A REAL -TIME EVENT DETECTION AND NOTIFICATION USING SOCIAL MEDIA

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ABSTRACT:

Social media is getting progressively imperative today. Owing to the widespread usage of mobile devices, people can document whenever and whatever they want in several modes (i.e., pictures, videos or text). Social media gives an opportunity to interconnect the current situation to other persons or to emergency agencies even when mobile phone or emergency lines may be overloaded. New openings arise to use this platform to detect events and extract crucial material about the incident and nature of that event. A major task for the abstraction of event information from social media is its shapeless and raucous wildlife. In this paper, in order to notice and label the real time event, the 5W (What, Where, When, Who, and Why) model is future. Firstly, users of social media are set as the board. Secondly, the three-dimensional and sequential information from the social media are mined to notice the real time event. Thirdly, a notice is sent to users laterally with GIS based footnote of the detected event. Our model can grip new events, the location and the time an event becomes bursty. The future method is assessed with case studies. The results show the truth and efficacy of the future method by noticing real time event in Tweet.

KEYWORDS: Event detection, Emergency event notification, social network.

I. INTRODUCTION

Social media network is used by millions of people round the world to socially link to their friends, family members, and collaborators. Tweet is one such micro-blogging service. Since Twitter is usually accepted today and always available it is very glowing suited for event recognition. A Tweet is a grade update message, often used as a message to friends and classmates which is partial to 140 characters. A user can follow other users, that user’s followers can read his/ her chirps on a eventsource. Since its introduction on July 2006, Twitter users have improved fast. The number of recorded Twitter users topped 30 crores in 2016. The facility is still calculation about 6,000 users per daytime and presently, 4 lakhs twitters are extraeach minute.

An imperative chin of tweet is its real-time nature. Tweet users write twitters several periods in a onlydaytime. Workers can know what other users are undertaking and what they are rational about now. Numerous imperative illustrationstypify their real-time wildlife, in the event of a
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reallydurablequakeseveralimages get spread through Tweet. Persons will thereby able to know the surroundings of damage directly. In such a way, frequent update results in frequentrumorslinked to events. They include social events such as gatherings, cricket, sports, and radicalmovements. They also include terrible events such as storms, fires, traffic jams, riots, heavy rainfall, and quakes. Actually, Tweet is used for real-time notices to help during a quake or fireemergency or live traffic updates. This paper presents an examination of the real-time wildlife of Tweet that is designed to determine whether we can quotation valid material from it. We recommend an event noticescheme that displaystwitters and sendsnoticenotification using information from the examination.

In this investigation, first we browse through frequenttwitters related to goalincident. Second, we recommend models to quotationactions from those twitters and approximationplaces of events. Finally, we directnoticeto users in that place by showing a GIS based annotation.

II. RELATED WORK

OriginallyIncident Detection was based on prior workerenquiries. Fung et al. future to first recognize the bursty feature related to the worker query and then organize the documents related to those bursty features into an event hierarchy. In a user specifies an event of interest using several keywords as a query. The response to the query is a combination of news feeds and emails that are sufficiently correlated and collectively contain all query keywords within a time period. The proposed work is also related to event detection using click-through data. Event ranking with user attention is reported in where the events are firstly detected from news streams. User attention is then derived from the number of page-views (collected through web browser toolbars) for all the news articles in the same event. We proposed the method for outbreak detection based on cost-effective function. Recently, with the high speed development of the social networks such as Twitter, research has been going on for using this big data for targeted publicity, marketing, localization of natural disasters, and expecting sentiment of investors. we investigated the real-time nature of Twitter, and its use in event detection. The twitter users are regarded as sensors. Their messages are used for detecting earthquake. Tactlessly, automatically detecting and resisting real time urban emergency events using social media is not that easy. First reason being, the huge volume of the social media data. Dispensation and investigatingis a challenging job. Checking for dismissed and incorrect information is necessary. Second is the high Velocity of data moving in and out is faster than that of analyzing and processing them.

III. PROPOSED METHODOLOGY

The proposed model aims at extracting and analyzing the information from social media. And social network users can be seen as social sensors. The proposed model is set as a hierarchical data model including three different layers.
Figure 1: Three Layered architecture model

(1) **Social sensors layer.** In this layer, we assemble data connected to real-time events. The social network such as twitter can be seen as a sensor receiver. For example, if a user makes a message in twitter about a fire occurrence. Usually, social media provides API for downloading the real time data.

(2) **Data Processing/Analysis layer.** In this layer, basic elements like what, when, where, who, and why of the proposed 5W model are extracted from the sensing data of the social sensors layer. Knowledge base and positive samples of the event are implemented in this layer, which are used for improving the accuracy of this layer.

(3) **Event detection and notification layer.** In this layer, the detection and description of the event is notified. Of course, the spatial and temporal information of this event is also given. A GIS based description of the detected event is shown.

The 5W model provides five basic elements of an event, which is summarized as follows.

(1) **What.** The most important element of the proposed 5W model is to detect what happened in the urban environment. For example, if a user posts a message in Twitter about a fire occurrence, the proposed 5W model must detect that real time event. Besides the short text provided by Twitter user, multimedia data such as images and short videos can also be got. For example, a user may upload the real time image of a fire when he sees it.

(2) **Where.** Besides detecting what happened, it is needed to reveal the location information of the event. Fortunately, social media services have become a location information platform of users. Stefanidis et al. [18] reported that approximately 16% of the Twitter feeds in their experiments had detailed location information with it in the forms of coordinates, while about 45% of the tweets they collected had some geolocation information at the city level. The check-in information can be used as the location information of the event.

(3) **When.** Twitter has a very good real time feature. Each Twitter message has a timestamp, which can be used for revealing the occurrence time of an event. For example, at the beginning, the number of Twitter messages about it may be low. When someone posts it on the main websites as headline news, an event may be in an outbreak state. So many social sensors talk about it. Of course, at last, an event may be in a decline state. The number of Twitter messages about it may be low again.

(4) **Who.** Social sensors may act as the witness of an event since they are at the place of the event. For example, when a Twitter user takes a picture of a happening fire event, he can be seen as the spectator of that fire. Besides the witness, some people act as the participant of the event. For example, a person may be participant in a riot.

(5) **Why.** An incident requires an instantaneous feedback or aid for emergency situations. Hence, it is imperative to accumulate the reason after the decline of that incident. The upload message by
social sensors may reveal the reason for the incident. For example, a Tweetworker may post a message “OMG, I saw a car smash a man who cross the red light”. The message posted by witness or challenger can be used to explore the potential reason of that incident.

A set of queries Q is created for a target event. We set as s as 3s. We set conditions as N positive twitters come in 10 miniature for a specific event. The location statistics of each twitter is obtained by the check-in material. Once a new incident is detected notice is sent to workers. In case of emergency procedures an e-mail or sms alert is sent to recorded workers.

Algorithm to detect an event as follows:
1. A usual of enquiries S is used to extract a goal incident.
2. Relate query S with the twitters T for each sseconds.
3. For each twitter, obtain erections when, what, who, where and why.
4. If N no. of twitters are created (ex. 10 tweets in 10 minutes) for a query S then earnings to step5.
5. Assert it a new incident E and notify all recorded worker.
6. Check if the goal incident is an emergency event, if yes Send alerts SMS/ e-mails to recorded workers.

The Case event: We select an “quake” incident occurred in 07:20 at Bangalore”.

What. Five concepts about the “quake” are used to search in Twitter from last 24 hrs. Amongst all the mails returned a few mails has check-in material and pictures. These can be used to perceive another four elements (When, Where, Who, and Why).

Where. The three-dimensional material extracted from messages. The place of the “quake” is annotated by the red circle in the map. The uploaded pictures of the workers are shown along with the annotated worker. The uploaded pictures show the different condition of the “quake” incident.

When. It is famous that the first surface time of these mails is 07:25, which is only 5 minutes later than the seeming time of that “quake” incident. The starting timestamp of that incident using the proposed 5W model is 07:25.

Who. In the “quake” emergency incident, witnesses who upload the image can be mined from the mails. In this case study, 21 users who post the valid mails can be seen as witness of the “quake”.

Why. The message with high number of forward or posted by official users is prone to reveal the reason. Also, if the message is posted by the observer, it is more likely to say the reason. In this case, no reason can be mined.

Image. The image is very important in case of emergency events. The real time image of an “quake” can help firemen or disaster management authorities to know the condition of the situation.

IV. CONCLUSION

In this paper, the real-time nature of Tweet is used to perceive events. Each Tweetworker is measured as a sensor, and detection of an event is based on sensory explanations. Semantic investigation was applied to twitters to classify them into a positive and a negative class. Check-in or GIS material is mined to get the places of actions. The twitters are from persons who witness or participate in an event. Thus, this model is a novel approach to notify persons promptly of any events happening around them. In case of emergency events and disasters this service could help the disaster management agencies, and government bodies like Fire department, Police department, etc., to act swiftly, thus minimizing the loss of life.

In the future, we plan to analyze the temporal sequence of the tweet set from a single location to determine whether multiple problems on the same location are the result of a single incident, or relate to numerous events.
REFERENCES


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