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 in Earthquake Tweets](image)

![Frequency of Topics in Hurricane Tweets](image)

![Frequency of Topics for the Puerto Rico Earthquakes and Hurricane Maria](image)

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.

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