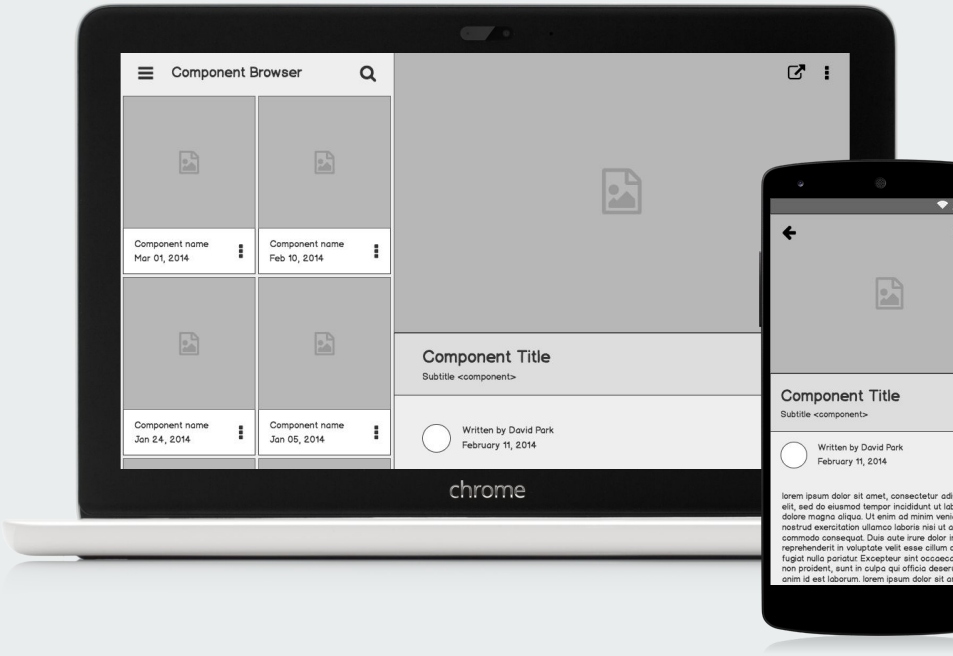
Web Scraping

Aakash Sharma
DSI Program



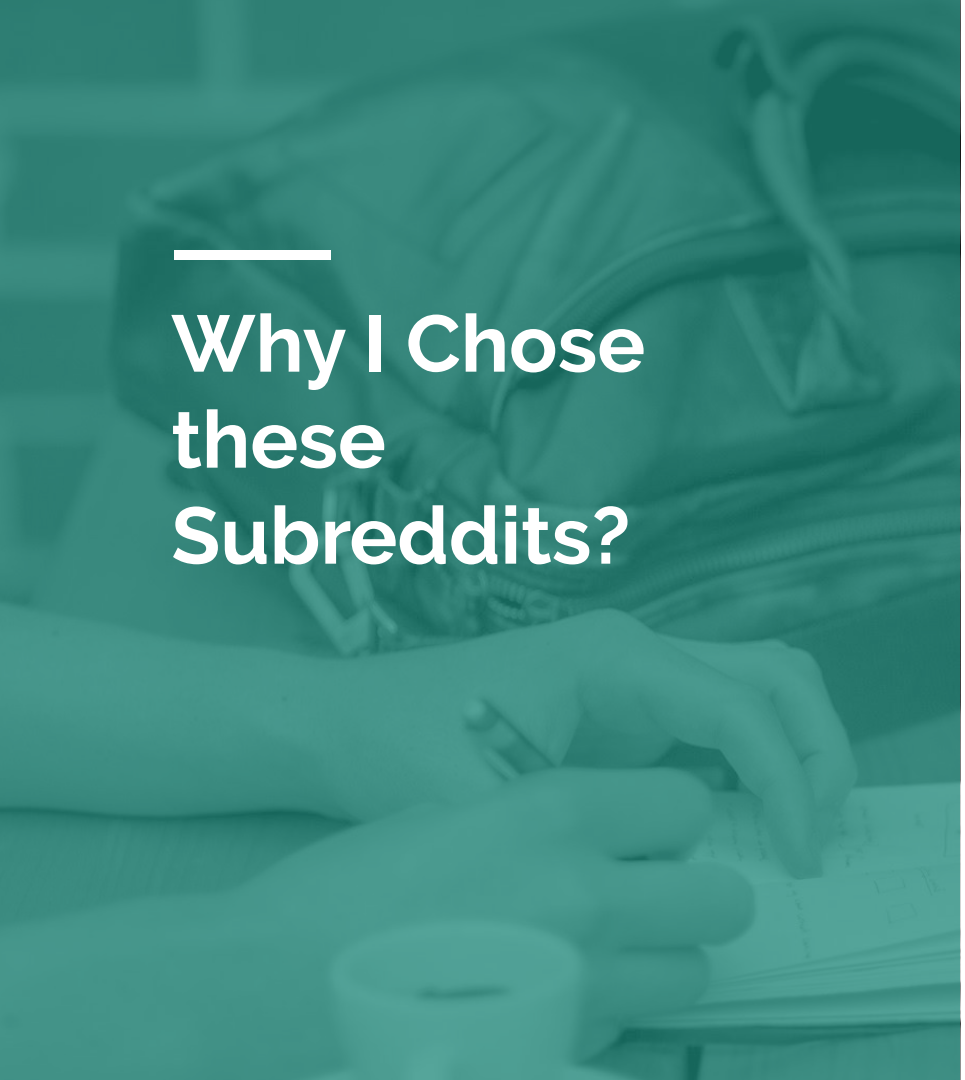
Reddit Itinerary

1. The Problem
2. Project Approach
3. The Model
4. Diagrams
5. Executive Summary

The Problem

Use Reddit's API & collect posts from two subreddits.

Use NLP to train a classifier on which subreddit a given post came from. This is a binary classification problem.

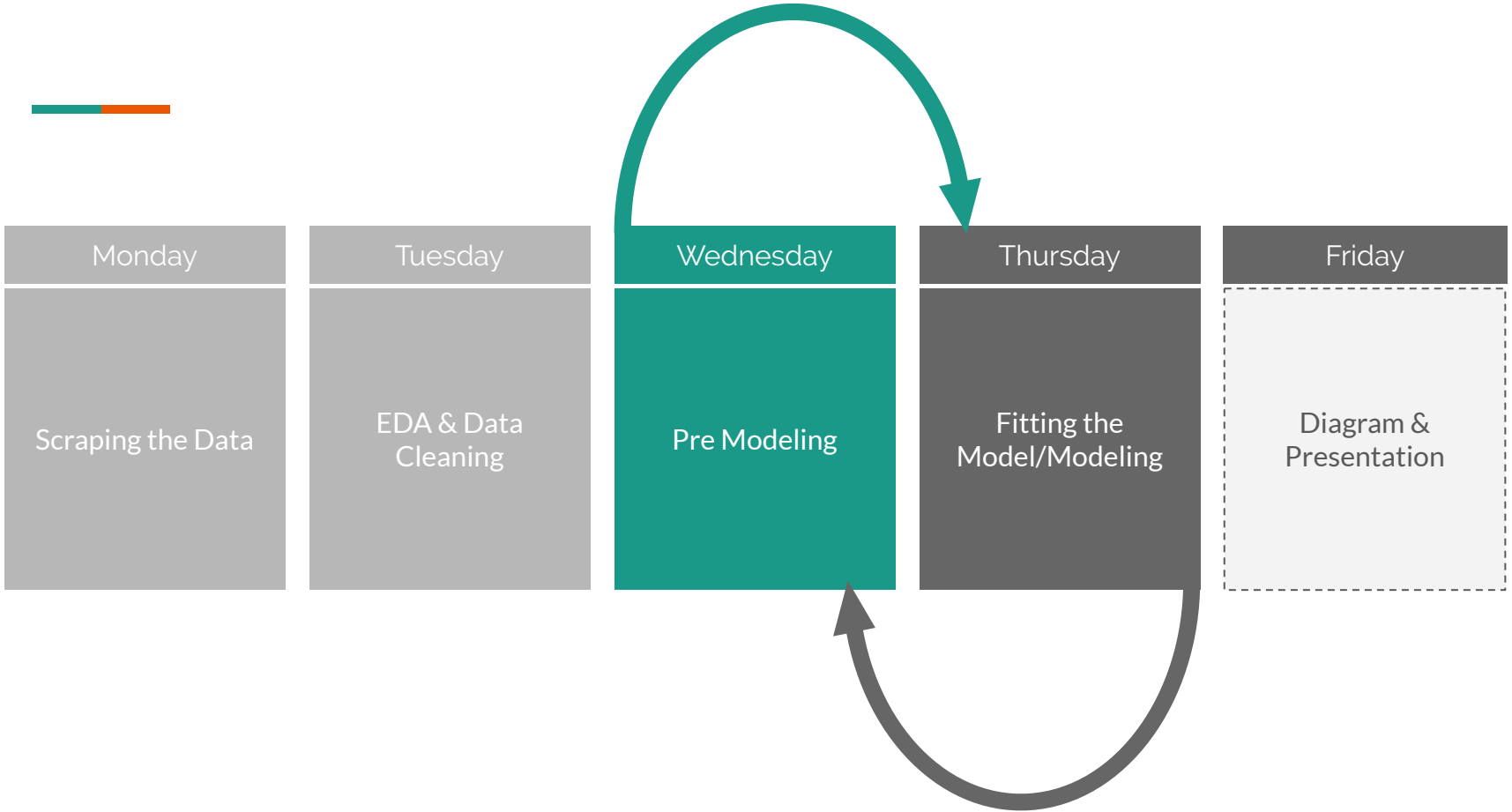


Why I Chose these Subreddits?

Hacking & Cyber Security Subreddits

- Focus around what I specialized in
- Interested me
- Cool project to talk about?

My Approach


Monday
Tuesday
Wednesday
Thursday
Friday
Scraping the Data
EDA & Data Cleaning
Pre Modeling
Fitting the Model/Modeling
Diagram & Presentation

Data Scraping the API's

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https://www.reddit.com/r/hacking/top.json?t=all
https://www.reddit.com/r/hacking/top.json?t=all&after=t3_85mkmm
https://www.reddit.com/r/hacking/top.json?t=all&after=t3_axaz6t
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What I Did & What it Does

Regex: Extracting info from any text by searching for one or more matches of a specific search pattern.

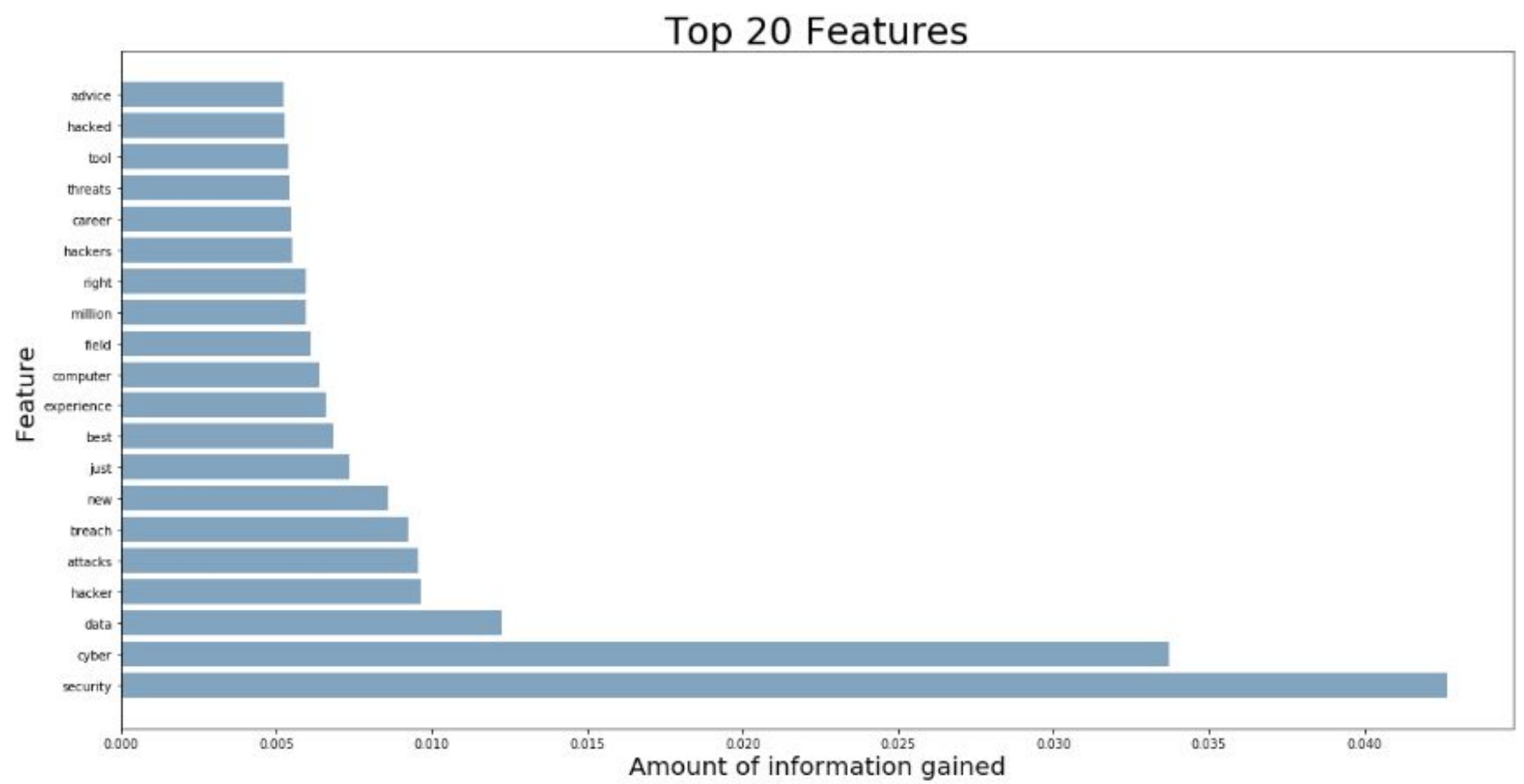
TFIDF: Term frequency/inverse document frequency, is a numerical statistic that shows how important a word is to a document.

Grid Search: Grid search selects the best of a family of models, parametrized by a grid of parameters.

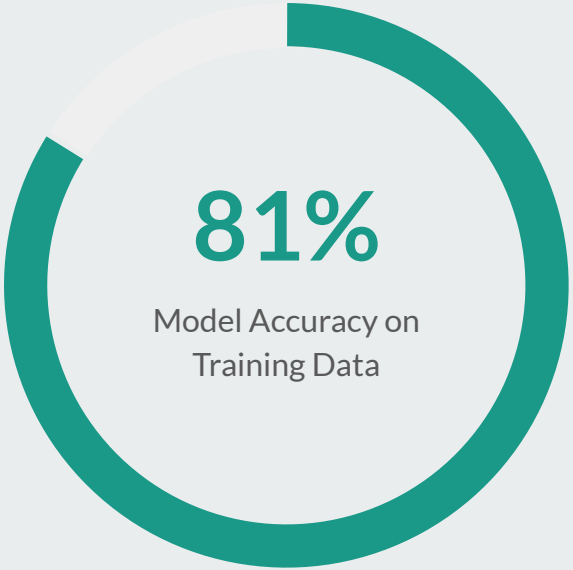
Naive Bayes: Simple, fast, accurate & reliable in calculating the probability of each tag for a given text & output of the tag with the highest one in NLP.

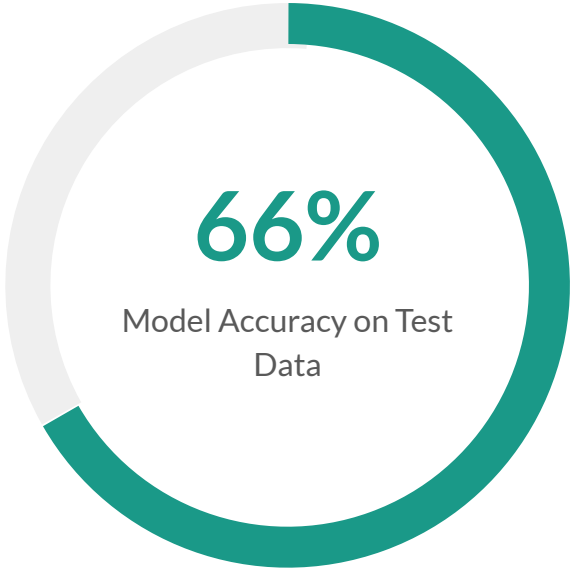
Random Forest: Supervised learning algorithm that creates a forest & makes an ensemble of random decision trees.

Supporting Information

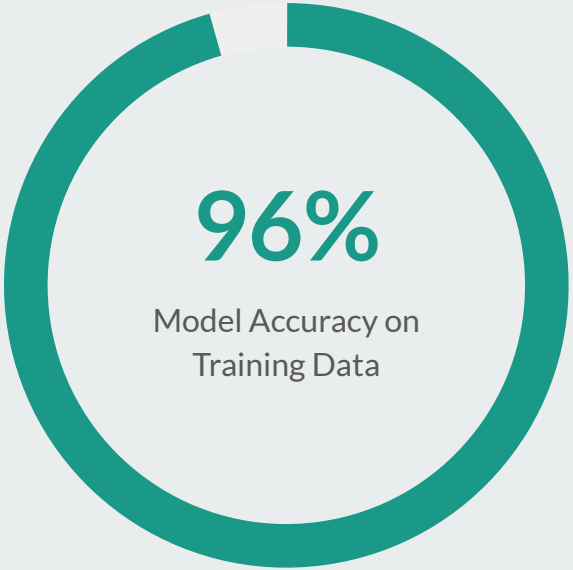


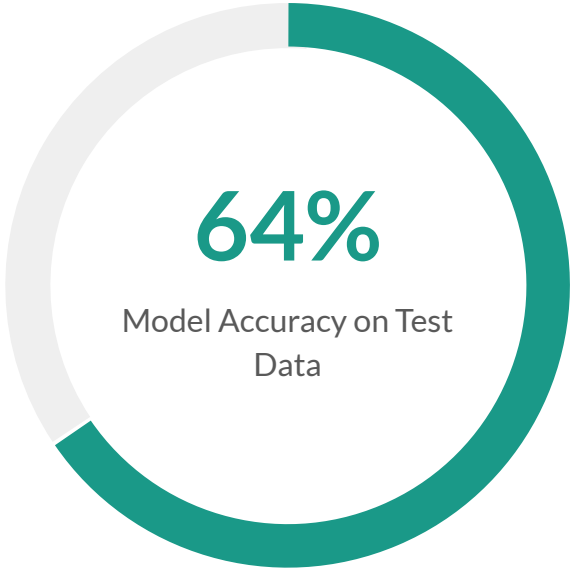
Supporting Information: Naive Bayes



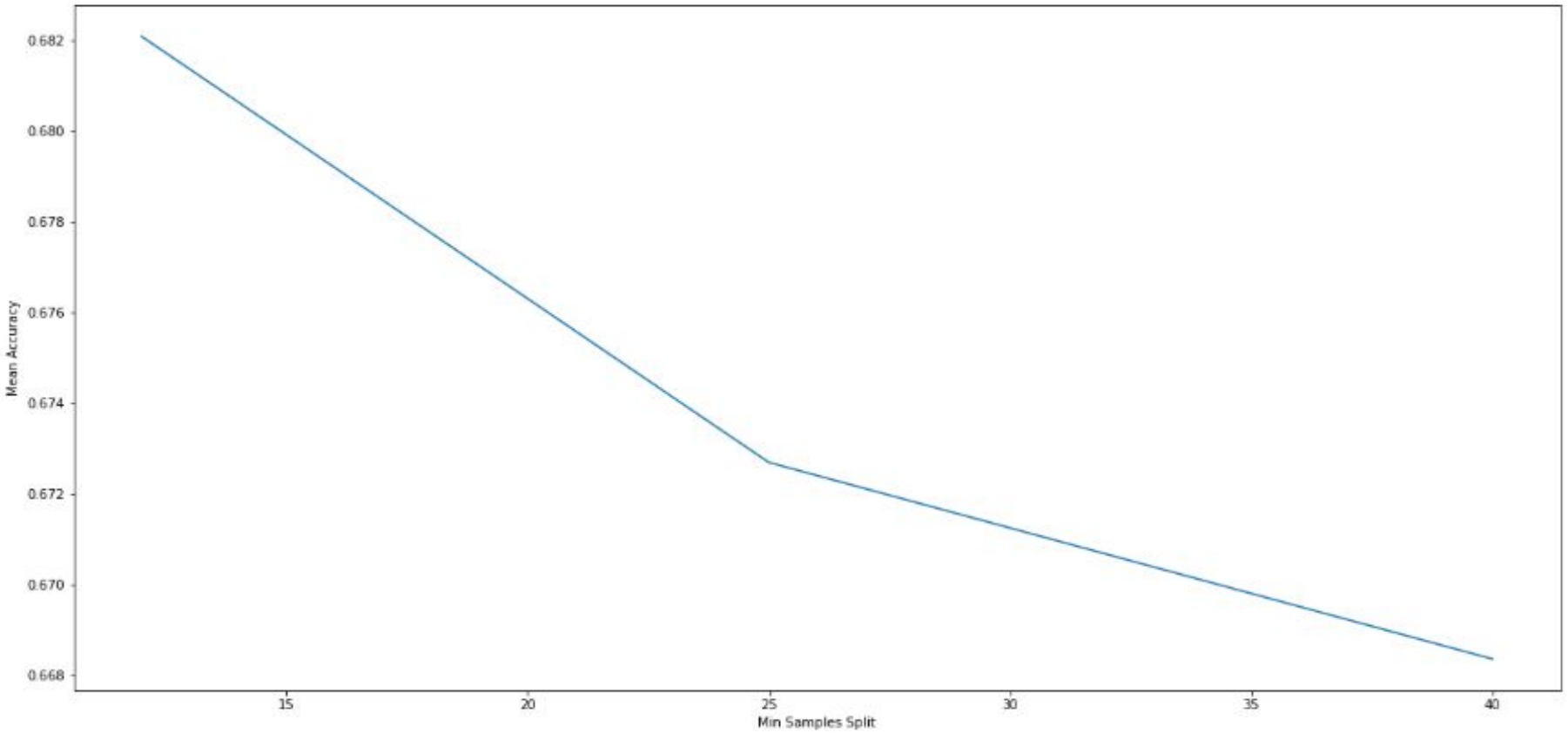


Supporting Information: Random Forest





Supporting Information: Accuracy of Parameters

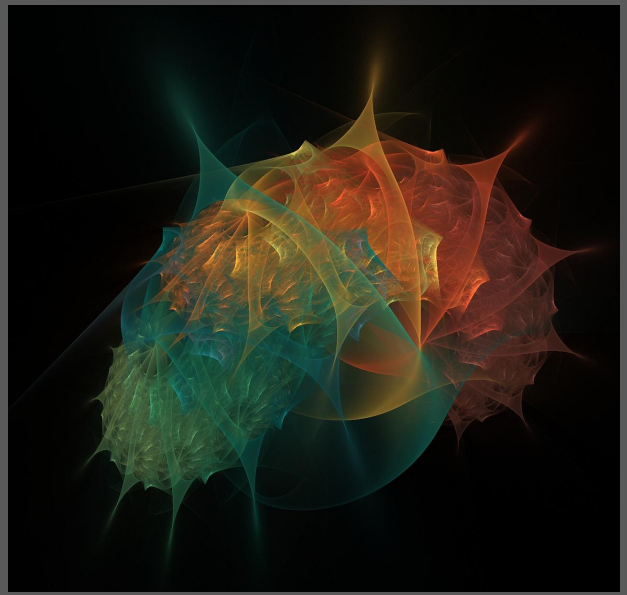


Word Cloud: Specialized Features

Word Cloud: Most Common Cyber Security

Word Cloud: Most Common Hacking

Executive Summary



Questions?