Setup

- I am a data science consultant
- You all are Reddit decision makers.

- The issue is that there are a lot of bots on reddit.

- This is a quick proof of concept presentation to convince them that the problem is important. And that I can help fix it

Reddit ChatGPT Bot Detection

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ChatGPT

- November 30 2022
- Generative Pre-Trained Transformer
- Conversational style
- Openai library for developers and malcontents

Why is it bad for reddit

- Advertiser Fear
- $

My planned solution

- Build a robust model that can accurately classify human users and bots, while also preventing misclassification of humans as bots
  - Utilize comment content (NLP)
  - Utilize user behavior (Post frequency/Comment Frequency)
- What I Need
  - Data Partnership: Comprehensive, labeled data
  - Technical Synergy: Seamless Integration
  - User Input: Dynamic User Feedback

Rapid Prototyping

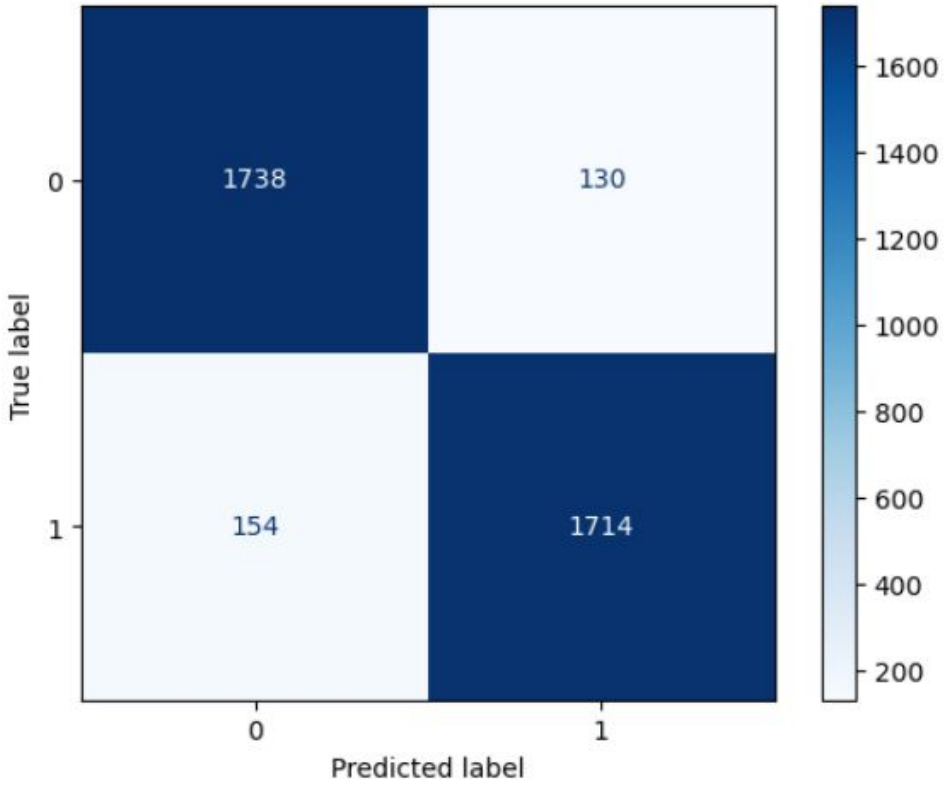
- I experimented with 3 different models and did some rigorous hyperparameter tuning
- Logistic Regression
- MNB
- BNB

SENSITIVITY

It’s important

Logistic Regression (with Ridge regularization)

- Train: 93.4%
- Test: 91.6%
- Sensitivity: 90.6%



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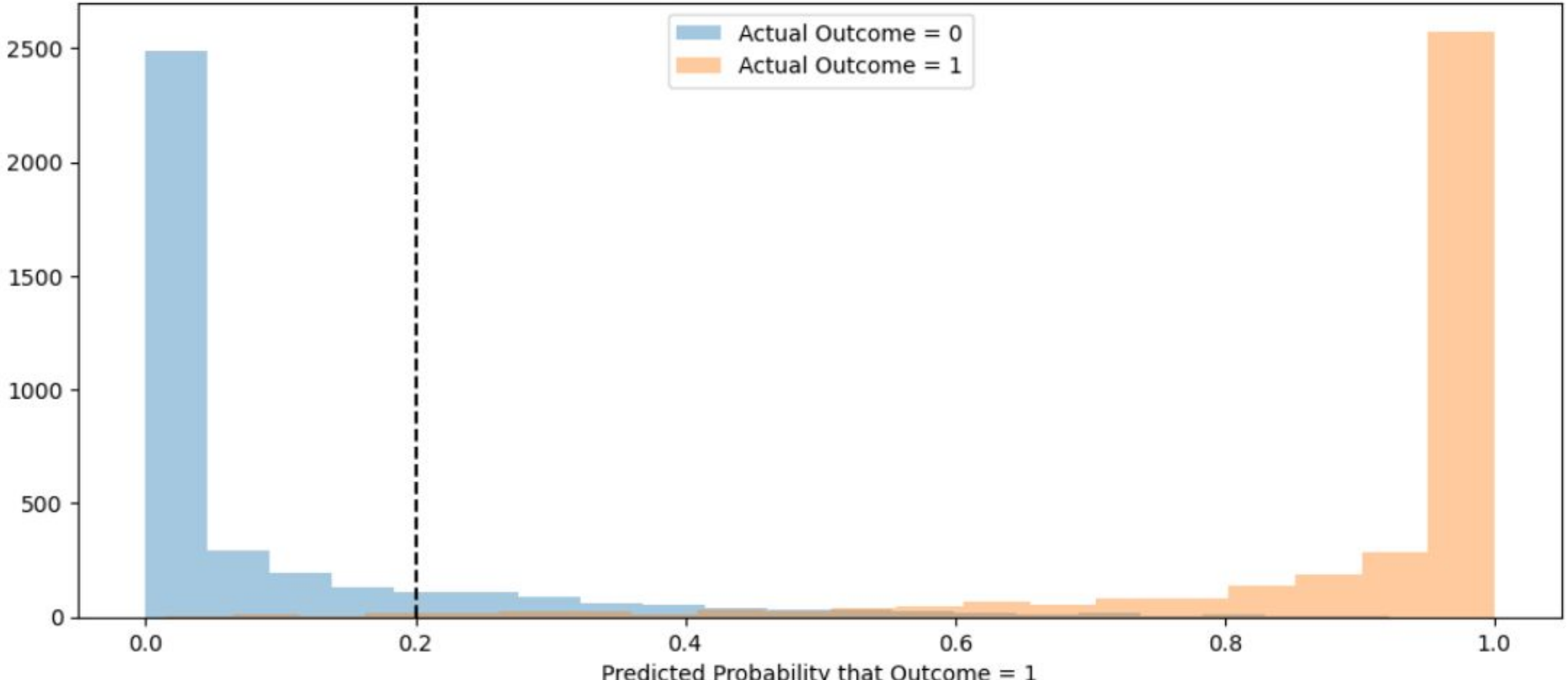
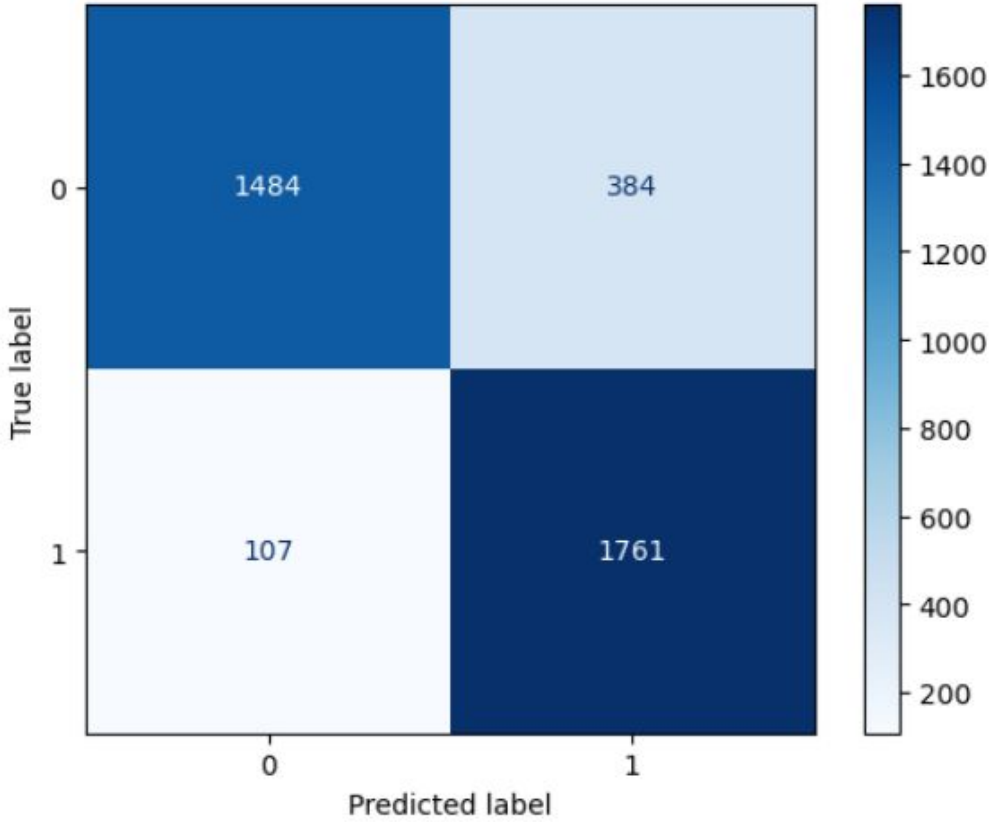
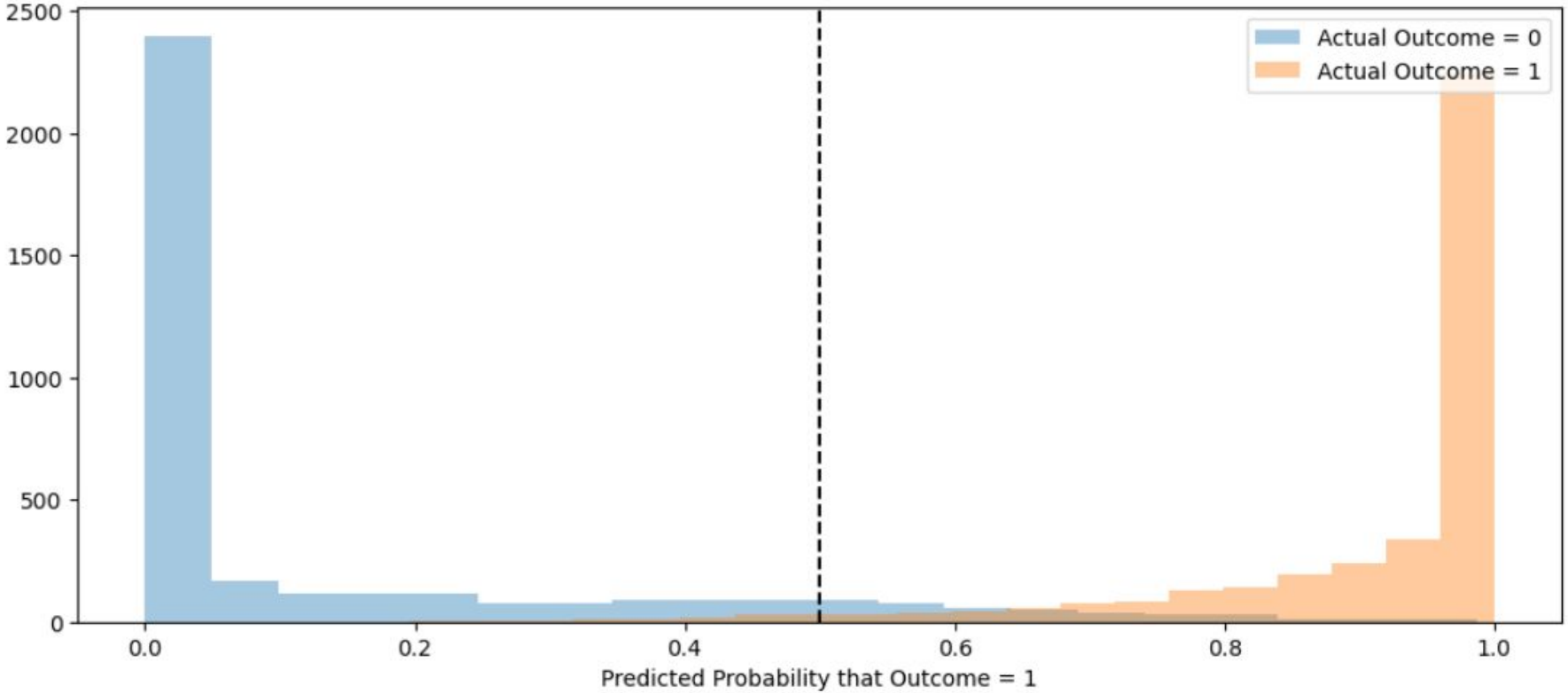


Multinomial Naive Bayes

- Train: 88%
- Test: 87%
- Sensitivity: 94.3%

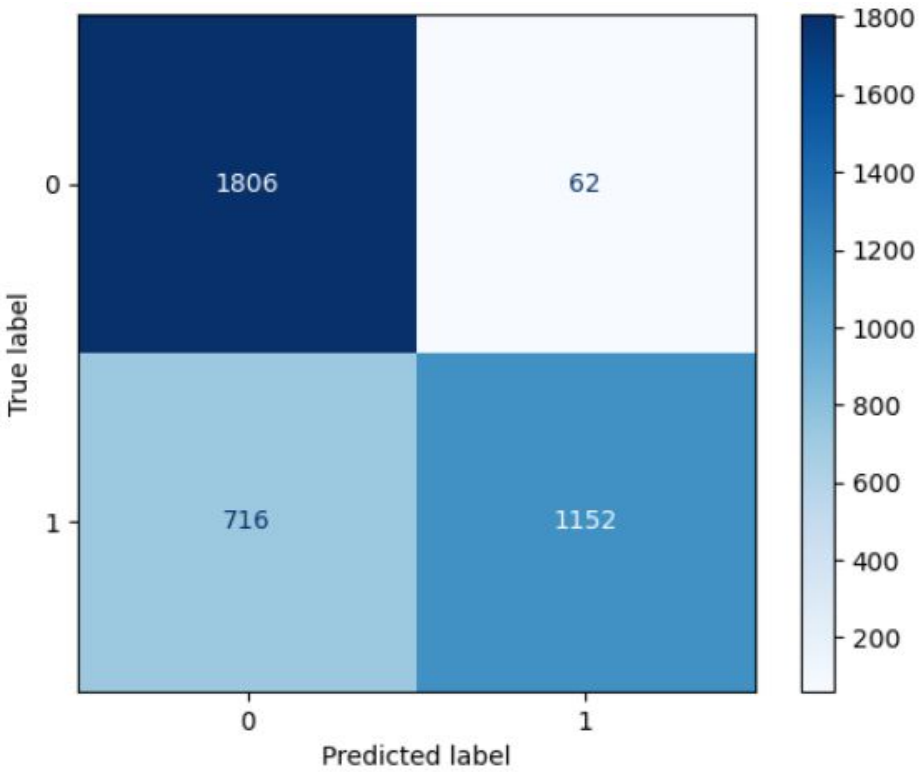


Multinomial Naive Bayes



Bernoulli NB

- Train: 78.2%
- Test: 79.2%
- Sensitivity: 61.7%



Conclusions

- Best of My Models:
  - MNB with stemming. Highest sensitivity 94.2%
- How to make it better
  - More Data (More features)
  - Improved Deployment
  - User Input

Future Exploration (meta)

- Marie vs Leo
- Subreddit by subreddit exploration
- Deployment using Streamlit
- Utilizing other APIs to get more than just reddit data

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