

Political Orientation Prediction



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WHAT IS DEEP POLLSTER?

Deep Pollster is an data analysis application that uses Deep Learning to predict the political leaning of Twitter users in a particular geographical region of the USA

PURPOSE

Existing Twitter analysis systems heavily depend on individual tweet to assess political leanings of a user and in turn a population. This has a caveat of missing out the gradual shift in political polarity of that individual. Polls are answered based on the current political scenario and generally tend to be unreliable due to that nature.

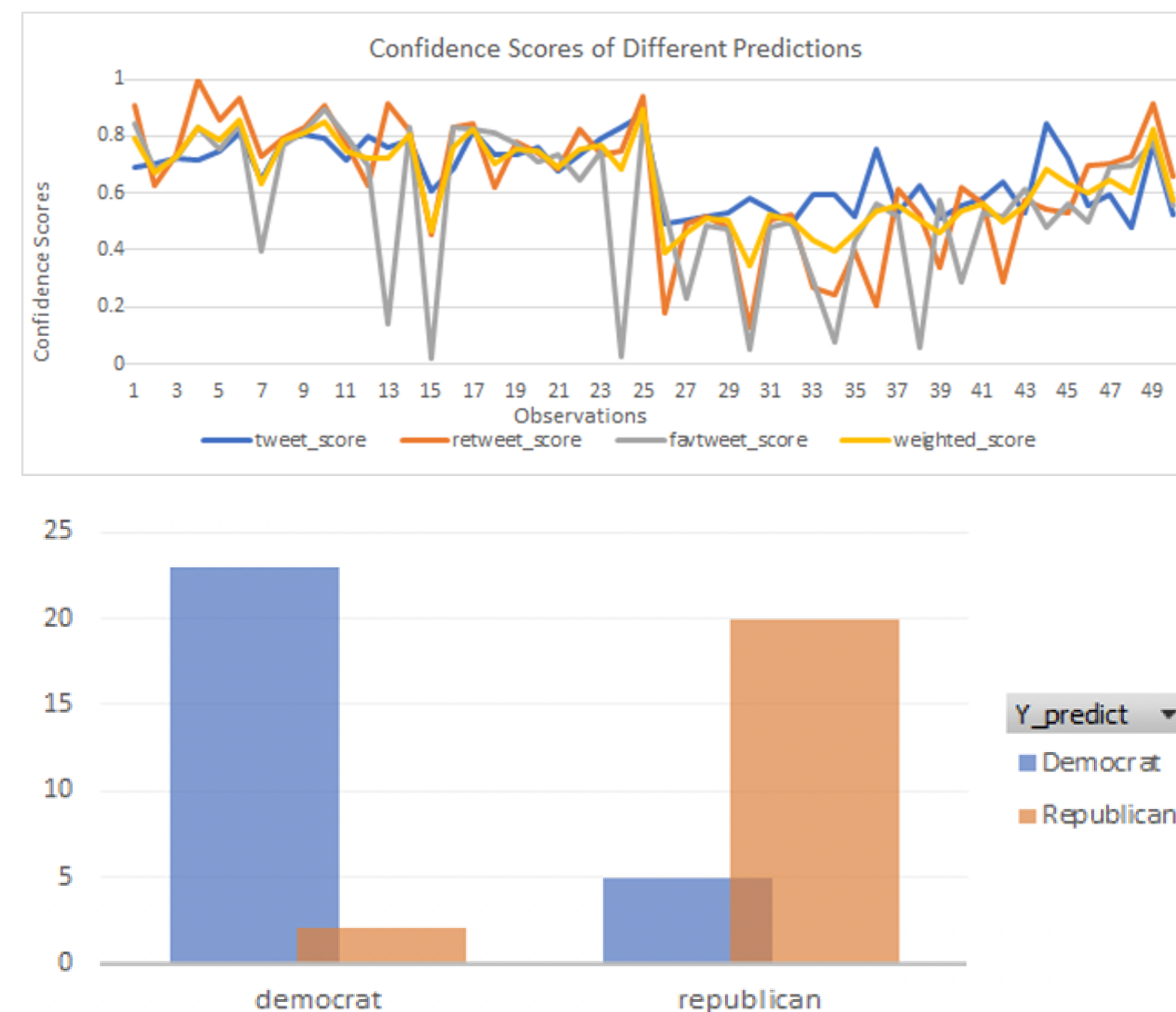
We wish to discover and quantify the true political leaning of an user using a complete and comprehensive approach by analyzing the user's activity on twitter from the tweets, retweets, liked tweets, their social graph and location.

NOVEL APPROACH

Utilizing Flajolet-Martin's algorithm and Bidirectional Graph search to perform probabilistic search to efficiently identify the degree of separation

Implemented Fine-Tuned Bidirectional Encoder Representations from Transformers (BERT) for political sentiment classification

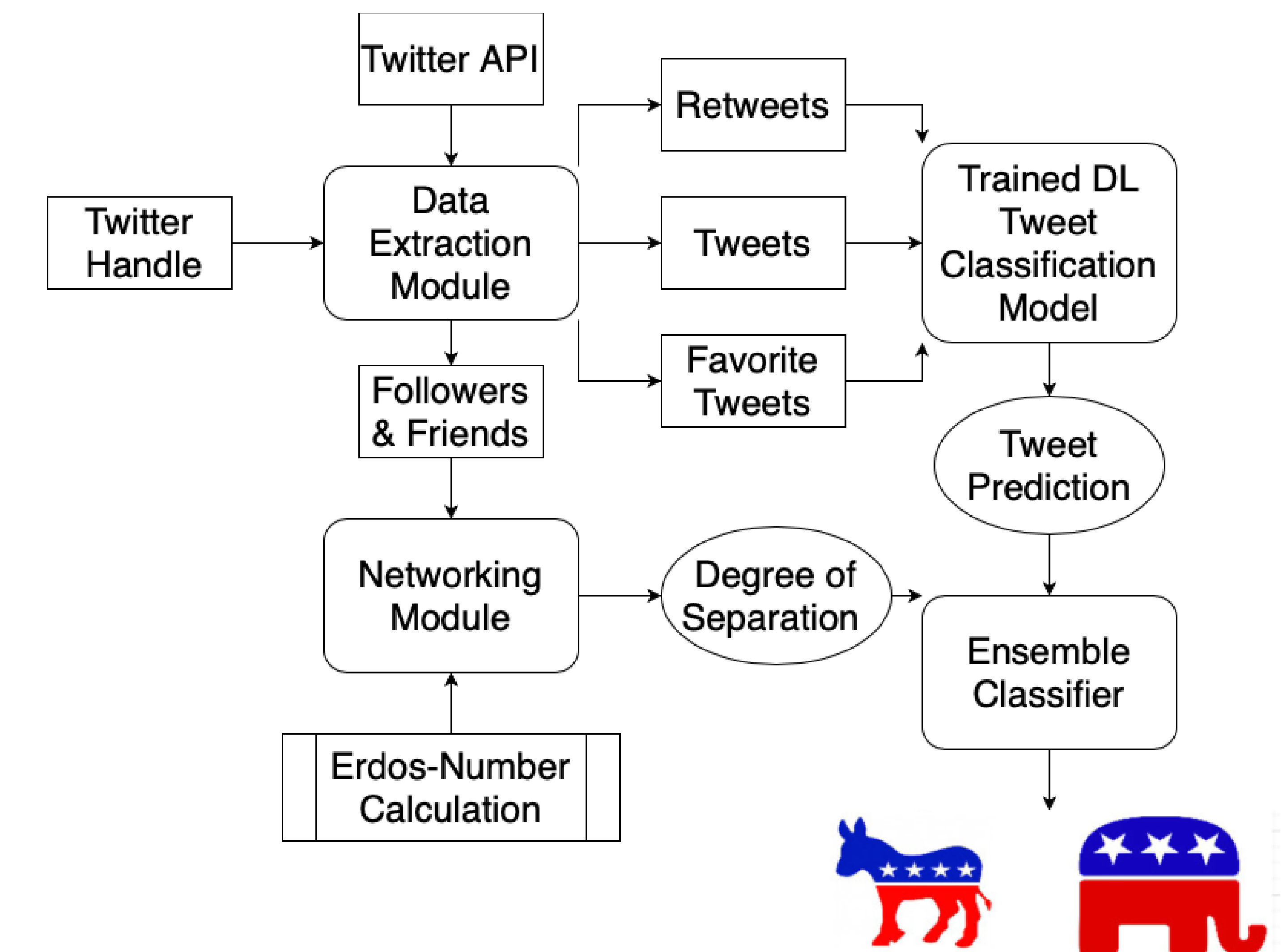
RESULTS



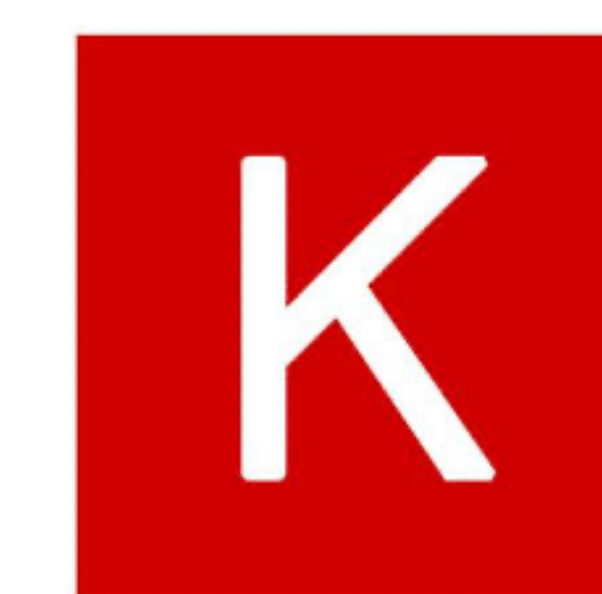
Our initial research hypothesis was to find out if politicians are relatively consistent with the language they use and follow on social media platforms. This would form our base and test case to train our model. Then we would utilize this model to predict the political leaning of general public users.

An interesting inference we were able to find out that democrats are more consistent with their language than republicans. Most of the misclassifications arose from republican accounts. Republican politicians tend to tweet which wavers between the both sides of the political spectrum. This poses a challenge to build a general model for the public as they are more neutral compared to politicians.

ARCHITECTURE



TECHNOLOGIES



FUTURE WORK

The handling of tweet classification can further be improved by handling spam accounts. Our tweet analysis using NLP needs to improved to handle sarcasm which is currently heavily researched.