Sarcasm in Social Media

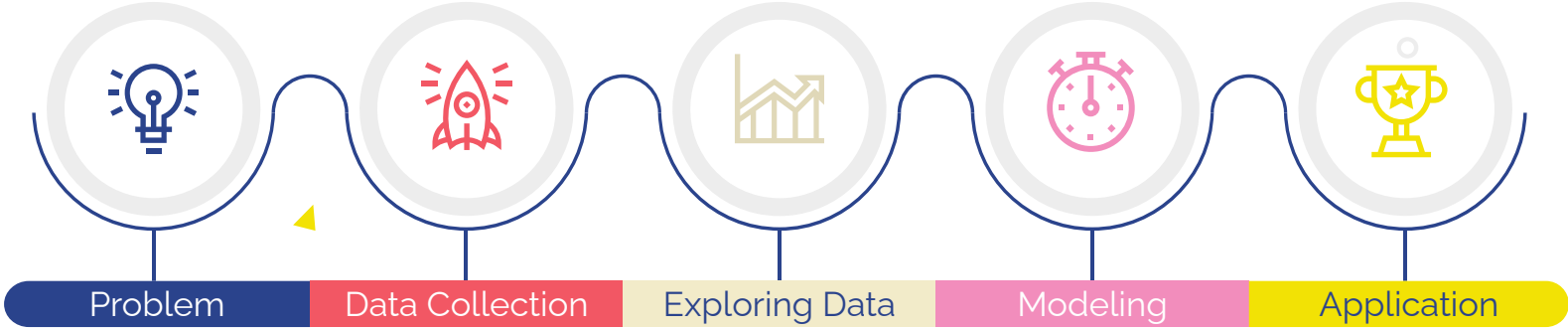
Katharine King

1

Sarcasm refers to the use of words that mean the opposite of what you really want to say, especially in order to insult someone, or to show irritation, or just to be funny.

—that guy Merriam Webster

Contents



Sarcasm affects us all

Who, What, Where….Why

What's in it?

Are you serious?

Well that's helpful.

Problem

Will machine learning be able to detect sarcasm in Tweets posted on Twitter without the full conversation's context?

Data Collection

Dataset 1

- Tweet IDs of responses and context
- .8/.2 target split

Dataset 2

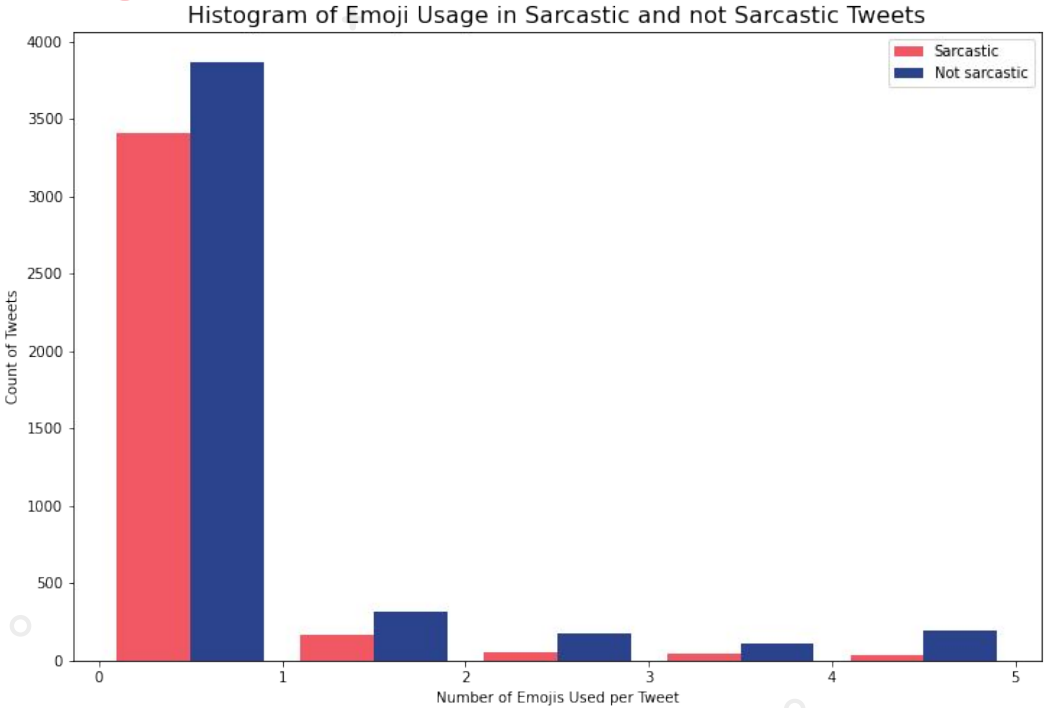
- Text of Tweets with responses and context
- .5/.5 target split

Combined Dataset

- 8300 Tweet texts using only responses
- 57% not sarcastic

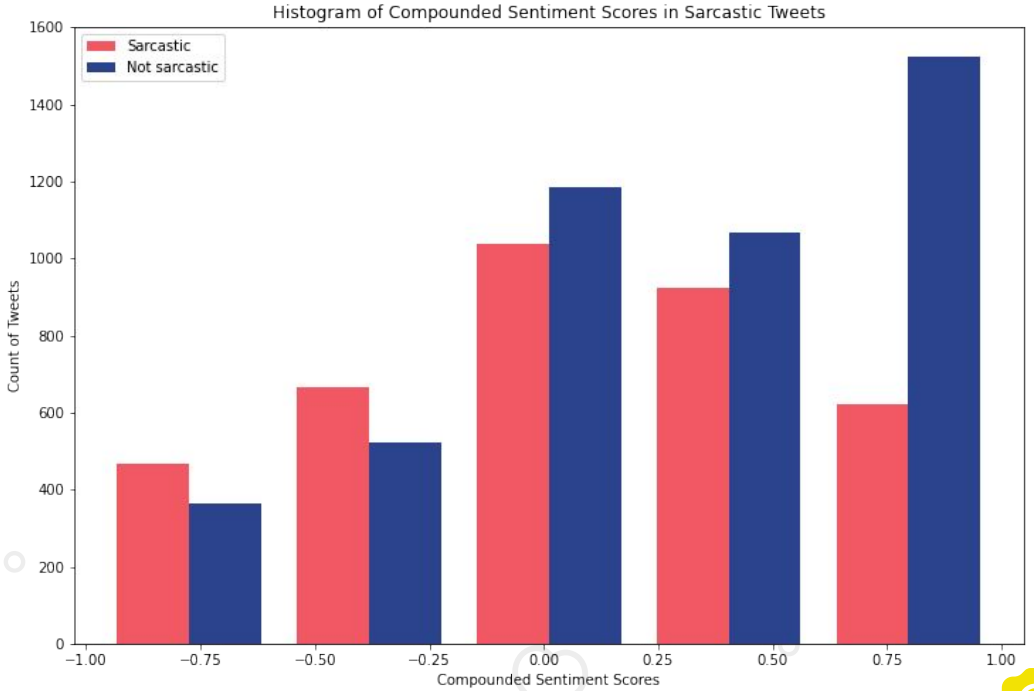
Data Exploration

Emoji Usage



- 2500 emoji's used, 330 unique
- 😂 most common emoji among all tweets
- 🙄 second most common in sarcastic tweets
- 87% did not include any emojis

Sentiment Analysis



- Sentiment analysis typically confounded by sarcasm
- Compounded sentiment between the two types of Tweets differ

Modeling

Baseline accuracy = 57%

	Accuracy	F1 Score	Sensitivity
Multinomial Naive Bayes w/ TfidfVectorizer	69%	0.67	70%
Support Vector Classifier w/ TfidfVectorizer	71%	0.65	62%
Multinomial Naive Bayes w/ CountVectorizer	68%	0.66	69%

App

Future Directions

- Incorporate sentiment analysis (and other numeric features) into the modeling
- Potentially expand application to include prior Tweet context
- Add additional data pulled from Twitter about other topics and/or from another social media site

1

Katharine King, Data Scientist with General Assembly
krking16@gmail.com
Project Repository
LinkedIn

Resources

Datasets:

- Abercrombie, Gavin (2018), “Corpus of Sarcasm in Twitter Conversations”, Mendeley Data, V1, doi: 10.17632/fn2mmff85g.1
- Ghosh, S. (2020). A Report on the 2020 Sarcasm Detection Shared Task. In Proceedings of the Second Workshop on Figurative Language Processing (pp. 1–11). Association for Computational Linguistics.

Other Resources:

- Riloff, R. (2013). Sarcasm as Contrast between a Positive Sentiment and Negative Situation. In Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing (pp. 704–714). Association for Computational Linguistics.

Thanks

Do you have any questions?
your-email@freepik.com
+91 620 421 838
yourcompany.com