

Tracking of Eyewitnesses using Various Geo-Location Services

Prof. Ganesh Gourshete¹ Sushrut Kamath² Vishakh Narkar³ Siddhant Sankhe⁴

^{1,2,3,4}Department of Information technology

^{1,2,3,4}Atharva College of Engineering, Mumbai University, Maharashtra 400095, India

Abstract— Geo-tagging is a process in which a device data can be found using the geo-location of that device. Geo-tagging is the process of embedding the meta-data and some geographical information to video or photograph, such video or photographs provide us the location based information related to our subject. Geo-tag consists of meta data which includes the information of latitude, longitude co-ordinates; they can also include altitude and place names in it which helps in device tracking. This meta data is responsible for giving the location of any particular devices. It can help users gain data about particular location. Location specific information can be extracted from the device.

These features are being used by Location based services to provide better services to the user. Location based services can be query based and can provide end user with useful information. Location based services are being provided by social media application like Instagram and Twitter. In this project, by using these features provided by Instagram and Twitter, we come out with the technique of locating eyewitnesses on particular subject which is provided by the legitimate user of the application. By employing the technique of locating the eyewitnesses by the description of the particular event and geological directions, the proposed application is able to locate the people of interest.

Key words: Geo-Location, Geo-Tags, API, Location Based Social Networks(LBSNs)

I. INTRODUCTION

With the surge of ever growing technology it became easy to tackle various problems and find solutions to the same. In this project, we focus on building a web application which will be developed using the grounds of geo-location technology. There have been cases in which an event/incident occurs and there are hundreds of people who witness that event/incident. There are circumstances in which unexpected situations or emergencies take place and people are well aware about the incident. But an individual steps back when being asked about the same due to reasons threatening their security. Due to this reason the investigation for the incident or crime scene remains unclear. But, with the growing trend of involvement of an individual into social media activities, it has been realized that the person reporting the event on social media instead of being the physical evidence is high. People report their presence and negative acceptance to such situations through social media alternatives like Instagram, twitter, etc. without realizing that they are sharing their location which can be used for positive outcomes to complete the investigation. Also during emergencies like natural calamities, a group of people/children who are misplaced can be tracked if the pictures of these individuals with their location are shared. Thus geo-location technologies can be used for a number of purposes and used to tackle various problems

II. REVIEW OF LITERATURE

A. Using Large Scale Aggregated Knowledge for Social Media Location Discovery

- This work was presented in 2014 by Dennis Thom, Harald Bosch, Robert Kruger, Thomas Ertl with algorithms and methods to use geo-location facilities provided by various social media's to generate vital insights in areas where awareness is important, such as in case of any disaster or crisis in that particular location. Fraction of the data is actually provided by the meta-data in geo-tags or even in GPS information of their origin.
- In this work two strategies were introduced that are suitable to derive probable locations of site to social media messages of various locations. They are based on accumulated knowledge about the user and/or the textual content of the message. Using the prototype implementation and a collected data set comprising more than one year of geo-located data.
- Method used were: Term density maps, User history based estimation, Evaluation[1]

B. Discovering and Profiling Overlapping Communities In Location Based Social

- This work was carried out by Zhu Wang, Daqing Zhang, Xinghe Zhou, Dingqi Yang, Zhiyong Yu and Zhiwen Yu in 2014, with recent surge of location based social media application the location based data can be utilized.
- The location based service networks have huge amount of digital footprint locations, profiles, and online social connections become accessible to service providers.
- This paper check-in traces at venues and user/venue attributes; we come out with a novel multimode multi-attribute edge-centric co-clustering framework to discover the overlapping and hierarchical communities of LBSNs users.
- Method used: User venue check-in network, Multi-mode, Multi-attribute edge clustering framework, Feature description, Feature Normalization and Fusion, Clustering algorithm, Performance Evaluation[2]

C. Mining Frequent Trajectory Patterns and point of interest from Flickr photos

- There is a massive opportunity to mine human movement data from geo-tagged photos.
- A significant opportunity exists to demonstrate the application of pattern mining algorithm using geo-tagged photo dataset.
- Flickr API is used to collect geo-tagged photos in the framework consisting of three main components: pre-processing, TPM and Visualization.
- Geo-tagging is a technology that includes a geographic reference inside the meta-data of specific types of content: photos, videos, and SMS.
- Method Used: Clustering, Tag mining, Sequential TPM[5]

III. PROPOSED SYSTEM

This system will consist of a web based programmed application which will support the various objectives mentioned above. In this application, a search protocol will be initiated after which the sequential steps will be carried out. These sequential steps will consists of aquerying a query which will comprises of location of place in form of latitude and longitude. The application will have advanced option to get more precise results by providing options to input time-period and the radius of the location of that particular area for which the results are to be obtained. Once the query is submitted with all the required fields, the search protocol will give the desired results for that particular query. The results will provide all the details of the user present at that specific location with the specifications mentioned in the query.

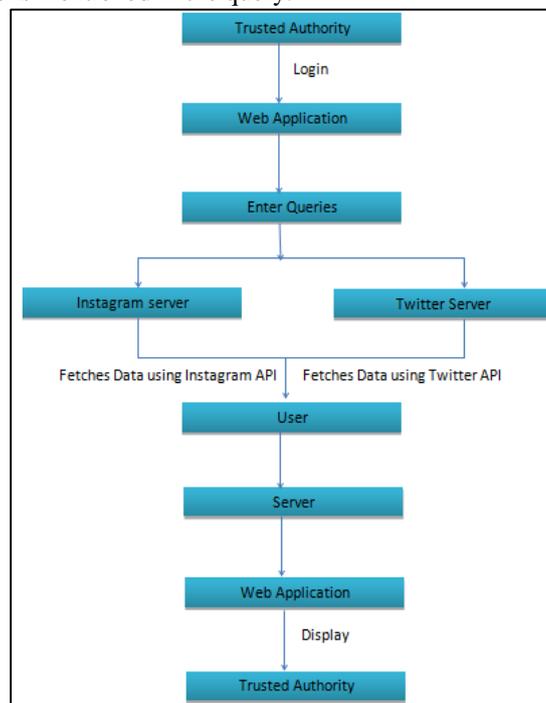


Fig. 1: Block Diagram of Proposed System

IV. METHODOLOGY

In order to be able to use our web application, we will be using the following approach:

- Step 1: In this phase the user will enter the web application through a particular domain.
- Step 2: After entering the domain URL the authority will be redirected to the web application page.
- Step 3: On the web application page, the authority will have to login to ensure that the authority is a trusted one.
- Step 4: After successful login, the authority will have to enter proper credentials in the required fields to proceed to the execution phase.
- Step 5: If the credentials are correct, the web application will request the server for the required data.
- Step 6: This data will be fetched by using the API's integrated in the web application by verifying the metadata with the credentials from the web application with servers of different API's.
- Step 7: After proper verification, results will be displayed.
- Step 8: If the credentials are wrong, continue from step 5.

V. OVERVIEW OF SYSTEM

This system aims to develop a web application that provides database about important events by using geo-location technologies through various application programming interface.

The various objectives of this web application are:

- Providing immediate access to officials for easy collection of data.
- Investigating geo-tags can be used for good to explore how journalists or authorities might locate potential by-stander to important events such as a crime or accident scene using social media.
- Geo-tagging can also be used to locate trapped people during natural calamities.
- It can also be used for getting information about any particular place at a desired time frame.
- This web application can be used by various law enforcement departments. The access will be strictly through secure ID and Passwords.
- It can also be used during disasters and natural calamities.
- It can be used for collection of meaningful data and for comprehensive analysis.

VI. CONCLUSION

Thus we propose to make the use of available location based services through some social media applications by implementing their source code like application programming interfaces (API's) and give a practical solution to resolve daily issues.

By applying various security measures (credentials like password and user id) the access to application will be provided to legitimate users only

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