

Reviews For Paper

Track Information Retrieval
Paper ID 843
Title Efficient Temporal Synopsis of Social Media Streams

Masked Reviewer ID: Assigned_Reviewer_1**Review:**

Question	
Overall Rating	Neutral
Top 3 Strenghts	<ol style="list-style-type: none">1. This paper considers the problem of mining frequent itemsets for synopsis generation in streaming social media, e.g., tweets, which contains large and sparse vocabulary.2. A Linear time Closed itemset Mining (LCM) algorithm is adopted to mine the frequent itemset while filtering trivial results. The closure condition of LCM is proposed to retain only those results that exceed a threshold of distinctiveness. Temporal ranking based on information gains is performed to identify results that are particularly relevant to the time period of interest.3. Tweets in late 2012 are collected and evaluated to demonstrate the effectiveness of the proposed method.
Top 3 Weknesses	<ol style="list-style-type: none">1. Using frequent itemset to mine synopsis of tweets seems irrelevant to the content of the tweets and it cannot extract the structure of the content and utilize the meaning of words as does in traditional topic modeling. It seems that mining frequent itemset cannot solve the problem the paper aims at thoroughly.2. The motivation of the paper is not so strong. The paper omits detailed description of the data analyzed. Why frequent itemset mining fits analyzing temporal topics in tweets? The paper can provide more evidence.3. The evaluation lacks benchmark results and can just provide some descriptive results, which reduce the convincing of the results.
Detailed Comments	<p>The paper considers the problem of mining frequent itemsets for synopsis generation in streaming social media and adopts a Linear time Closed itemset Mining (LCM) algorithm to mine it. The closure condition is proposed to retain only those results that exceed a threshold of distinctiveness. Temporal ranking based on information gains is performed to identify results that are particularly relevant to the time period of interest. Evaluation on tweets on Nov. 6, 2012 and Nov. 9, 2012 is conducted to show the mining results.</p> <p>Overall, the paper is well-written. However, it contains the following issues:</p> <ol style="list-style-type: none">1. Only mining frequent itemsets seems that it cannot catch the structure of the content and utilize the meaning of words. Hence, it cannot solve the temporal synopsis generation problem thoroughly as the paper aims.2. The evaluation of the paper lacks benchmark results and can only

	provide some descriptive results, which reduces the convincing of the results.
Do you recommend this paper for a poster paper (4 pages)?	Full paper or poster paper

Masked Reviewer ID: Assigned_Reviewer_2

Review:

Question	
Overall Rating	Neutral
Top 3 Strenghts	<p>1) The paper investigated an interesting problem.</p> <p>2) A new method for efficiently creating temporal synposes of social media streams, was proposed based on a frequent itemset mining algorithm.</p> <p>3) The paper is well presented and easy to follow.</p>
Top 3 Weknesses	<p>1) The review of literature is rather weak.</p> <p>2) More information can be included for synposes construction as Tweets actually have some intrinsic structures, e.g., RT, @.</p> <p>3) The experimental study could be further improved.</p>
Detailed Comments	<p>The paper investigated an interesting problem, and a new method for efficiently creating temporal synposes of social media streams, was proposed based on a frequent itemset mining algorithm.</p> <p>My concerns about the paper:</p> <p>1) The authors mainly considered the terms in tweets for synposes construction, however some intrinsic structures, e.g., RT, @, could be also important to cluster the tweets. For example, Provenance-based Indexing Support in Micro-blog Platforms. ICDE 2012, TI: An Efficient Indexing Mechanism for Real-Time Search on Tweets, SIGMOD 2011.</p> <p>2) The experimental study can be further improved by comparing with existing works.</p>
Do you recommend this paper for a poster paper (4 pages)?	Full paper or poster paper

Masked Reviewer ID: Assigned_Reviewer_3

Review:

Question	
Overall Rating	Reject
Top 3 Strenghts	<p>1. The authors propose a method for temporal summarization on Twitter streams, based on a frequent itemset mining algorithm.</p> <p>2. Different with most existing temporal summarization methods that select meaningful tweets, this paper summarizes Twitter data into itemsets.</p> <p>3. It is well written; and comprehensible.</p>

Top 3 Weaknesses	<ol style="list-style-type: none"> 1. No state-of-the-art baselines in experiments. 2. It is difficult to find any evaluation metrics in this paper. 3. Poor in the related work section.
Detailed Comments	<p>This paper proposes a method for creating temporal synopsis of social media streams, based on frequent itemset mining algorithm, the Linear time Closed itemset Mining (LCM), that is suitable for sparse data. This paper is well written and comprehensible; its topic is relevant to CIKM.</p> <p>My main comment concerns the experimental baselines in this paper. I cannot find any state-of-the-art baselines in its experimental evaluation. In the related work section, the authors announce that ``Our work complements the work done by Yang et al [25] for using frequent itemsets as a temporal summary." However, the authors do not compare their results with [25] in experiments. As far as I know, lots of previous work for Twitter summarization task has been proposed in recent years, which are overlooked by the authors in related work. Some of them are listed as follows:</p> <ol style="list-style-type: none"> 1. X. Zhao, J. Jiang, J. He, Y. Song, P. Achananuparp, E. LIM, and X. Li. Topical keyphrase extraction from twitter. In ACL 2011, 2011. 2. Event summarization using tweets. In ICWSM 2011, pages 66–73, 2011. 3. B. Sharifi, M. Hutton, and J. Kalita. Summarizing microblogs automatically. In NAACL 2010, 2010. <p>My second comment concerns the evaluation metrics in this paper. I cannot find any experimental metrics for performance evaluation in the experimental setting. Apparently, only "Time" and "Empirical Evaluation" is not enough to prove the effectiveness of the authors' method. For the summarization task, there is one common recall-based evaluation metrics based on terms co-occurrence: ROUGE metrics:</p> <p>C. Lin. Rouge: A package for automatic evaluation of summaries. In ACL 2004, pages 74–81, 2004.</p> <p>This method can be used as a possible solution for this task. Meanwhile, Precision/Recall also can be used here.</p> <p>Other minor comments:</p> <ol style="list-style-type: none"> 1. In Algorithm 1, some symbols are not defined, e.g., what's the meaning of $frequency[1...w_{sh}]$? 2. Where is the optimized value of α in Algorithm 1? Further, the authors should provide details about how to get the optimized value, similar as in Figure 5.
Do you recommend this paper for a poster paper (4 pages)?	No