will be considered as uncommon behaviors that are not in the common behavior. For different data set the uncommon behavior will be different. Uncommon behaviors could be one activity or more than one activity.

VI. CONCLUSION

In this paper, we have proposed an interested friend or connection recommendation framework which could be used in any social networking web-sites. The framework is subject to user's online beh In this section we conduct extensive experiments to show the effectiveness of our proposed method, as well as to illustrate a number of interesting properties. We provide a case study on the Flickr dataset which we have crawled ourselves. First we give a brief introduction of our social media dataset, and then we discuss our algorithm from different aspects.avior. We have add the user's online behavior definition also an approach to use the online behavior to recommend friends. The applications of this framework are large and this approach could be used to recommend the friend, community or groups, online games with the user's behavior or interest and many more. The FP Growth algorithm could be refitted to identify a new recommendation system having better accuracy.

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