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Dr. Binshan Lin July 18, 2017
Louisiana State University at Shreveport, One University
Place, Shreveport,
LA 71115, Louisiana, USA.

Dear Dr. Binshan Lin,

I am writing to submit our manuscript entitled: Exploiting Social Networks as a Live Mass Media Channel During Disasters for Reactions, which is an improved and extended version of the paper: Tsum4act: A Framework for Retrieving and Summarizing Actionable Tweets during a Disaster for Reaction,[1] presented at *the 19th Pacific-Asia Conference on Knowledge Discovery and Data Mining* (PAKDD) 2015, for the consideration of publication in Expert Systems with Applications.

Social networks e.g., Twitter have been proved as a valuable information channel including emergencies e.g., disasters, during which people need updated information for reasonable reactions. However, tweets during a disaster e.g., a tornado usually tend to explode in a large volume and high speed challenging people in selecting informative information. This manuscript presents a framework to automatically distill the informative tweets in disasters by utilizing extractive summarization. Our framework has to overcome information challenges in disasters: large tweet volume, noise, and diversity. Given a disaster-related query, our framework: 1) retrieves tweets containing the query from the source; 2) obtains informative tweets in valuable classes by removing irrelevant ones; 3) assigns the informative tweets into clusters; and finally, 4) ranks to select top m tweets in each cluster to provide for users as the summarization.

Experimental results show three important points: (1) our method significantly outperforms no-ranking, no-extraction and retweet baseline; (2) ranking with no event extraction (only using Cosine similarity) is inefficient in dealing tweets; and (3) retweet can be used for providing tweets in disasters in an appropriate manner. We believe our findings are likely to be of great interests to information retrieval and data mining scientists, disaster researchers, government organizations who read your journal.

Comparing to the original paper, this manuscript makes five new and significant improvements as follows.
○ We overview tweet summarization in the literature. It provides a brief history of this task.
○ We refine and clearly describe our model, which are not sufficiently mentioned in the original paper.
○ We also compare our method to two additional methods: no event extraction, which does not use the event extraction and no ranking, which randomly selects tweets as the summarization. Experimental results indicate that our method significantly outperforms the two additional baselines as well as the retweet model.
○ We observe the output from our model to analyze its advantages and limitations in extracting tweets.
○ We carefully revise the English usage, e.g. typos, grammar in the manuscript.

All authors approved the manuscript and this submission.
Thank you very much for receiving our manuscript and considering it for review. We appreciate your time and look forward to your response.

Sincerely,

Minh-Le Nguyen

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[1]All the necessary documents can be accessed at: https://github.com/nguyenlab/ESWA-TSum4act