



## SENTIMENT ANALYSIS ON CLIMATE CHANGE

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# GOAL

Understand emotions, identify opinions and attitudes towards climate change/global warming through twitter posts and classify viewpoints as positive, negative or neutral.

The data set for this project is sourced from FigureEight platform and the name of the set is Sentiment Analysis on Global Warming/Climate Change.

The set contains three classifications: Yes if the tweet suggests global warming existence, No if the tweet is in disagreement, and neutral if the tweet is not engaged on either side.

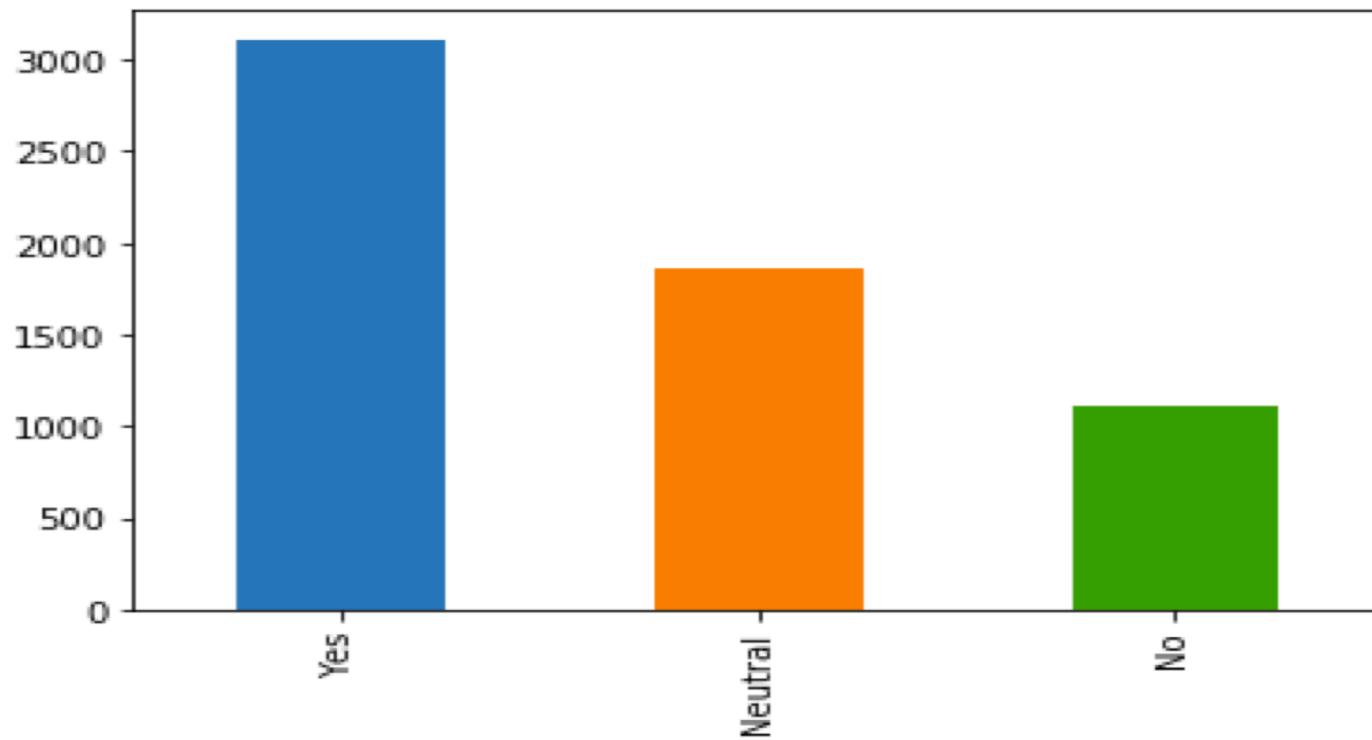
A column with the confidence score for the classification of each tweet is included in the set with a total of 6090 rows.

# DATASET

# PROCESS

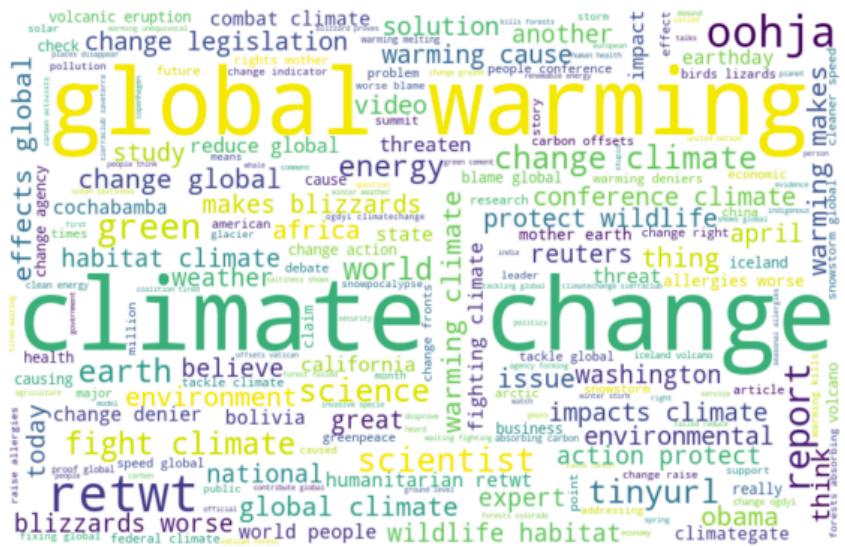
- ◆ Download .csv file into a pandas data frame.
- ◆ Feature engineering: data distribution, remove special characters and punctuation, remove suffixes, most common words across sentiments.
- ◆ Divide data into train and test sets.
- ◆ Analyze through different models.

### Sentiment Distribution

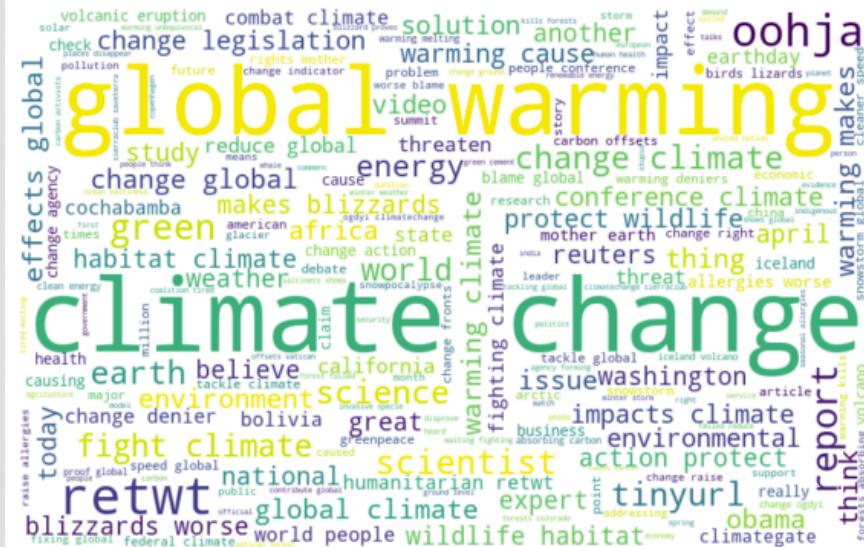


INITIAL DISTRIBUTION BY SENTIMENT

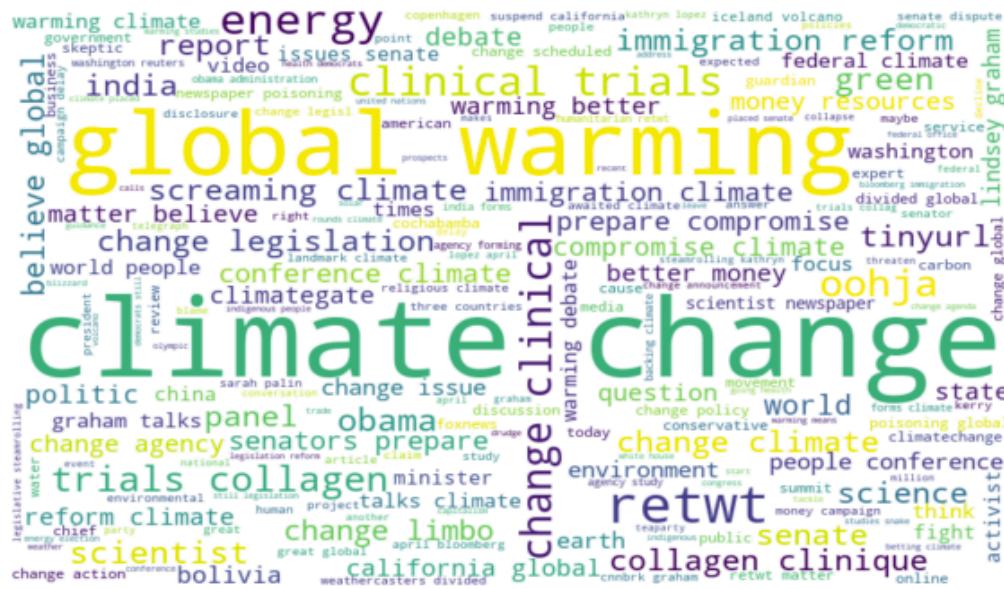
### Negative Sentiment Common Words



## Positive Sentiment Common Words



### Neutral Sentiment Common Words



# MODELS OVERVIEW

| Model                       | Loss                | Accuracy           |
|-----------------------------|---------------------|--------------------|
| Bidirectional RNN with LSTM | 0.3046527626316604  | 0.9239079379990606 |
| Bidirectional RNN with GRU  | 0.29606976192322076 | 0.9253170502583372 |
| CNN                         | 0.32124241268565856 | 0.92555190230155]  |

The accuracies of each model are very close but the recurrent neural network with GRU cells gives a less loss with an accuracy very close to a CNN.

THANK YOU