

# Twitter may provide valuable insights for better, faster disaster response: study

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Location-based social networks, such as Twitter, can provide critical insight and information for disaster response, according to new research by University of Alberta scientists.

Using a [machine learning algorithm](#) to classify tweets by content, region and sentiment, researchers examined tweets sent in Florida in 2017 during Hurricane Irma, when more than six million people were evacuated.

"We demonstrated that location information embedded in tweets can be useful to gain further insights about policy-relevant content," said Darcy Reynard, a U of A Ph.D. candidate and lead author on the study.

"The information can be used to develop policy both during and after disasters. The process has the likelihood of increasing response accuracy and aiding efficient resource allocation decisions during and after a disaster."

Twitter provides real-time data about the experiences of those directly affected by a disaster.

The study showed longer tweets were more likely to include useful sentiment-based, or emotional, content. More popular tweets were less likely to include useful information about the disaster, and negative sentiments were expressed more often in areas with young families.

"Research using location-based social networks, like Twitter, has an extra advantage compared to other [social media platforms](#) since tweets can include a geospatial component," said Reynard. "This allows us to

identify a user's location at the time the [tweet](#) was created so that researchers can analyze not only what topics are being discussed, but also where they are being discussed."

The study, "Harnessing the Power of Machine Learning: Can Twitter Data Be Useful in Guiding Resource Allocation Decisions During a Natural Disaster?" was published in *Transportation Research Part D: Transport and Environment*.

**More information:** Darcy Reynard et al. Harnessing the power of machine learning: Can Twitter data be useful in guiding resource allocation decisions during a natural disaster?, *Transportation Research Part D: Transport and Environment* (2019). DOI: 10.1016/j.trd.2019.03.002

Provided by University of Alberta

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