# Tweet Comparison for Puerto Rico Earthquake and Hurricane Maria

Introduction

- Since December 2019, Puerto Rico experienced several **earthquakes** > 5.0 magnitude.
- By **analyzing over 300,000 tweets**, we plan to **identify behavioral patterns.**
- We consider the **geotags** associated with tweets and **key words or topics in tweets.**
- Similar analysis is run on tweets from **Hurricane Maria** to compare the behavioral patterns of tourists and locals of each event.

Methods

- **Collecting Tweets** pertaining to disaster topics
- Using **Python** to analyze data using a Tweet parser
- **Graphing** data, such as
  - Frequency of Tweets
  - Frequency of Topics
- Analyzing **popular topics** mentioned in Tweets
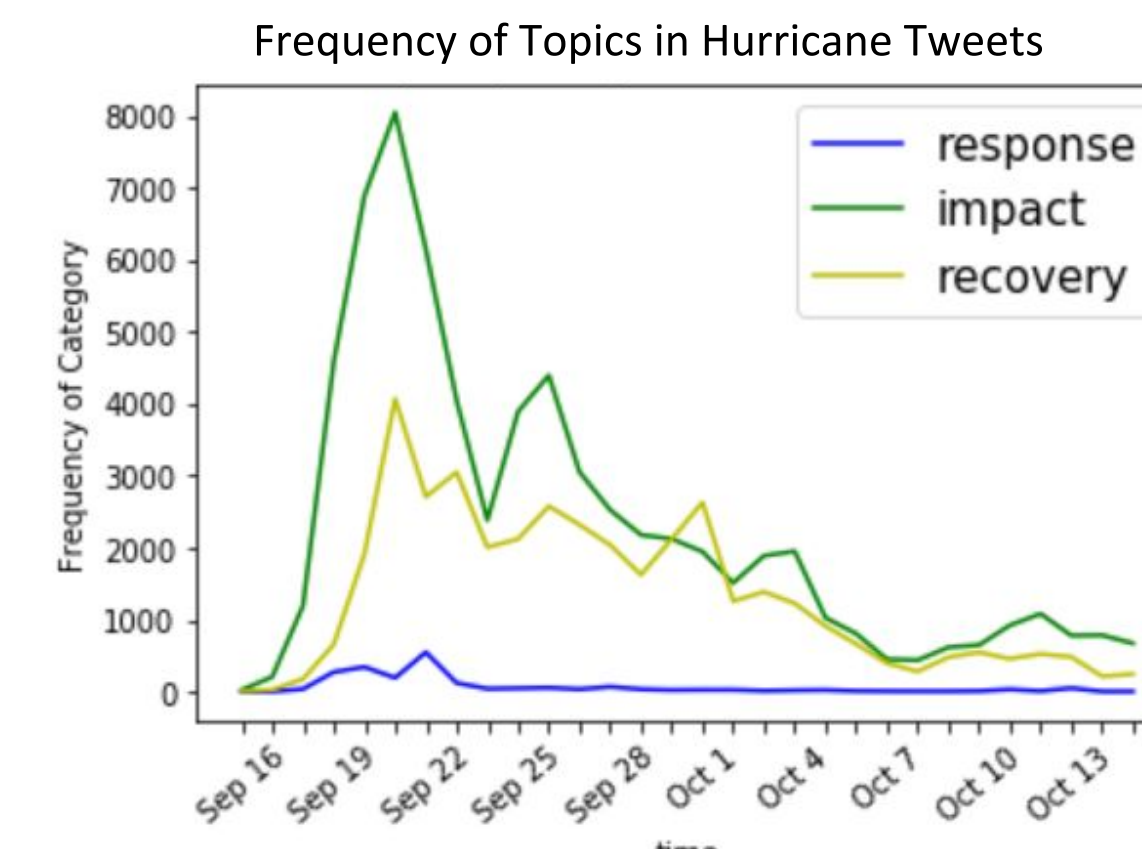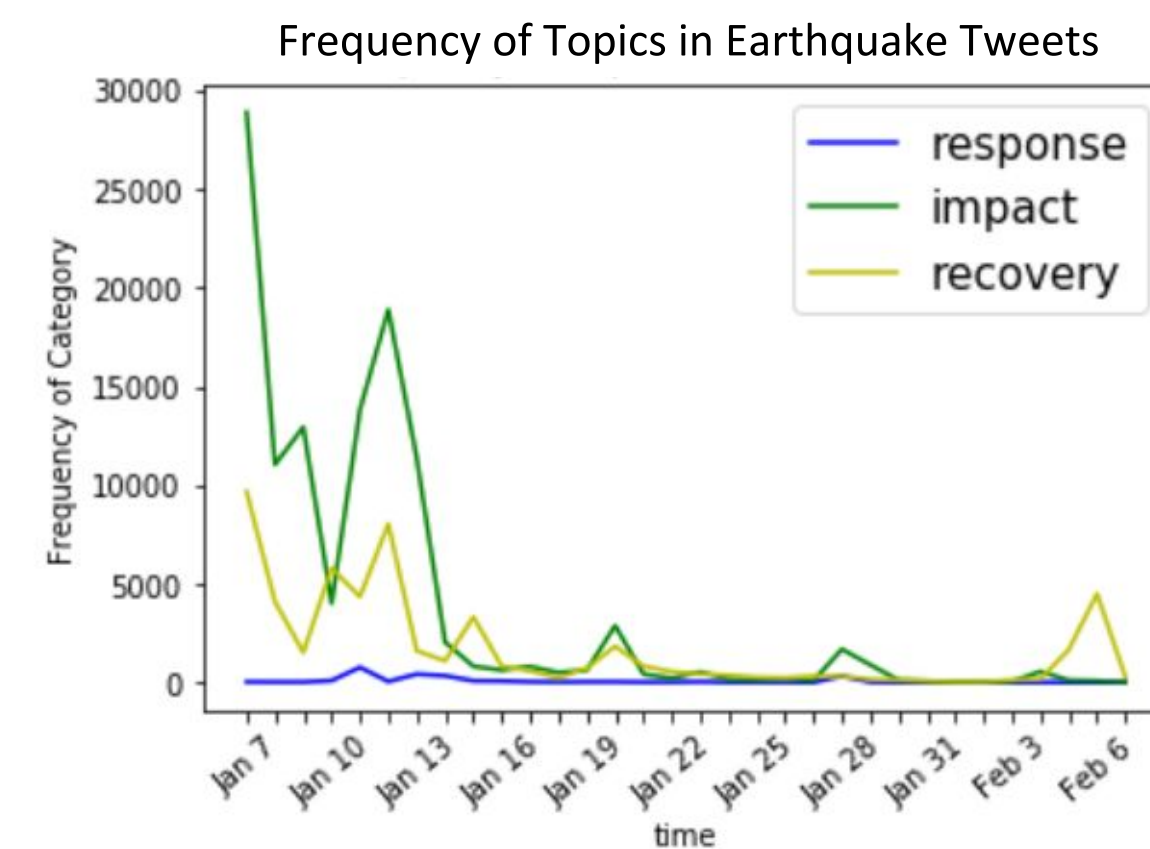
Frequency of Topics for the Puerto Rico Earthquakes and Hurricane Maria
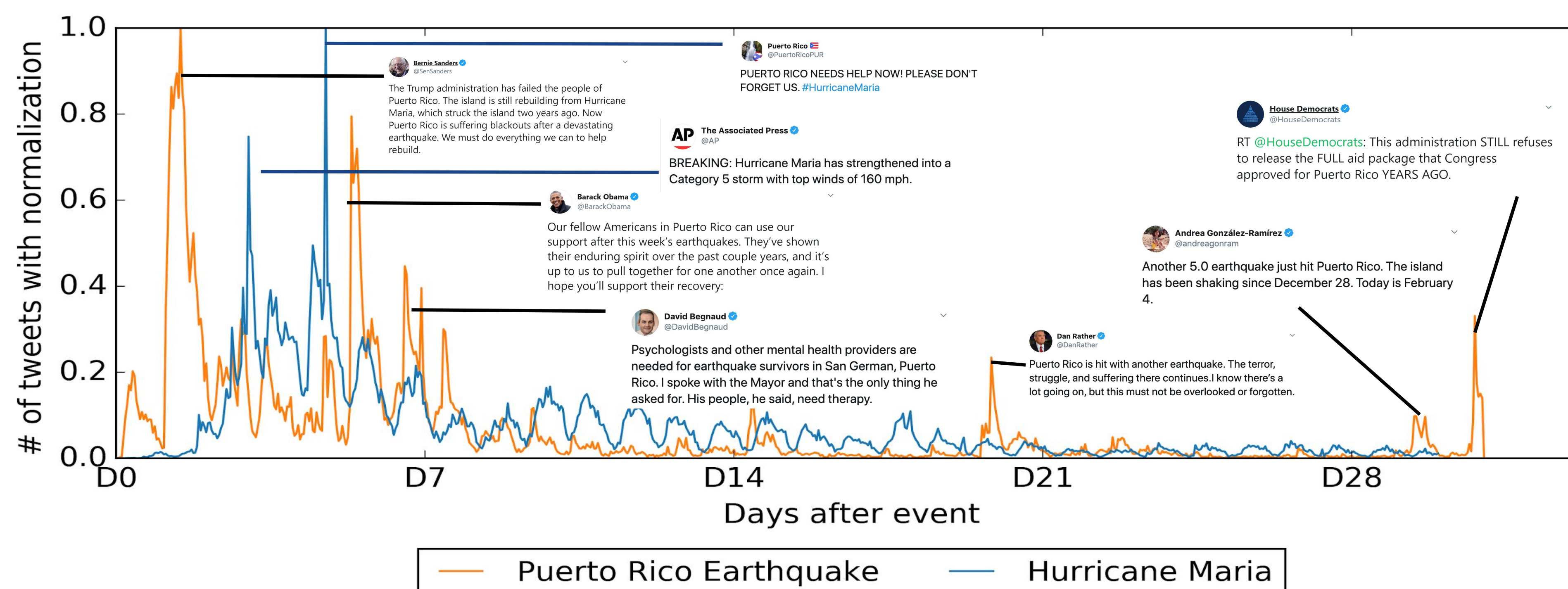
Ziqian Song, Austin Spencer, Taylor Thackaberry, Kayley Bogemann, Shane Burchard, Jessie Butler, Liuqing Li, Kris Wernstedt, Pamela Murray-Tuite, Edward A. Fox (2020). A comparison of people's use of Twitter in Puerto Rico Earthquake and Hurricane Maria. Poster, with abstract in Proceedings International Conference on Information Systems for Crisis Response and Management (ISCRAM 2020), May 2020, to be published in 2020 and presented in May 2021 at ISCRAM 2021. Blacksburg, VA.

Data

- **402,016 Tweets** related to Puerto Rico Earthquake between January 7, 2019 and February 6, 2019
- **317,214 Tweets** related to Hurricane Maria between September 15, 2017 and October 14, 2017

Conclusions

- **Hurricane Maria's arrival was forecasted**, resulting in a larger corpus of tweets about it occurring the days leading up to and during the event.
- **The earthquakes were not predicted**, and sporadic aftershocks meant that sharp spikes of activity started every time there was another earthquake.
- The overall decrease in discussion over the time period is **likely due to external (mainland US) lack of interest or relevance.**

Acknowledgement

The above maps illustrate Hurricane Maria's path compared to a heatmap of Twitter activity