

Personalized Influential Topic Search via Social Network Summarization

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Abstract: *In this paper we Social networks are a vital mechanism to disseminate information to friends and colleagues. In this work, we investigate an important problem - the personalized influential topic search, or PIT-Search in a social network: Given a keyword query q issued by a user in a social network, a PIT-Search is to find the top- k q -related topics that are most influential for the query user u . The influence of a topic to a query user depends on the social connection between the query user and the social users containing the topic in the social network. To measure the topics' influence at the similar granularity scale, we need to extract the social summarization of the social network regarding topics. Two approaches like random clustering and a L length random walk, to make effective topic-aware social summarization. Based on the proposed approaches, we can find a small set of representative users with assigned influential scores to simulate the influence of the large number of topic users in the social network with regards to the topic. Social summarization of topic-aware influence spread over the social network over the selected representative users. And then, we verify the usefulness of the social summarization by applying it to the problem of personalized influential topic search. Finally, we evaluate the performance of our algorithms using real-world datasets, and show the approach is efficient and effective in practice.*

Keywords: Social network, personalized topic search, social summarization, Social media activities

1. Introduction

The importance of social networks such as Twitter, Facebook and WeChat in providing a convenient platform for users to share information continues to grow. The dynamic nature of information and user connectivity within these networks has presented many interesting open research problems in recent years, such as the influence maximization problem and the topic detection problem. However, a user issuing a keyword query can easily be overwhelmed by the number of query-related topics. This is because a large social network may contain millions of social users sharing comments on various events or topics, and these comments lead to new topics. In this context, identifying a small set of topics that are relevant to the query is a challenging problem. The most widely-accepted method is to select the relevant topics based on the term relevance between topics and the query in a manner similar to a typical keyword search. An alternative approach is to recommend the latest query-related topics for a query, but this may not be suitable in practical applications since it does not consider older topics or discussions.

1.1 Objective

The scope of project is influence of a topic to a query user depends on the social connection between the query user and the social users containing the topic in the social network. To measure the topics' influence at the similar granularity scale, we need to extract the social summarization of the social network regarding topics. We can find a small set of representative users with assigned influential scores to simulate the influence of the large number of topic users in the social network with regards to the topic. The selected representative users are denoted as the social summarization of topic-aware influence spread over the social network.

2. Literature Survey

Title : Online Influence Maximization

Author : Silviu Maniu

Description: Social networks are commonly used for marketing purposes. For example, free samples of a product can be given to a few influential social network users (or seed nodes), with the hope that they will convince their friends to buy it. One way to formalize this objective is through the problem of influence maximization (or IM), whose goal is to find the best seed nodes to activate under a fixed budget, so that the number of people who get influenced in the end is maximized. Solutions to IM rely on the influence probability that a user influences another one.

Title: A Unified Model for Stable and Temporal Topic Detection from Social Media Data

Author: Hangzhou Yin Bin CuiHua Lu

Description: Web 2.0 users generate and spread huge amounts of messages in online social media. Such user-generated contents are mixture of temporal topics (e.g., breaking events) and stable topics (e.g., user interests). Due to their different natures, it is important and useful to distinguish temporal topics from stable topics in social media. However, such discrimination is very challenging because the user-generated texts in social media are very short in length and thus lack useful linguistic features for precise analysis using traditional approaches. In this paper, we propose a novel solution to detect both stable and temporal topics simultaneously from social media data. Specifically, a unified user-temporal mixture model is proposed to distinguish temporal topics from stable topics.

3. Existing System

They are all based on the non-shareable Services. In existing works, scheduling of shareable services with interval based pricing models is rarely focused. Some works consider the VM instances as Shareable services and they are charged in intervals. They assume that one task can only be performed by one service instance. Research related to the workflow scheduling with deadline in Clouds to minimize the total cost for renting shareable and non-shareable services (VM instances, platforms, or software units).

3.1 Existing Technique PCP and DET

Algorithms PCP and DET are developed for the task mode mapping problem, in which partial or single critical paths based methods are adopted. The service selection of unscheduled tasks before and after the scheduled task on a complete critical path influences each other. They should be considered together to get a better combination of services rather than partially considered.

4. Proposed System

Proposed system can effectively quantify user differences in online social activities. For each behavioral feature, observed from each user's click streams. To validate the effectiveness of social behavioral profile in detecting account activity anomaly, Sybil account detection by analyzing click streams. They differentiated Sybil and common users' clicks based on inter arrival time and click sequence for fake identities owned by attackers, their click stream patterns significantly differ from those of normal users.

4.1 Problem Definition

Social networks such as Twitter, Facebook and WeChat in providing a convenient platform for users to share information continue to grow. The dynamic nature of information and user connectivity within these networks has presented many interesting open research problems in recent years, such as the influence maximization problem and the topic detection problem. However, a user issuing a keyword query can easily be overwhelmed by the number of query related topics. This is because a large social network may contain millions of social users sharing comments on various events or topics, and these comments lead to new topics. To address this problem, we would like to select a set of representative users that adequately summarize a given topic, where the representative users are evaluated based on their closeness to the users (topic users) whose posted messages contain the topic terms. In this case, if the query user is likely to be reached or influenced by the selected representative users, then the query user has a high probability of following or trusting the topics recommended by the selected representative users.

4.2 Methodologies

PIT-Search algorithm

The personalized influence maximization defined as follows: Given a target user, find a small subset of nodes which can

maximize the influence spread to the given target user in a social network. However, all the above work can neither be applied to select representative users from a social network with regards to a topic, nor to PIT-search problem.

4.3 Modules

4.3.1 ADMIN

4.3.1.1 Authentication

The user has to give exact username and password which was provided at the time of registration, if login success means it will take up to main page else it will remain in the login page itself.

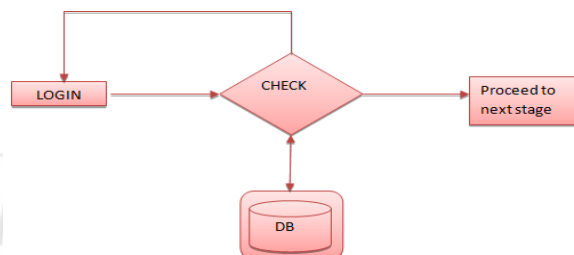


Figure 1: Authentication for Admin Module

4.3.1.2 View User Details

In this schema admin selects the user details and views the files uploaded by user by different ID.



Figure 2: View User Details for Admin Module

4.3.1.3 Generate key

In this schema admin generates the decryption key to user based on user type.



Figure 3: Generate key for Admin Module

4.3.2 USER

4.3.2.1 Authentication

In this module if user has registered already then the user can login to proceed with given id and registered email id, if user does not registered then the user has to register as new user register to get an id

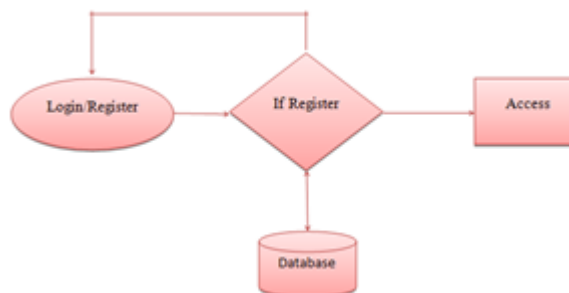


Figure 4: Authentication for User Module

4.3.2.2 File uploading

In this module user should login with id and uploading a file while uploading user should give id to save all data's in given user ID, then the user can upload file to encrypt

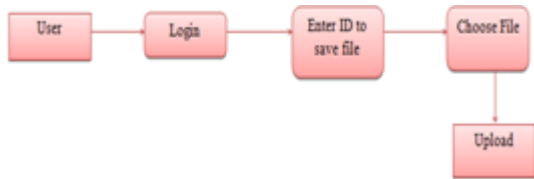


Figure 5: User uploading a file

4.3.2.3 Select File to Encrypt

User should login with correct email id and password then the user has to enter id while the user given for file uploading once user entered id, it then shows all files from that ID, then user select which file to encrypt.

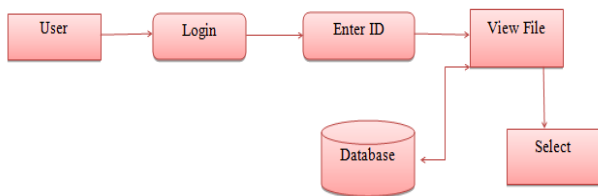


Figure 6: Selecting file to encrypt

4.3.2.4 Encrypting Data

Once user selected which file to encrypt, it shows that particular file with file extension .so that use encrypt that particular file and save in folder by using database.

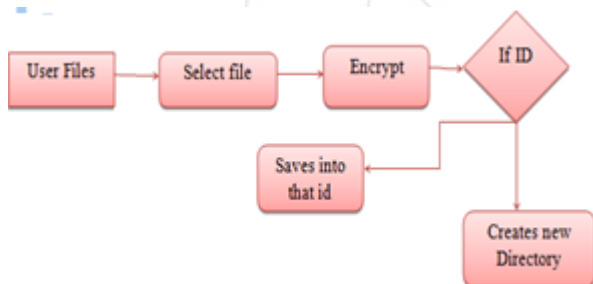


Figure 7: Encrypting data into the file

4.3.2.5 Get Key:

Once file encrypted by user admin will generate a two key based on user type so that user can get key based on user type.

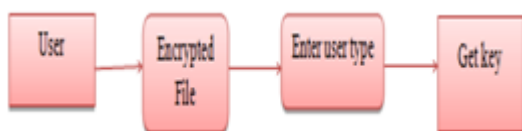


Figure 8: Generating a key

4.3.2.6 Download Login

User should login with user id and select a type of user so that it will display all the files in that user type.

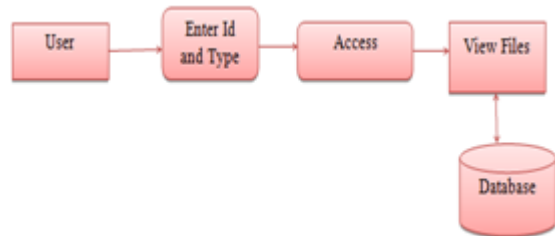


Figure 9: Downloading a file

4.3.2.7 Enter Key and Decrypt File:

When user wants to download file after login user should enter key to decrypt file to view in readable format.

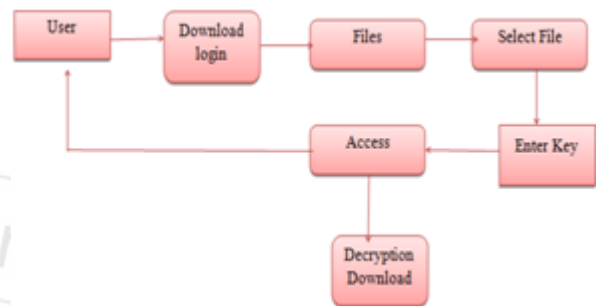


Figure 10: Entering key and Decrypt file.

4.3.2.8 System Architecture

The users or nodes involved in our projects are Sender, Intermediate and Receiver. In order to send file, the sender has to find out the list of nodes which are connected with the sender. From that available list he can choose receiver. Then the sender has to analyze the performance of each and every node which is connected with the sender. The performance analysis list will return the priority based result so that sender can choose the intermediate to send the file. The Intermediate will receive the file from sender then it will analyze the performance so that it can send data to another intermediate or receiver. In the receiver side, the receiver has to select the file path to receive the file from sender or intermediate. Then the receiver can view the file received file.

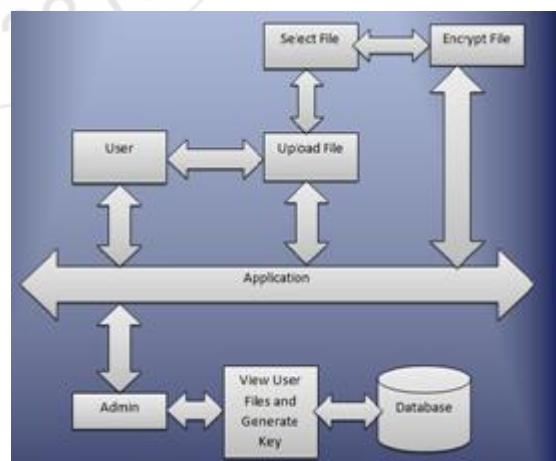


Figure 11: System Architecture

5. Conclusion

Personalized influential topic search in social networks is an increasingly important problem. In this paper, we proposed

the problem of personalized influential topic search (PIT Search) in social networks. To make the PIT-Search more effective and efficient, we then developed two approximation approaches capable of selecting representative users as a social summarization for a given topic.

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