

An Approach for Real-Time Detection of Traffic using Twitter Stream Analysis

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Abstract: *Social networks have been recently employed as a source of information for event detection, with particular reference to road traffic congestion and car accidents. In this paper, we present a real-time monitoring system for traffic event detection from Twitter stream analysis. The system fetches tweets from Twitter according to several search criteria; processes tweets, by applying text mining techniques; and finally performs the classification of tweets. The aim is to assign the appropriate class label to each tweet, as related to a traffic event or not. The traffic detection system was employed for real-time monitoring of several areas of the Italian road network, allowing for detection of traffic events almost in real time, often before online traffic news web sites. We employed the support vector machine as a classification model, and we achieved an accuracy value of 95.75% by solving a binary classification problem (traffic versus non-traffic tweets). We were also able to discriminate if traffic is caused by an external event or not, by solving a multiclass classification problem and obtaining an accuracy value of 88.89%.*