Classification of Political News with NLP

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Outline

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Proposed Research

- The study of an aggregation of news articles.

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- Using various Natural Language Processing Techniques.

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- The study of an aggregation of news articles.
- Using various Natural Language Processing Techniques.
- Detection of bias with news outlets for the reader.

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Goals

- To determine where bodies of text come from algorithmically.

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- To have a success rate about 70% with said goal.

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- To have a success rate about 70% with said goal.
- To understand the success and failures and reaching the goal.

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- Will be one of the first tools to give a metric to news articles.
- If utilized correctly could be used to save some time when there is more subjective bias than there is fact.

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Data about our Data

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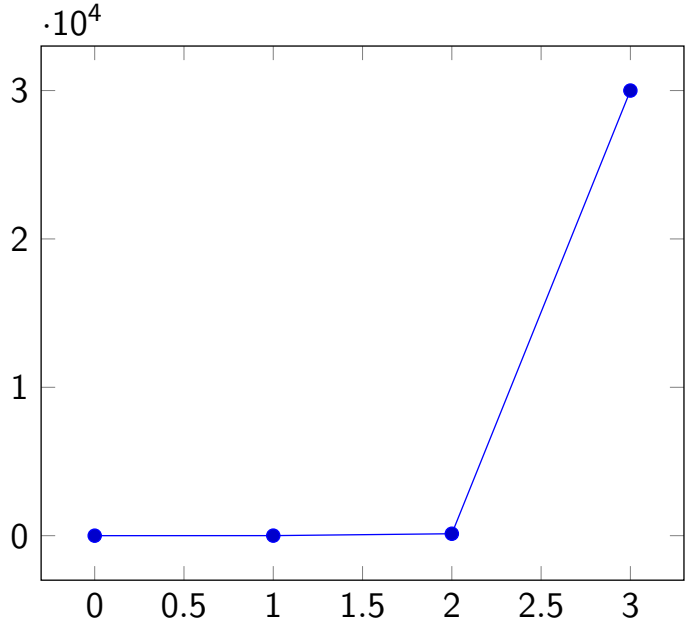
- Each article is self contained within a text file.
- All articles are from the politics section.
- Contains about a year of news articles from both institutions.



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Data Source

The Data was sourced from CNN and Fox News Sites directly. There was no data source appropriate for our means so we gathered it ourselves. The sites presented their own individual challenges.

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- Node is a JavaScript runtime that allows for JavaScript to be ran on a server.

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  - Using pup to get the article body and writing the output to a correct file.
- Cleaning up the folder structure.

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Models and Algorithms

Tensor Flow is utilized initially to create TF and IDF for the algorithm. Then the model takes in the raw text files and puts them together vectorize the text into integer vectors. This is utilized with a Sequential Feed-Forward Network to make the base model.

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Options to Implement

- TF-IDF

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- FastText

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- TF-IDF
- FastText
- Deep Learning
  - Binary
  - Multiclass

Model Structure

- Embedding Layers

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Model Structure

- Embedding Layers
- Dropout Layer
- Dense Layer
- Global Average
- Dense
- Final Dense

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Results

We were able to get an accuracy of 97 percent and a loss of 20 percent with the data of around 130 articles. We needed to get more data for more accurate results.

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Questions and Answers

Please ask some questions about anything related to the project.