Classifying Emergency Tweets for Disaster Response

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Abstract

During disaster events such as floods, landslides, earthquakes, tsunamis, fire hazards etc., social media platforms provide easy and timely access to information regarding the ongoing crisis events and thereby become an essential vehicle of information sharing. During such events, great amounts of such socially-generated data becomes available, which can be accessed and processed to extract situational awareness insights. These insights, in turn, can be used to enhance the effectiveness and efficiency of disaster response in order to minimize the loss of lives and damage to property. People actively use social platforms like Facebook and Twitter, to post information related to crisis events. Further, these platforms provide people the location and safety status of their family and friends during such events. Twitter, the microblogging platform, witnesses thousands of informally written tweets during crisis events, and since it provides high-level APIs to access its near real-time feed, it has become the primary source of data for researchers. It is generally observed that there is an exponential burst in the number of tweets during an ongoing crisis event. This sudden burst makes the task of monitoring, identifying and processing each tweet virtually impossible for a human. However, such voluminous data can be processed using various machine learning and natural language processing techniques in coordination with a certain level of human interventions. This paper is focused on designing a semi-automated artificial intelligence-based classifier, which can classify the plethora of disaster-related tweets into various categories such as community needs, loss of lives, damages.

Keywords

Disaster Management, Disaster Response, Social Media, Twitter,
Artificial Intelligence, Machine Learning, Classification