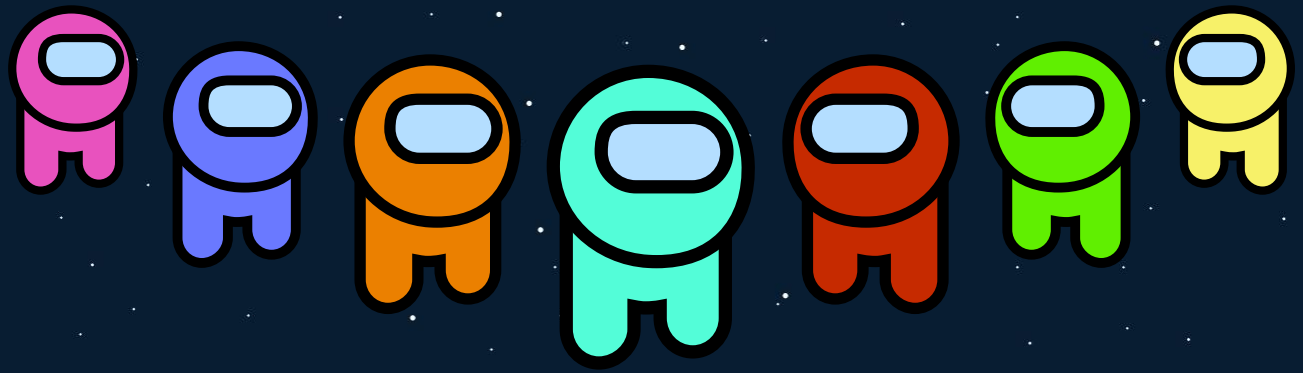
Among Us: Competitive vs. Memes

There is 1 Impostor among us

By Gabrielle Clavell



Overview of this project

1. Problem Statement

A description of this project.

2. Among Us

What is Among Us?

3. Data

What subreddits were used and how was data was gathered?

4. EDA

What was found in the data? What was interesting?

5. Modeling and Predictions

What models were used, which one performed the best, and why? A demo in predicting phrases/sentences using the best model.

6. Conclusion

What was learned from this project? What are other ways to approach this project?

Problem statement

Through Natural Language Processing, people can give computers to understand text and spoken words. This project is aimed to using Push's API and getting data from two subreddits, AmongUsCompetitive and AmongUsMemes, to effectively predict which subreddit the title came from and predicting new titles.

How to Play?

Step 1

Players join in groups of 10 or 15 players

Step 2

If you're a Crewmate, complete the tasks

Step 3

If you are the Impostor, kill everybody

Step 4

Vote off other players if you think is The Impostor

Step 5

Discuss who is the impostor on emergency meetings

Among Us

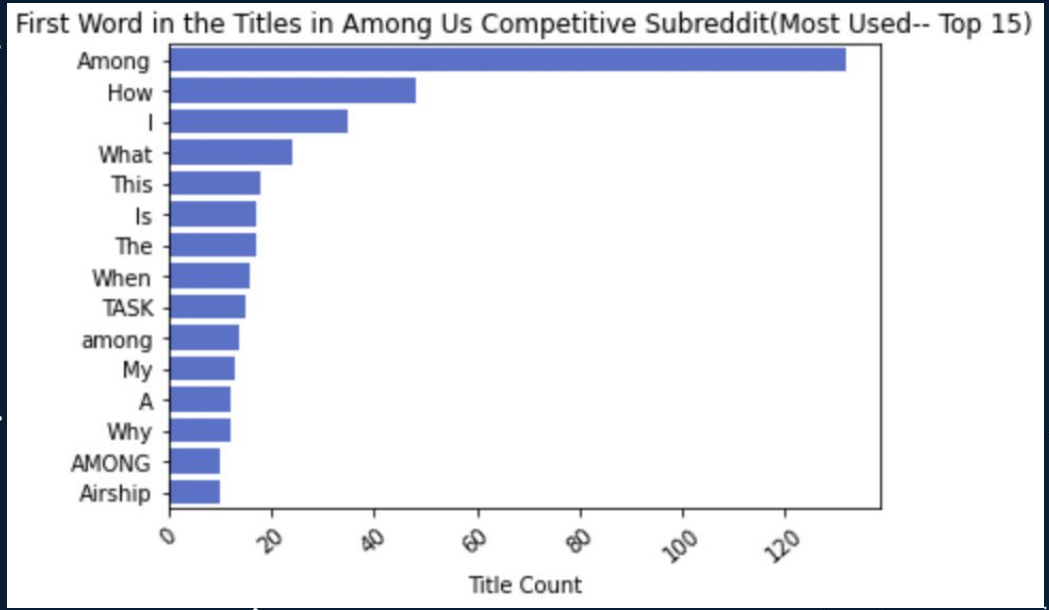

Custom Settings
Map: The Skeld
Impostors: 2
Confirm Ejects: On
Emergency Meetings: 1
Emergency Cooldown: 15s
Discussion Time: 15s
Voting Time: 60s
Player Speed: 1.75x
Crewmate Vision: 1x
Impostor Vision: 1.75x
Kill Cooldown: 15s
Kill Distance: Short
Visual Tasks: On
Common Tasks: 1
Long Tasks: 1
1234567891
Ninja
Potato
O Ren Ishi
Mor
Ahno
Gibby
MyCombo390
Ping: 109 ms
PUBLIC
Code
CWKBQQ
8/10
USE

Data

- Two subreddits taken from Push's API
- Two subreddits:
  - AmongUsCompetitive
  - AmongUsMemes
- 1,093 rows from 'title' from each
- In total 2,186 rows and two columns -- the subreddit it came from and the title from that subreddit

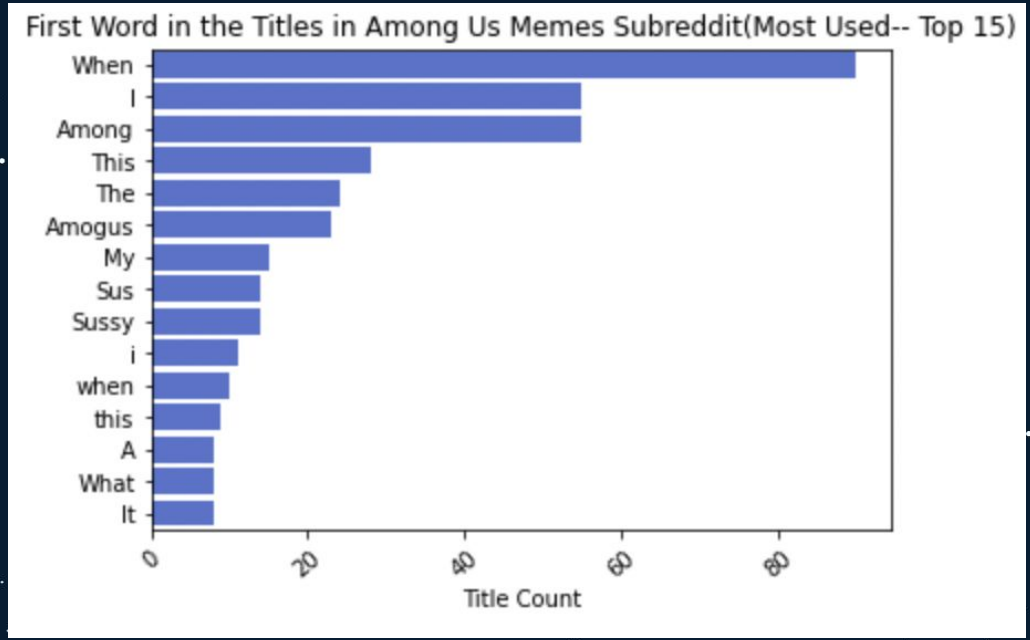
EDA

- First word in Among Us Competitive



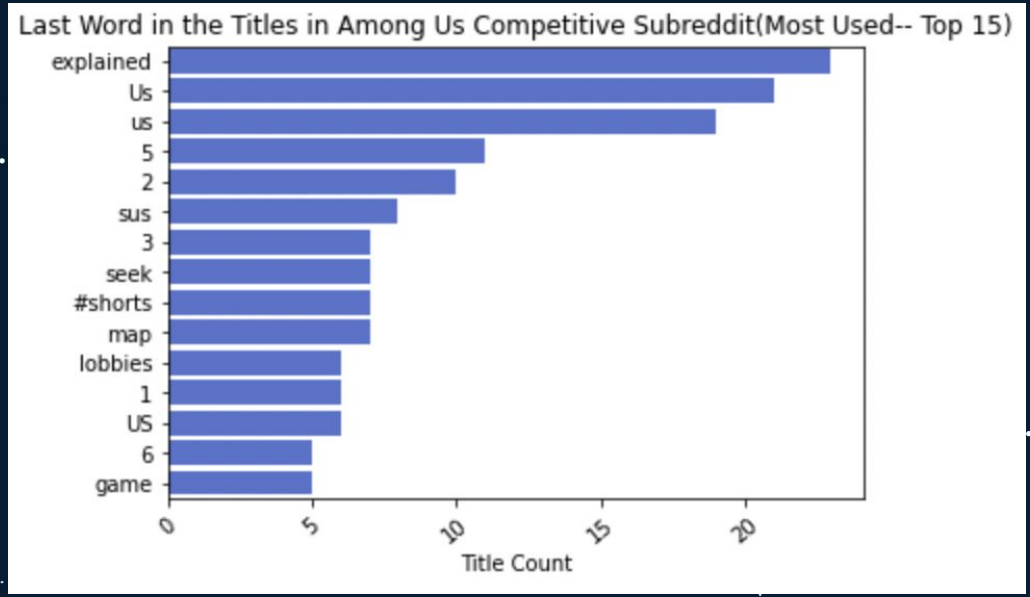
EDA cont.

- First word in Among Us Memes



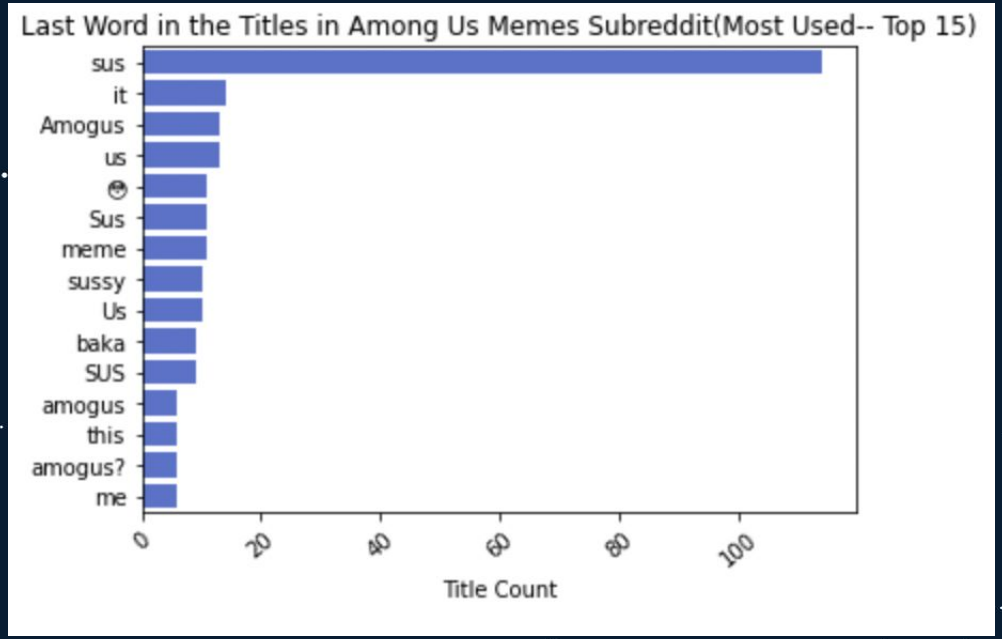
EDA cont.

- Last word in Among Us Competitive



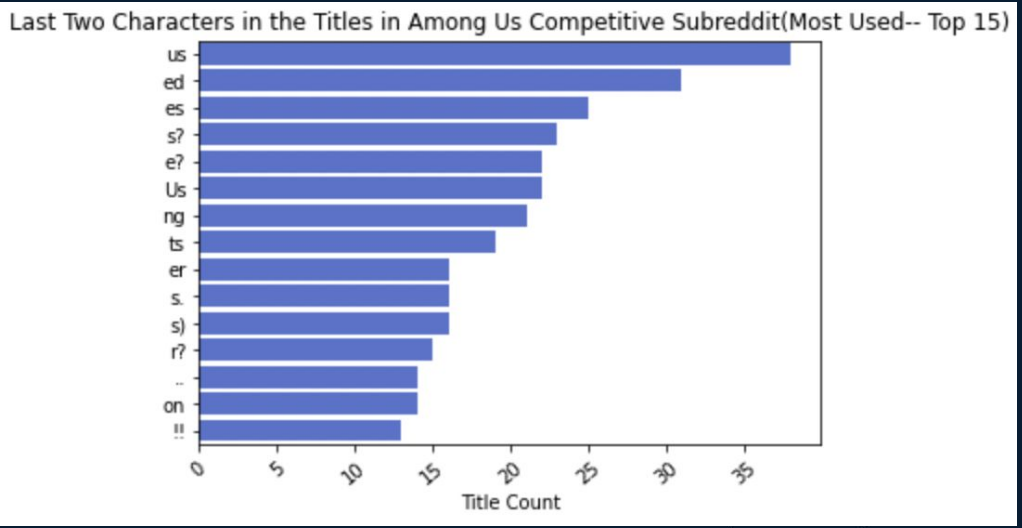
EDA cont.

- Last Word in Among Us Memes



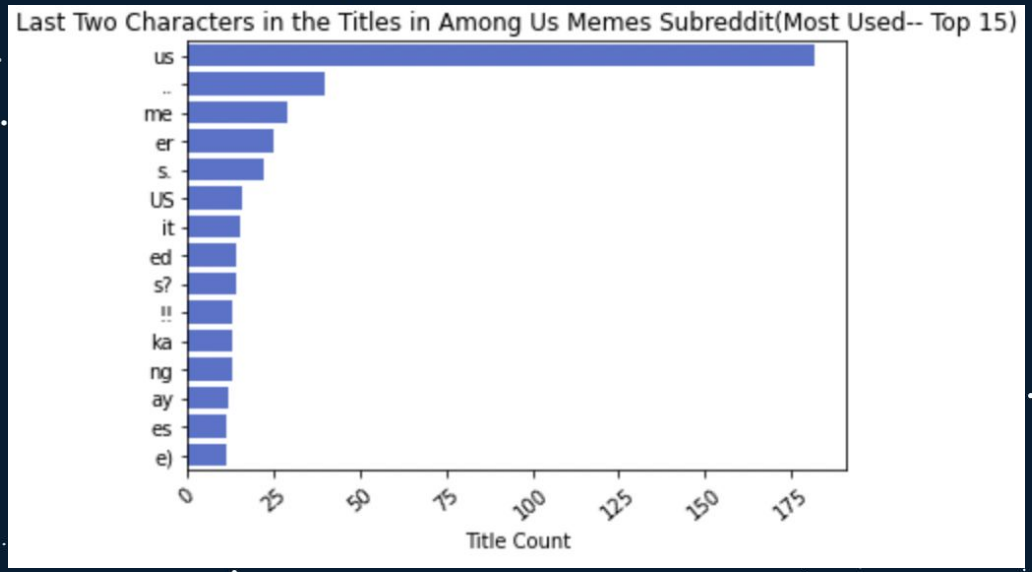
EDA cont.

- Last two characters in Among Us Competitive



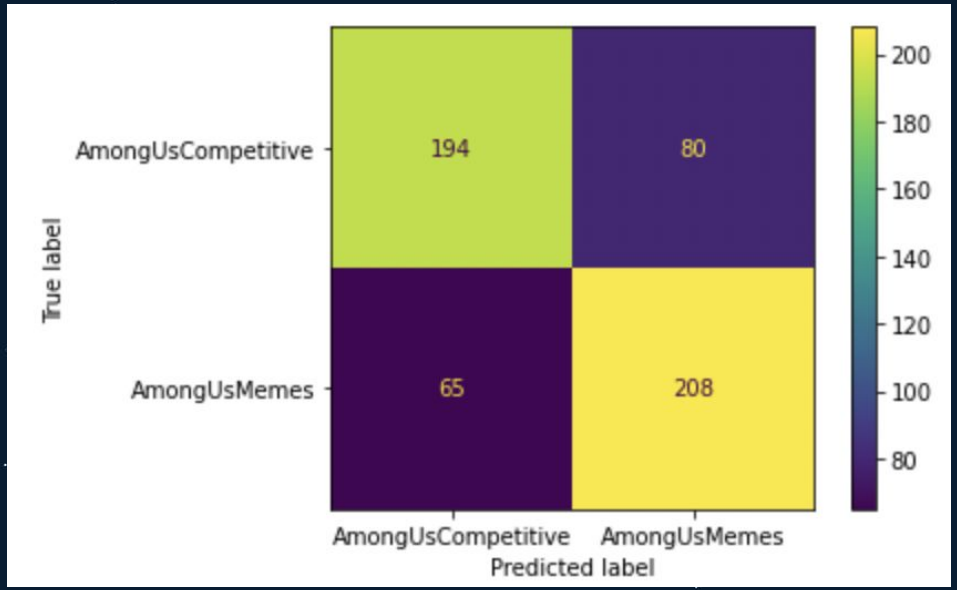
EDA cont.

- Last two characters in Among Us Memes



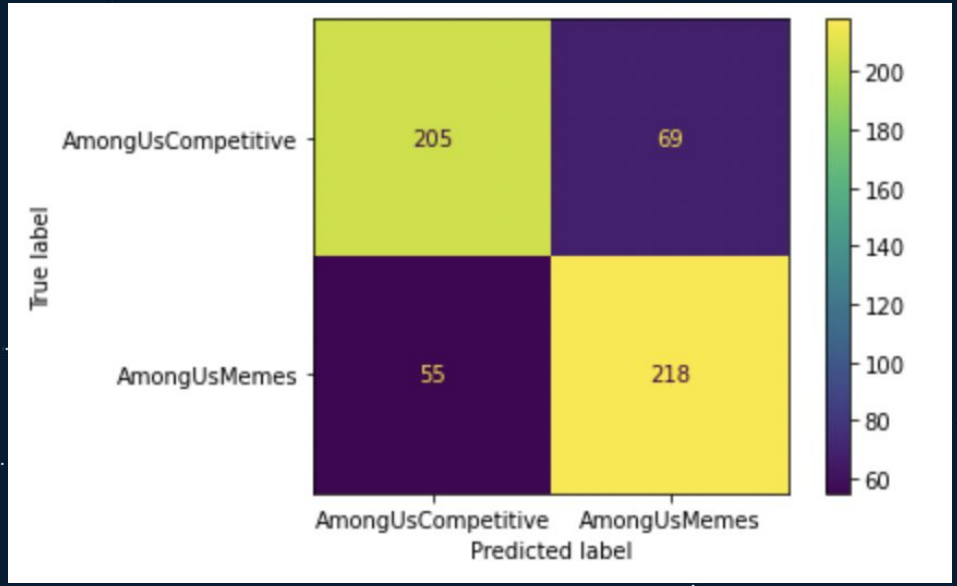
Modeling: Decision Tree model

- Decision Tree:
  - CountVectorizer
  - Best score: 73.2%
- Accuracy:
  - 73%
- Misclassification:
  - 26%
- 145 rows did not match



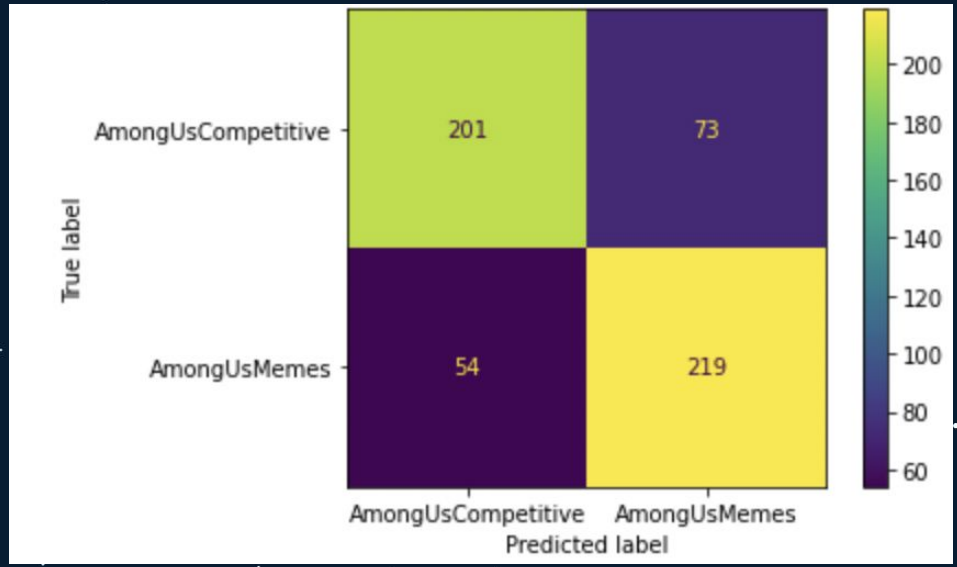
Modeling: Random forest model

- Random Forest:
  - TFIDF Vectorizer
  - Best score: 76.9%
- Accuracy:
  - 77.33%
- Misclassification:
  - 22.67%
- 124 rows did not match



Modeling: Random Forest model cont.

- Random Forest:
  - CountVectorizer
  - Best score: 78.5%
- Accuracy:
  - 76.78%
- Misclassification:
  - 23.22%
- 127 rows did not match



Predictions

On Streamlit

CONCLUSION

- In this project, making a model using natural language processing was more difficult. For the random forest models, both models had difficulty predicting a phrase like ‘need a team’. It would predict AmongUsMemes when expecting AmongUsCompetitive. It seems as though there are random titles in both subreddits that can make predicting certain phrases difficult. In all, the random forest did better job at predicting.

Thanks!






CREDITS: This presentation template was created by **Slidesgo**, including icons by **Flaticon**, infographics & images by **Freepik**

Resources

- https://www.ibm.com/cloud/learn/natural-language-processing#:~:text=Natural%20language%20processing%20(NLP)%20refers,same%20way%20human%20beings%20can.

  https://machinelearningmastery.com/classification-versus-regression-in-machine-learning/

  https://towardsdatascience.com/understanding-random-forest-58381e0602d2

  https://www.geeksforgeeks.org/using-countvectorizer-to-extracting-features-from-text/#:~:text=CountVectorizer%20is%20a%20great%20tool,occurs%20in%20the%20entire%20text.&text=The%20value%20of%20each%20cell,in%20that%20particular%20text%20sample.

  https://www.mvorganizing.org/what-is-tfidfvectorizer/#:~:text=What%20is%20Tfidf%20Vectorizer%3F,across%20a%20set%20of%20documents.