Twitter and Online News Analytics for Post-Natural Disaster Management

K. Banujan
Department of Computing & Information Systems, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka.
bhakuha@gmail.com

Banage T. G. S. Kumara
Department of Computing & Information Systems, Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka

Incheon Paik
School of Computer Science and Engineering, University of Aizu, Aizu-Wakamatsu, Fukushima, Japan.

Abstract

A natural disaster is a natural event which can cause damage to both lives and properties. Since SM are capable of real-time nature of sharing the information, post-disaster management can be improved to a great extent if we mine them properly. After identifying this need and the possibility of solving them through SM, as a first step, we fetch the twitter posts by using predefined keywords relating to the disaster from Twitter API. Those posts were cleaned and the noise was reduced at the second stage. We followed keywords filtering, date filtering, two-step filtering, and geo-location filtering technique for reducing the noise. Named Entity Recognizer library was used for getting the geolocation. We did the above two stages for news which were fetched from News API. As a final stage, we compared the twitter with news datum to give the rating for the trueness of each Twitter post. The rating "more accurate" was given to Twitter posts which satisfy all the three parameters; disaster type, location details, and date with news. "Moderately accurate" rating was given in which Twitter posts satisfy disaster type and one of other parameters. The rating "less accurate" was given to Twitter posts which ta disaster type. "No correlation" is the rating in which Twitter posts do not satisfy any of the parameters. We took the news as a standard to rate Twitter posts. We believe that by using our model we can alert the organizations to do their disaster management activities in a timely manner.

Keywords - Social media mining, Disaster management, Twitter, News, API