

## **Implementation of Social Event Analysis by Using Multi Modal Event Topic Model**

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**Abstract:** *The tremendous improvement of social events on internet, it has been more complex to precisely find search and organize the entertaining events. Tremendous social media data, which is helpful to graze, search and monitor social events by users or administration. To deal with this problem, we proposed a shocker multi-modal social event tracking and progress formation to not only impressive capture multi-modal topic of social events, but effective event docket details over time. To derive this intention, we proposal a shocker multi-modal event topic model [MMETM], which can impressive model social media documents, incorporate long text with relative images, and to understand the relativity between textual and visual modal to distinct the visual delegate topics and non-visual delegate topics. To apply the MMETM model to social event tracking, we used development method to denoted as MMETM, which can derive social events related informative textual and visual topics over time to accommodate events and their trends of progress. To evaluate the impressive proposal appraisal convey that proposal MMETM algorithm performing favorable against many systems.*

**Keywords:** *Location services, GPS(Global Positioning System), AWD, IR-Square Tree, Android Virtual Device (AVD)*

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### **I. Introduction**

With the fast growth of Internet, more and more social media sites (e.g. Facebook, Youtube, Google News) have emerged. People are capable to convenient produce and share social multimedia accessories online. As result, social media platform have combining a gargantuan depot of diverse event accessories information, and a pop event those are incident all over us and all over the world can spread very quick, and there are massive aggregate of social events with multi-modality (e.g. images, text, videos) on internet. In actual world scenario, most of these multimedia accessories attach with social event uploaded by user are inform with some decided topics, and it's little spend for folk to manuscript grouping them. For instance, user may desire to knowledge the total theme progression steps of the event "Perfuse Enclosure Street" from beginning to termination.

When those search for the recent related event on Google News usage the search appliance to combine knowledge given well definition queries, they have receive lots of knowledge. It would be of great advantage if we receive the progressive inclination of social events and think the theme sample over time, which is the intention of event tracking and event appraisal. Therefore, Given an event opening with the first story, we requirement to endorse which subsequent stories describe the similar event and mine and event theme samples and gain the progress process over time, and then think these automatically.

Recently, mining and monitoring social event in social media has attracting roomy exploration interests, such as social event mining, social event discovery and tracking and event progress examples, which generally implicate a single modality such as text knowledge, social media information incorporate unstructured metadata in many modalities. Generality, nearly all subsist duty focuses on either textual features or pictures in separation. Limitation swank have been constant to analyzing these multimodality in a fraternize route to model multimedia event accessories. In separate social media platforms, social media events have modiedmultimodel knowledge, such as text, pictures and videos, which integrant each other and are useful for the social event analysis. For example, given the same social events, they may have separate users, but their visible knowledge may be same. Therefor, multimodal feature mixture is helpful for social event analysis. Reuter and Cimiano use multimodal feature to model of events and media data for their assignment. Albeit multimodal feature such as tag, time, position or visible features, are processed, the magnitude and effectiveness of these features have not been observation in detail till now. Also all of these previous ways focus on features designing and modeling the textual and visible knowledge together and ignoring the semantic connection among many modalities of

social events. Thus it is compulsory and challenging to explore an effective multimodal mixture strategy for social event tracking and progressive analysis.

## **II. Literature Survey**

In this section, we briefly review previous methods which are most related to our work including event tracking and topic model methods.

### **A. Social event discovery and tracking**

With the tremendous in development of social event in internet, how to endorse and monitor social event becomes many and many challenging. A lot of work has been done in the sector of topic discovery and tracking. All of these methods are based on single modality knowledge or multimodality knowledge. In the single modality analysis, more existing or methods adopt visible knowledge or textual knowledge in isolation to model discovery and tracking. Diakopoulos study event visualization and event analysis by analyzing .Twitter messages related to media events. Makkonen et al. express expressive semantic features such as names, time context ,and place and understand a similarity metric based on a single grouping division .However, social media includes modalities and the single modality based method ignore the multimodal property of social event.

### **B. Event summarization**

Multi-document summarization which addresses the knowledge overload problem has drawn much advertency in the past to decades. Gong and Liu proposal a normal text summarization method that creates text summaries by ranking and extracting parenthesis from the original document Haghghi and Vanderwede present detection of generative probabilistic models by resort a hierarchical LDA- style model to represent accessories undoubted model by resorting a hierarchical LDA- style model to represent accessories specificity as hierarchy of topic vocabulary partitions for multi-document summarization.

### **C. Social Event Analysis**

Sentiment analysis based on social event accessories has drawn many notice in choose sentiment from underlying text streams Hu et al investigate whether social contact can assist sentiment analysis by proposal a sociological approach to handle clamorous and short text for sentiment distribution. In the authors consider the problem of perceiving the segments and point of an event that garnered complement or comment conformity with all together twitter reaction, and proposal a limber factorization structure to sneez factors about segments topics and sentiment.

### **D. Topic Model**

Topic model such as latent dirichlet Al-place (LDA) and probabilistic latent semantic analysis have been splay apply to many desire and have lots of circulation, such as supervised latent dirichlet distribution dynamic latent dirichlet circulation and its differentiation. Blei and lafferty proposal the dynamic topic model method which uses state interval model on the physical parameters of the multinomial division that record the topics to analyses the time progress of topics in huge document peck. Alsumait et al. proposal anon line LDA method, which elongate the gibbs sampling method and resort it to gain hyper parameters of the time chip.

## **III. Problem Statement**

We propose a shocker multi-modal event topic model [MMETM], which can impressive model social media documents, incorporate long text with relative images, and to understand the relativity between textual and visual modal to distinct the visual delegate topics and non-visual delegate topics.

## **IV. Proposed Work**

We propose a novel multi-modal social event tracking and evolution framework to obtain the evolutionary trends of social events and generate effective event summary details over time. The input is the multi-modality data collected from Google News including images and texts. Based on the input data, our algorithm can learn multi-modality topics and track multiple events. After tracking, for each event, it can be visualized with texts and image over time. Meanwhile, we can mine their semantic topics.

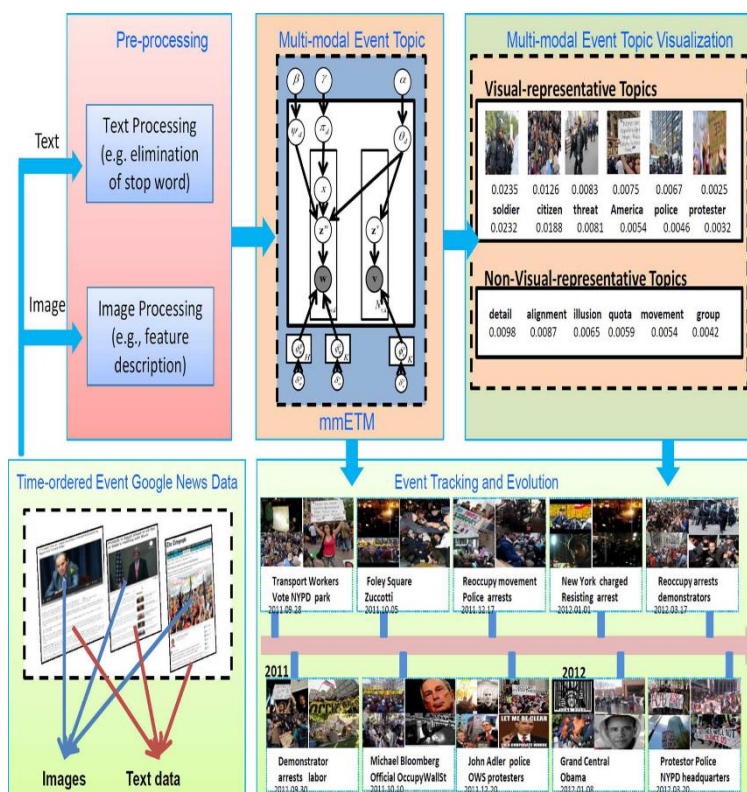


Fig. System Structure

Our proposed system is divided into following modules:

1. Pre-processing
2. Multi-modal event topic mining module
3. Multi-modal event topic visualization
4. Event tracking and evolution

The input is multimedia documents with time-ordered event data downloaded from Google News, including images and texts. Each social media document contains long text and its corresponding images. After pre-processing, they are input into the mmETM model.

The multi-modal event topic mining module is to effectively model multi-modal social event documents, which can learn the correlations between textual and visual modalities to separate the visual-representative topics and non-visual-representative topics. In multi-modal event topic visualization, we can show the learned visual-representative topics and non-visual-representative topics, which can help understand the social events.

For event tracking and evolution, We adopt an incremental learning strategy to update the proposed mmETM model over time, denoted as incremental mmETM. In our tracking algorithm, we need to first initialize the mmETM model for each social event. Then, the coming event documents will be determined to which event in the next moment by similarity computing identification. Finally, event documents are assigned to the corresponding social events, and the mmETM will be updated incrementally. In this way, we can track multi-modal social event documents over time and show the whole evolutionary process of events with their topics.

## V. Mathematical Model

### 5.1 System Description

1. Input: Multi-modality data collected including images and texts.
2. Output: Multi model social event tracking.
3. Identify data structures, classes, divide and conquer strategies to exploit distributed/parallel/concurrent processing, constraints.
4. Functions: User Registration, Incremental Parameter Inference, Event Tracking.
5. Mathematical formulation: Social Event Detection and Tracking.
6. Success Conditions: Multi model social event tracking done successfully.
7. Failure Conditions: Multi model event tracking not find out properly.

## VI. Implementation Details

### 6.1 Incremental Parameter Inference

To track multiple events over time, we present an incremental inference method for our proposed mmETM that sequentially updates the model at each epoch using the newly obtained event documents and the parameters of the previous epoch. Since an event consists of many stories over time, the incremental updating strategy allows our proposed mmETM model to work in an online mode.

### 6.2 Event Tracking

Through the incremental mmETM model learning, we can obtain the document-topic distributions for each social event over times. In order to track multiple events, we apply the similarity computing identification method into our incremental mmETM model. Based on the learned mmETM model at epoch, multiple event documents can be classified into their corresponding events at approach using the similarity computing identification method. As a result, multiple events can be tracked over time.

## VII. Development Environment

The proposed system requires Eclipse that is an open source software development environment. Eclipse consists of an Extensible plugin system and an IDE.

### 7.1. Functionalities of the System

Below mentioned are the functionalities provided by the system:

1. To propose a novel incremental mmETM model for social event tracking, which can obtain the whole evolutionary process of events with textual and visual topics over time and help understand the events
2. To obtain the evolutionary trends of social events and generate effective event summary details over time.
3. To obtain the whole evolutionary process of events with textual and visual topics over time and help understand the events.
4. We collect a large-scale dataset for research on social event tracking with multi-modality information, and will release it for academic use.

### 7.2. Database

The databases created in this application are created in MySQL. User passes a query to access the database. All the rows in the database that match this query are passed as a type of pointer (cursor) and then displayed to the user. The application maintains an Adapter class that handles calls that are made to the database. The databases play an integral part of the system as all the bus information, stop information as well as routes are all stored in these databases.

## VIII. Result

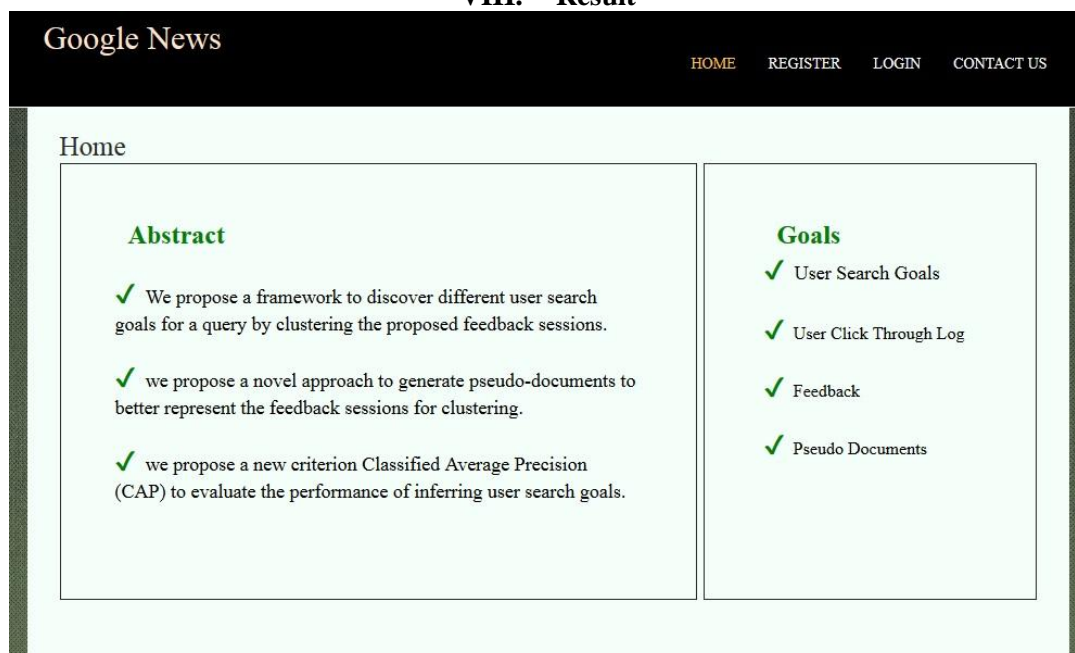


Fig. 2 Main Page

Google News

HOME REGISTER LOGIN CONTACT US

### Create an New Account

First Name  
Tejas

Last Name  
Gawande

Email ID  
Tehas@gmail.com

Password  
.....

Confirm Password  
.....

Contact Number  
9850889865

I Agree to the All Terms of Service and Privacy Policy.

REGISTER NOW

Fig. 3 Registration Page

Google News

HOME REGISTER LOGIN CONTACT US

### User Login

Email ID  
Tehas@gmail.com

Password  
.....

Login

3D figure holding a red padlock and a key

Fig. 4 Login page

## IX. Conclusion

We have presented shocker multi model social event tracking and progress structure derive the progressive inclination of social events and produce effective event summary details over time. Our proposed MMETM can model the multi-modal quality of social event and learn the relativity between textual and visible modalities to distinct the visual representative topics. To apply this model of social event tracking, we adopt an

effective incremental updating strategy. We have conducted performance on our collected dataset and roomy results have exhibit that our model outperforms all another existing models. In the future, we will investigate more task under this structure, such as event summarization and event attribute mining in social media. Also, we attention to explore whether the tracking performance can be improved by understanding separate domains, such as, Google News, Flickr, You Tube.

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### **References**

#### **Journal Papers:**

- [1]. D. Patel, W. Hsu, and M. L. Lee, "Mining relationships among intervalbased events for classification," in Proc. SIGMOD, 2008, pp. 393–404.
- [2]. J. Allan, R. Papka, and V. Lavrenko, "On-line new event detection and tracking," in Proc. SIGIR, 1998, pp. 37–45.
- [3]. M. Merler, B. Huang, L. Xie, G. Hua, and A. Natsev, "Semantic model vectors for complex video event recognition," IEEE Trans. Multimedia, vol. 14, no. 1, pp. 88–101, Feb. 2012.
- [4]. T. Zhang and C. Xu, "Cross-domain multi-event tracking via CO-PMHT," ACM Trans. Multimedia Comput. Commun. Appl., vol. 10, no. 4, pp. 31:1–31:19, 2014.
- [5]. X. Yang, T. Zhang, C. Xu, and M. S. Hossain, "Automatic visual concept learning for social event understanding," IEEE Trans. Multimedia, vol. 17, no. 3, pp. 346–358, Mar. 2015.
- [6]. L. Xie et al., "Discovering meaningful multimedia patterns with audio-visual concepts and associated text," in Proc. ICIP, 2004, pp. 2383–2386.
- [7]. D. M. Blei and J. D. Lafferty, "Dynamic topic models," in Proc. ICML, 2006, pp. 113–120.
- [8]. Y. Yang, J. Zhang, J. Carbonell, and C. Jin, "Topic-conditioned novelty detection," in Proc. KDD, 2002, pp. 688–693.
- [9]. J. Makkonen, H. Ahonen-Myka, and M. Salmenkivi, "Simple semantics in topic detection and tracking," Inform. Retrieval, vol. 7, no. 3–4, pp. 347–368, 2004.
- [10]. N. Diakopoulos, M. Naaman, and F. Kivran-Swaine, "Diamonds in the rough: Social media visual analytics for journalistic inquiry," in Proc. IEEE Symp. Vis. Analytics Sci. Technol., Oct. 2010, pp. 115–122.