



You Mad Bro?

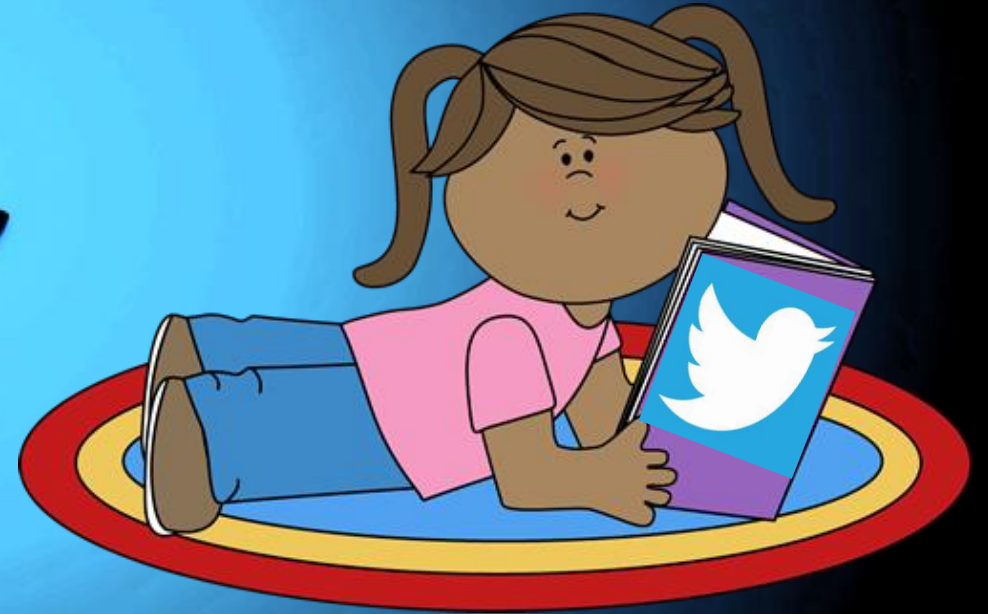
A Twitter sentiment analysis

By: Darius Fuller



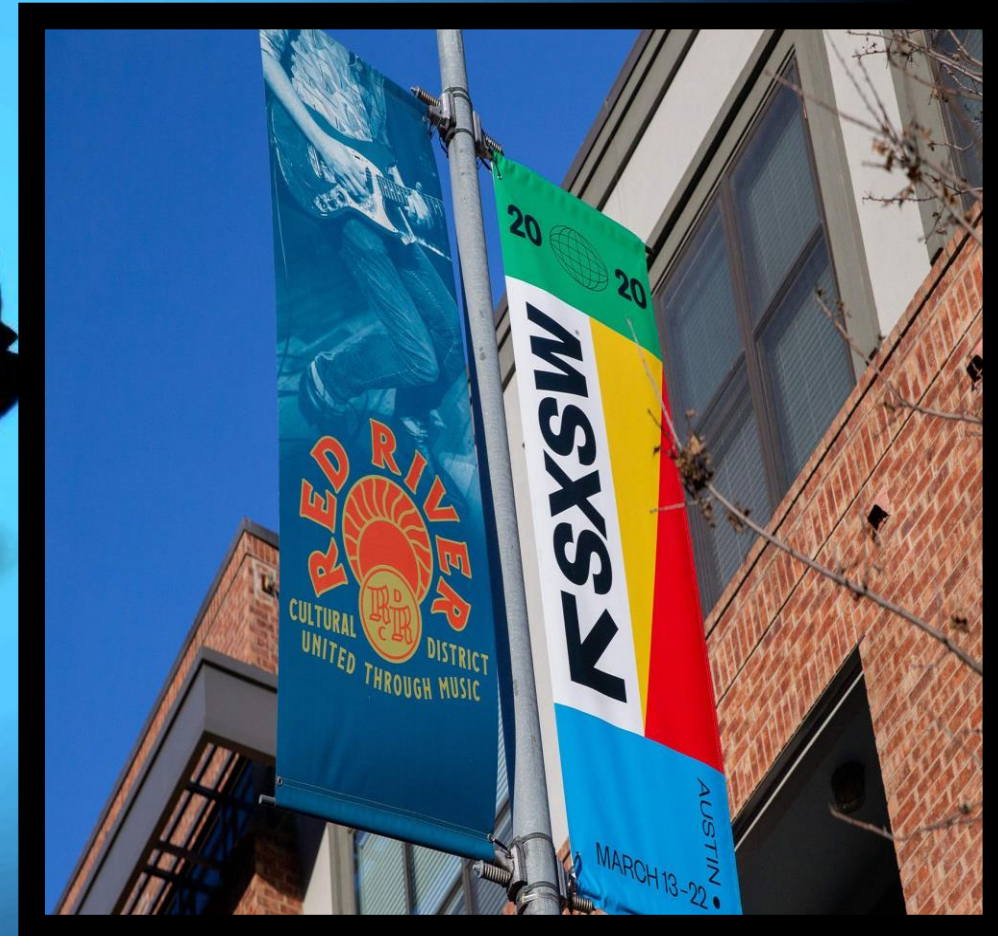
The Task & Goal

- Create a model that can 'read' tweets
- Detect sentiment:
 - Positive
 - Negative
 - Neutral
- Gain insight on how public views your 'product'
 - Can help understand behavior online

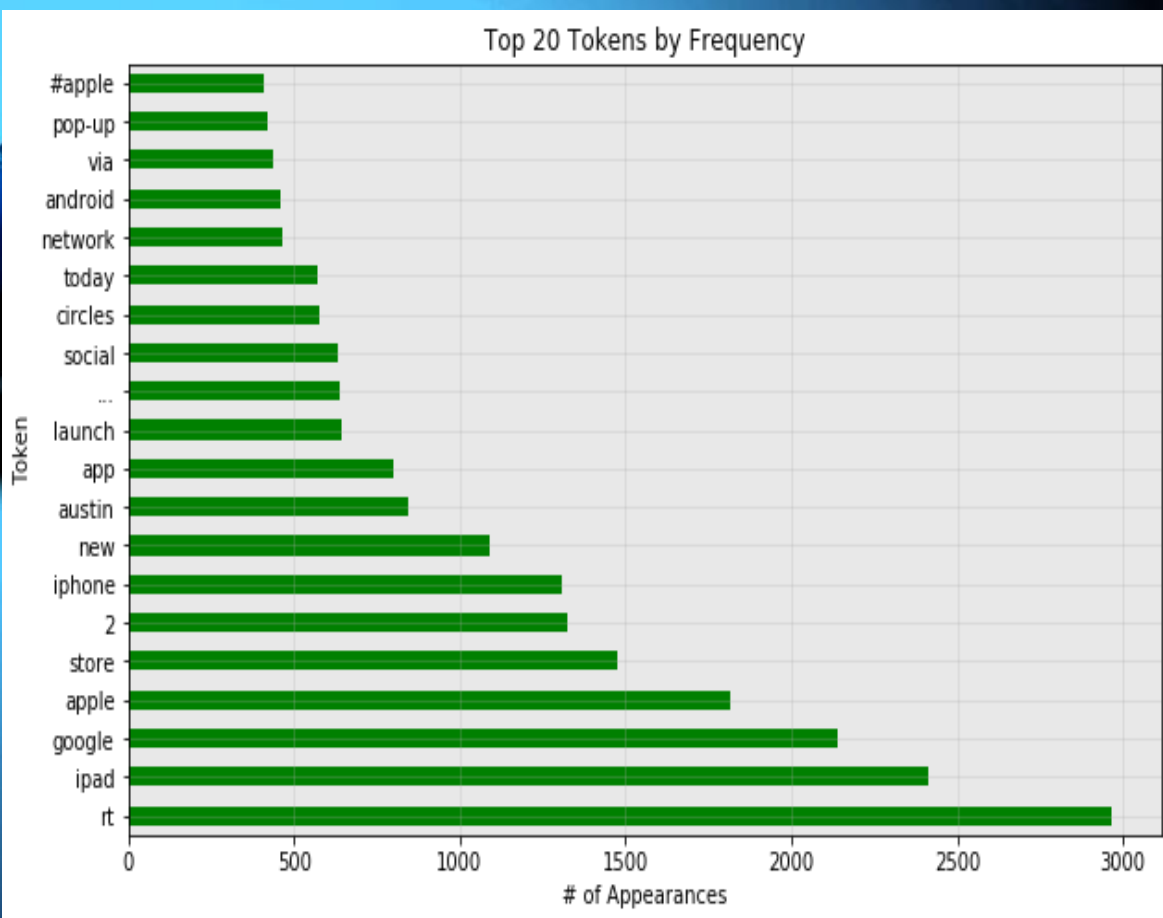


The Dataset

- 'Brands and Product Emotions'
 - Data.world via Crowdfunder
- Asked if the tweet expressed emotion:
 - Towards a brand and/or product
 - What kind of emotion?
- Over 9,000 tweets
 - ~60% were neutral

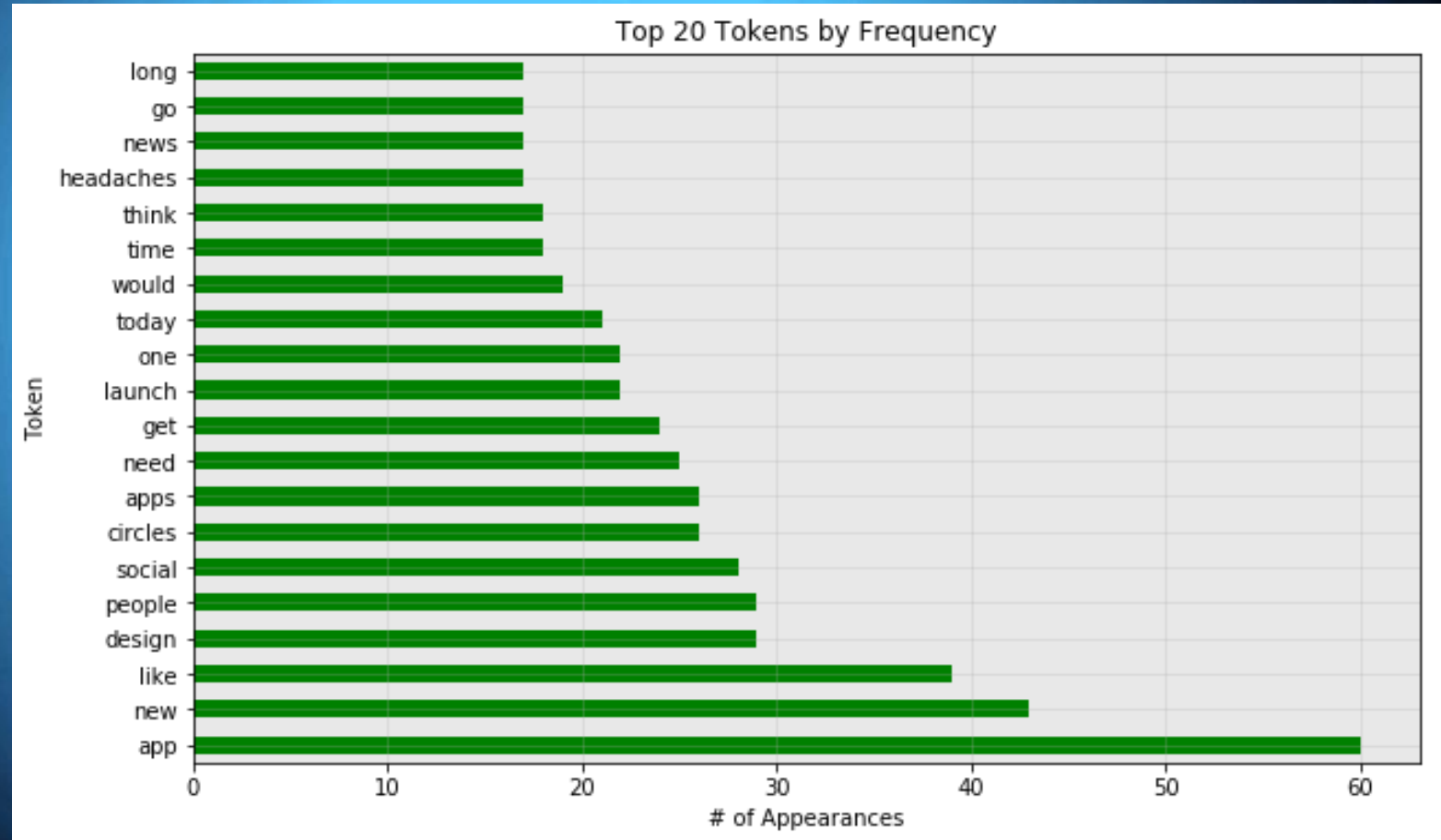


- Entire Dataset:



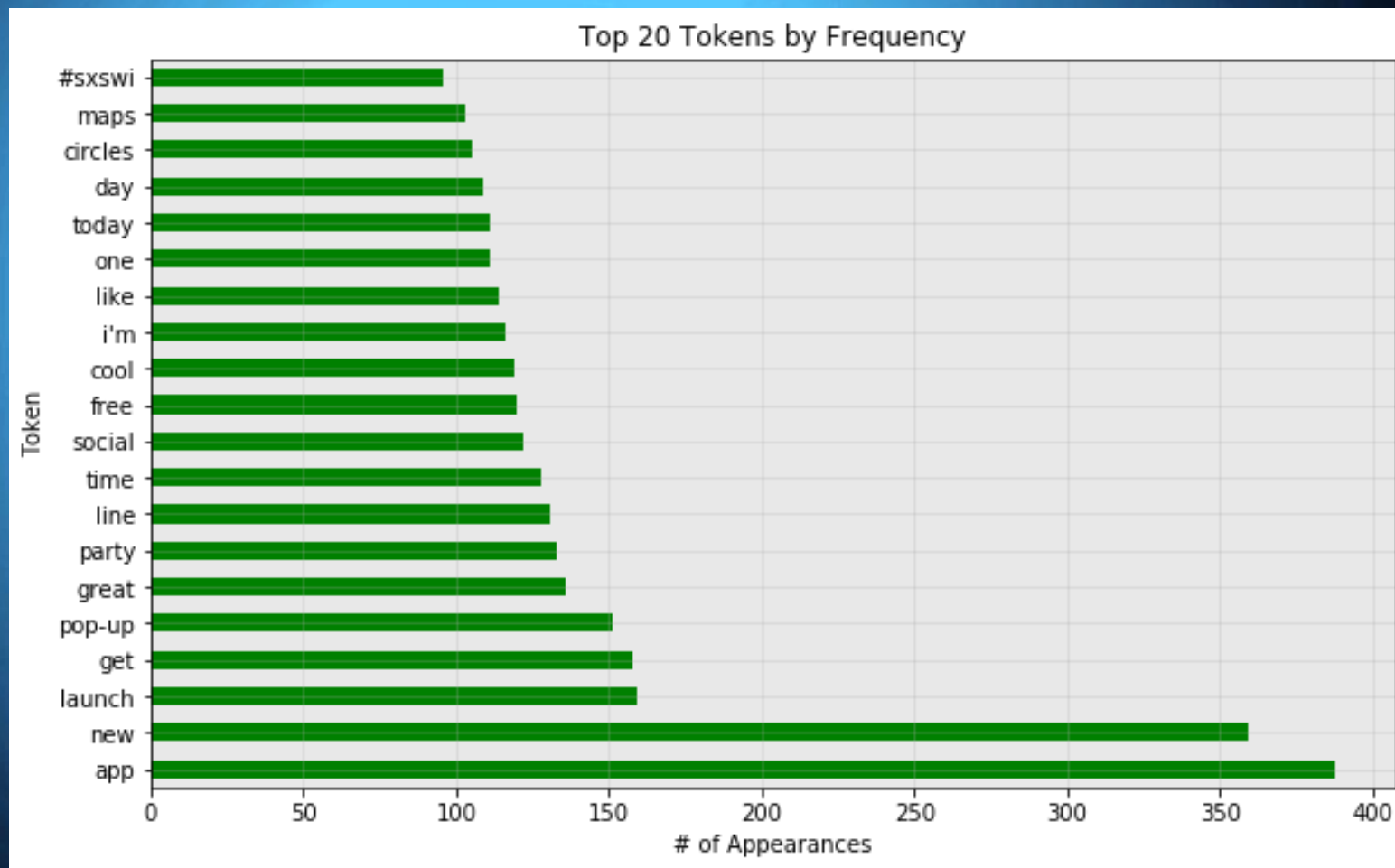
The Dataset - Explored

- Negative Tweets:



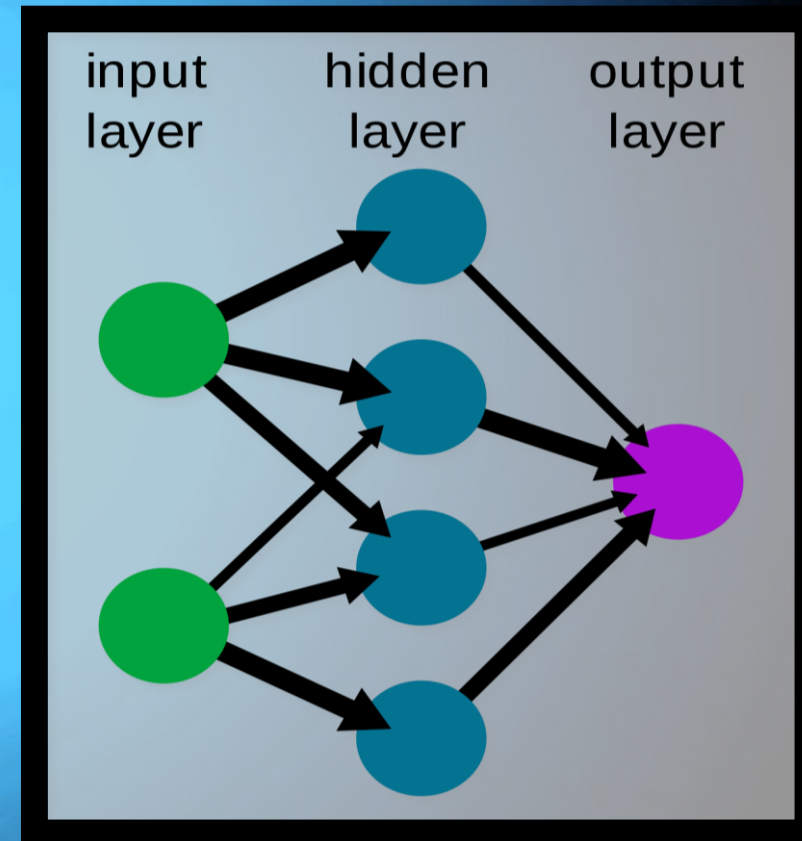
The Dataset - Explored

- Positive Tweets:



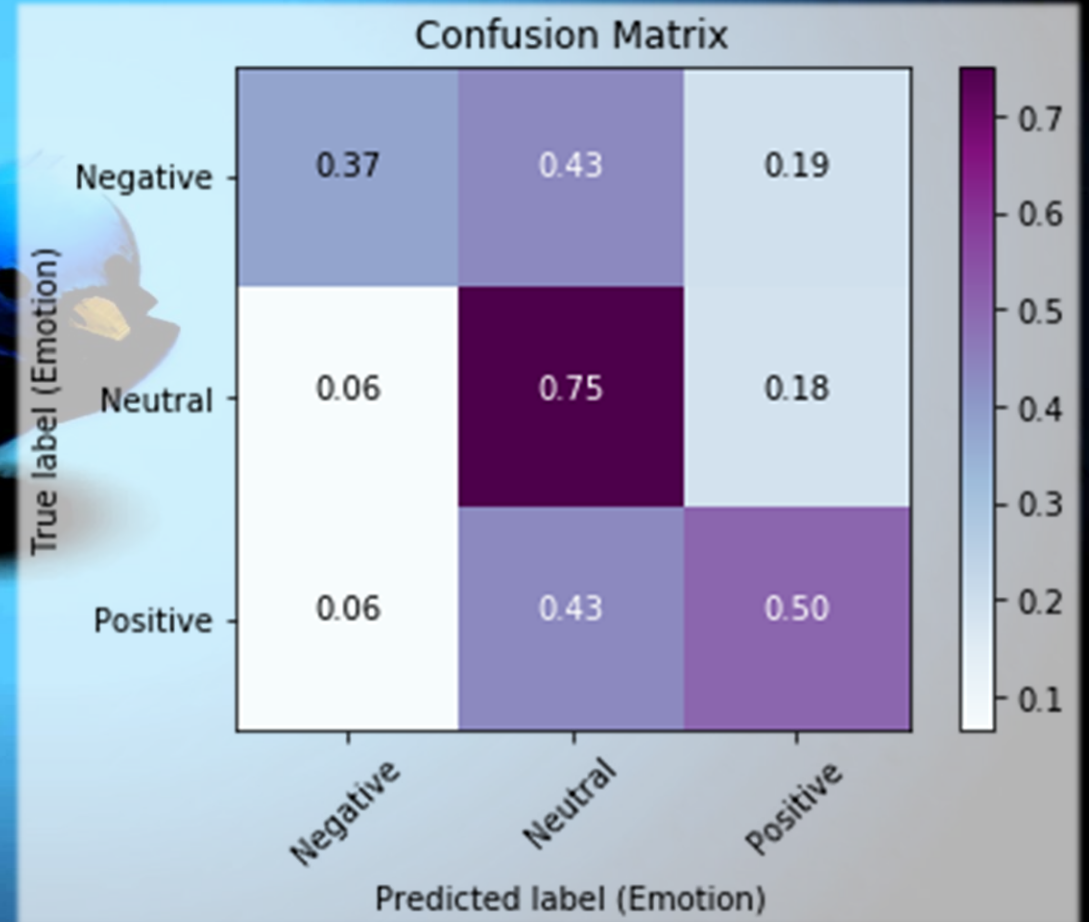
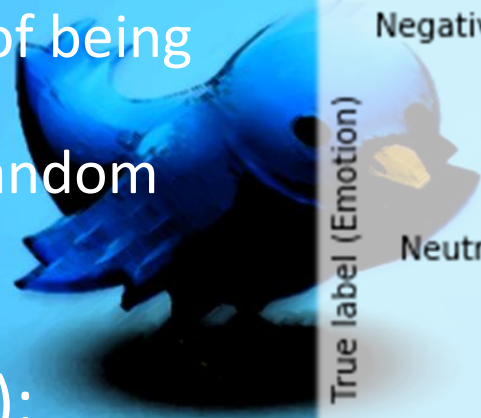
The Tools

- Deep Learning with Natural Language Processing
 - Model 'learns' from 'reading' inputs
 - Make predictions
- Keras/Tensorflow from Google
 - Cutting-edge modeling
 - More common for these tasks



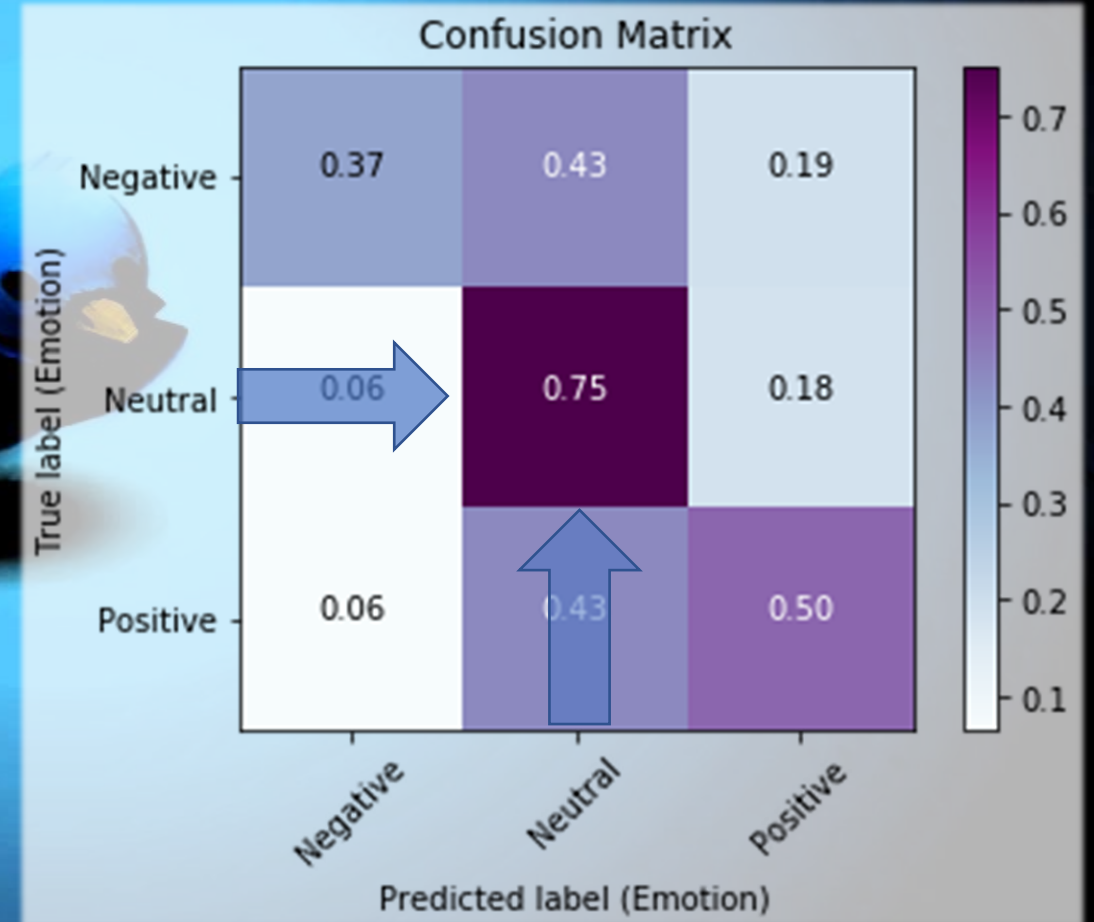
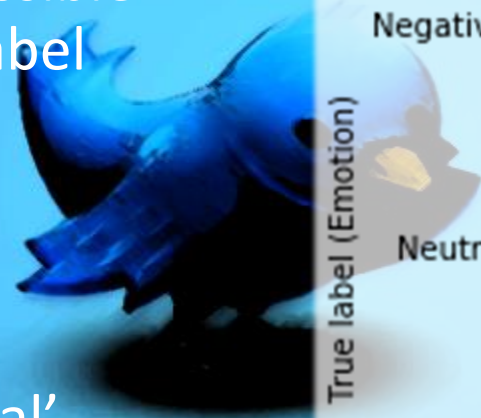
Results pt. 1

- Final model achieved 65% overall accuracy
 - Any predictions likelihood of being correct
 - Considerably better than random chance (33%)
- Intra-class accuracy (recall):
 - Negative = 37%
 - Neutral = 75%
 - Positive = 50%



Results pt. 2

- Each cell:
 - The corresponding % of possible predictions made for this label
 - Each row totals to 100%
- Ex:
 - 75% of the available 'Neutral' tweets were correctly predicted to be so



Recommendations

- This model is best used in a binary sense
 - It can be used to help filter 'Neutral' tweets
 - At the cost of 43% loss of non-neutral tweets (per class)
 - The rest is likely non-neutral
 - Can help sift through large amounts of tweets before humans
 - With 75% intra-class accuracy, can have humans look over rest
- People care about time and money
 - Free is better!
 - Time is money



Future Works

- More Data!
 - More to train with, more learning (generally)
- More time with different Neural Network architectures
 - Unlimited amount of combinations available
- Standard Machine Learning methods
 - Classifier such as RandomForest or Logistic Regression





Thank You!