Getting Ahead of the Market

One Tweet at a Time

Business Context

Stakeholder:

- The **regular investor** has been using Bloomberg, etc. for stock news
    - Issue: time and herd
- Looking to get an edge on most investors but are having trouble finding out how
    - Twitter financial buzz
- Trouble deciphering whether the tweets are neutral, bullish or bearish
    - Helpful to know what to buy, sell, short, or keep an eye on for future investments
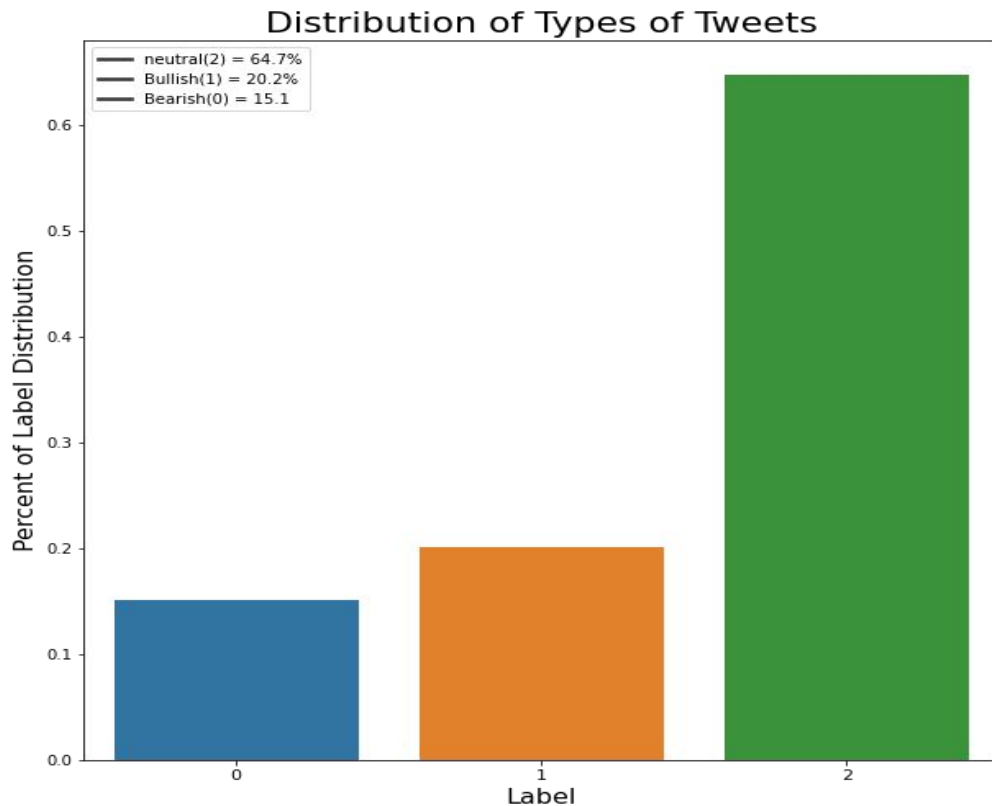
Value:

- Use a natural language processor to identify what types of tweets
    - stocks rising
    - stocks plummeting
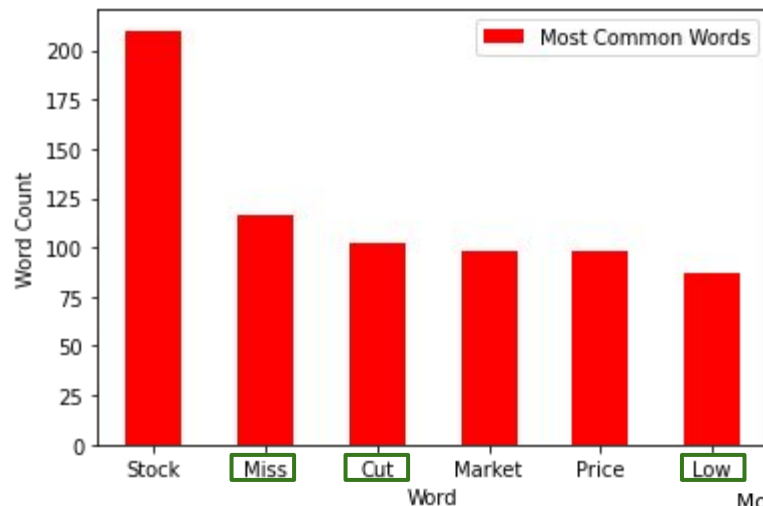   - General information on a company, market or stock

Data Understanding

- Twitter financial news dataset from Hugging Face

- 12,000 rows of data

- This dataset is used to classify finance-related tweets for their sentiment

- The data contains two columns; a text column that contains the tweet text and a corresponding label column with a sentiment.
    - Sentiments
        - Label 0: Bearish
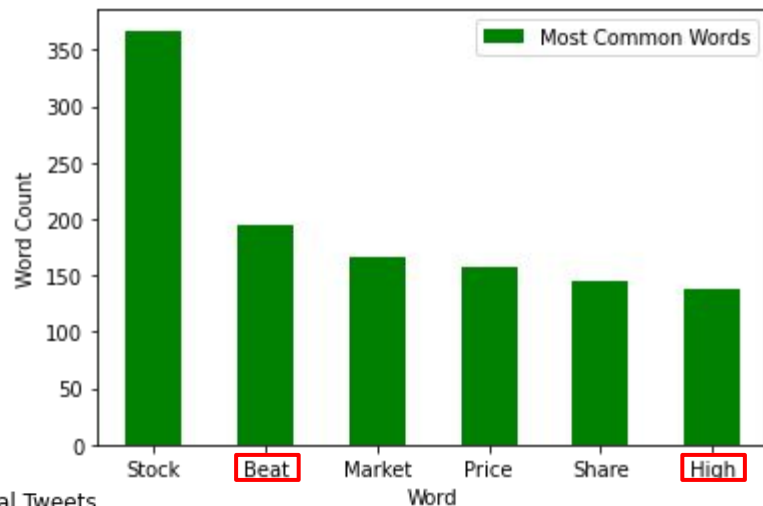   - Label 1: Bullish
        - Label 2: Neutral

EDA/Data Prep

Distribution of Types of Tweets

Legend:
- neutral(2) = 64.7%
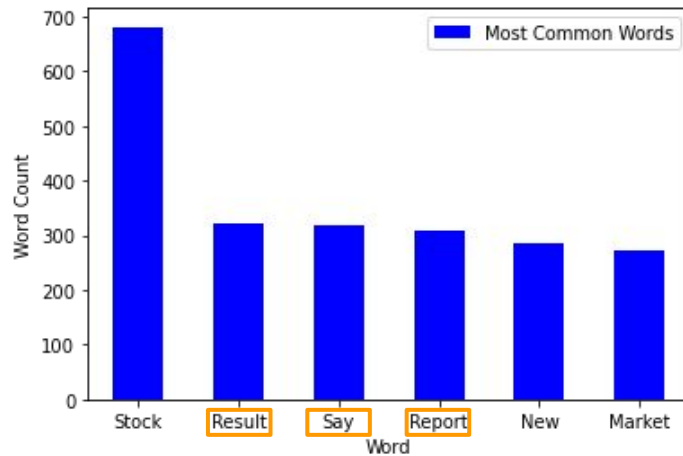- Bullish(1) = 20.2%
- Bearish(0) = 15.1

Most Common Words in Bearish Tweets

Most Common Words in Bullish Tweets

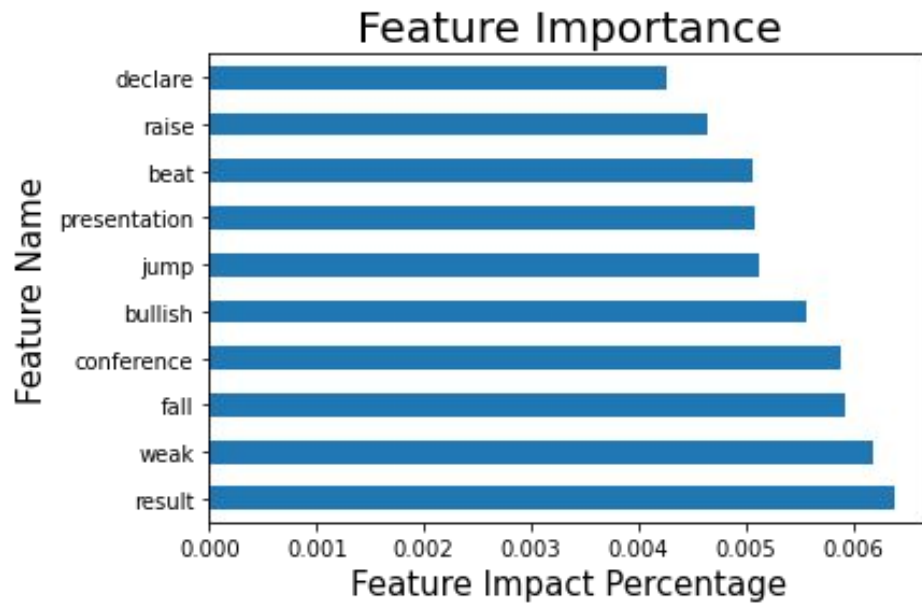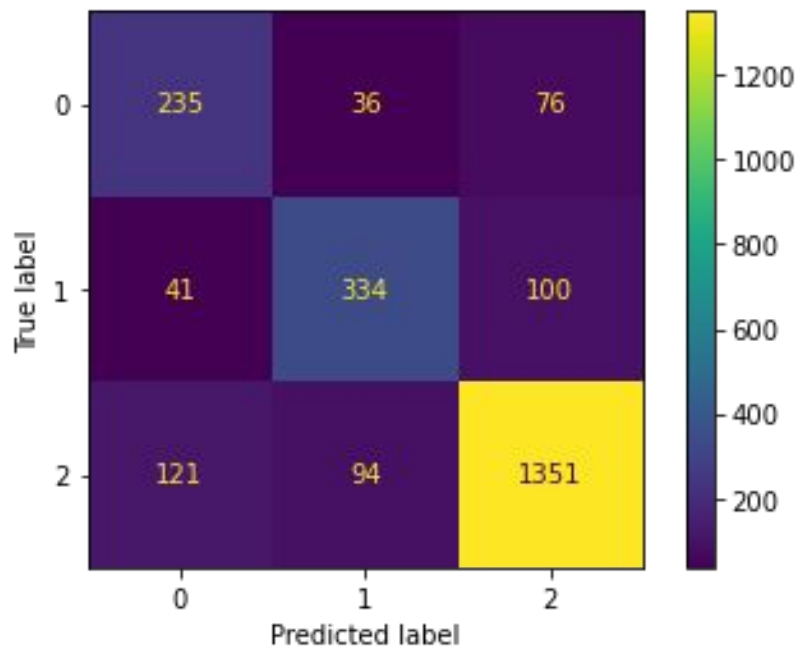Most Common Words in Neutral Tweets

Machine Learning Model

- Tested several different models for optimal scores

- Best model was the XGBoost Classifier

Results/Metrics

- F1_weighted score of 81%

Recommendations

1. Focusing on captains of the financial industry. The opinions and recommendations of these influencers can gain insights into market sentiment and potentially follow their trading strategies.
2. Risk management: high amount of bearish sentimental tweets in a stock that you are invested in, set up stop loss orders
3. Day trading: if a company's earnings report is released, analyze the sentiment of tweets related to that event to gauge the market's reaction. This can provide additional insights into short-term price movements and potential trading opportunities.

Questions?