Defending Against Fake News

Overview:
Booz Allen Hamilton (BAH) is an information technology consulting company that is attempting to tackle the “Fake news” problem that has swept over the United States. BAH created a Chrome extension that checks the validity of the website that a user is on. The extension creates an output for the user based on several plugins that gives a probability of how likely it is that the article is fake.

Objectives
The Penn State Capstone team was tasked with creating another plugin that can add accuracy in identifying fake news. It was decided to implement a Sentiment Analysis plugin, which measures the positive, negative, or neutral sentiment of an article.

Approach:
- Define and analyze examples of “Fake News” articles.
- Develop a high level understanding of how common people identify “Fake News”.
- Download and troubleshoot setting up software to run chrome extension on our computers.
- Analyze the current plugin to identify what algorithms are currently being used.
- Use available resources from TA’s and code within plugin to learn how to code in Java.
- Develop an original algorithm that could be used to identify a “Fake News” article.
- Researched and decided on using “Sentiment Analysis” for our additional algorithm.
- Implemented sentiment analysis using Python.
- Called the Python code within Java to execute the plugin.

Outcomes
- Ranking is based on a scale from 0 to 1, where 0 is negative, 1 is positive, and 0.5 is neutral sentiment.
- Utilized machine learning within the Python code to account for sarcasm and other article tones that may not be strictly positive or negative.
- The model is trained to output a score between 0 and 1 with 70% accuracy.
- The algorithm has not been successfully installed into the plugin for the chrome extension.