Target Oriented Tweets Monitoring System during Natural Disasters

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Twitter, Social Networking Site, becomes most popular microblogging service and people have started publishing data on the use of it in natural disasters. Twitter has also created the opportunities for first responders to know the critical information and work effective reactions for impacted communities. This paper introduces the tweet monitoring system to identify the messages that people updated during natural disasters into a set of information categories and provide user desired target information type automatically. In this system, classification is done at tweet level with three labels by using LibLinear classifier. This system is intended to extract the small number of informational and actionable tweets from large amounts of raw tweets on Twitter using machine learning and natural language processing (NLP). Feature extraction of this work exploited only linguistic features, sentiment lexicon based features and especially disaster lexicon based features. The monitoring system also creates disaster related corpus with new tweets collected from Twitter API and annotation is done on real time manner. The performance of this system is evaluated based on four publicly available annotated datasets. The experiments showed the classification accuracy on the proposed features set is higher than the classifier based on neural word embeddings and standard bag-of-words (BOW) models. This system automatically annotated the Myanmar_Earthquake_2016 dataset at 75% accuracy on average.