

Spatial, Temporal, and Thematic Structure of VGI in Social Media Following Different Catastrophic Events

Haiyun Ye, Keith Clarke

ABSTRACT: Volunteered Geographic Information (VGI) in social media reports following disasters has been proven to be a prompt information source in various studies. In this study, we analyzed the social media feeds of man-made and natural disasters in order to compare and contrast spatio-temporal distribution patterns and user contribution of related tweets. The first event is the Boston Marathon bombing in April 2013 as an example of a man-made disaster that happened at a definite location and at a discrete point in time. The other is the Colorado Floods in September 2013, which was a natural disaster with a large area of impact and which occurred over a longer period of time. Geolocated tweets related to these two events centering around the U.S. were extracted and analyzed. We created sequenced word cloud graphs that visualize the related tweets as the events unfolded which could potentially contribute to the situational awareness. The results of our study show how the magnitude of the disasters influenced attention from Twitter users and may help researchers and disaster responders to gain insights about the nature of VGI in disasters.

KEYWORDS: VGI, disaster, social media, Boston Marathon Bombings, Colorado Floods, sequenced word cloud graph