CS 461 – Introduction to Artificial Intelligence

Final Project – Artifical Neural Network

Benjamin Nguyen

**------------------------------------- Introduction -------------------------------------**

**What is this project?**  
Project are required to build a neural network to predict the partisanship based on over five thousand tweets records. In this case, the network follows a type of classification because it predicts the output that has two discrete values (Democracy or Republic).

**What are libraries and dataset used in the project?**  
Libraries: Pandas, Numpy, Tensorflow (Keras), Sci-kit Learn, Re  
Dataset: congressional\_tweet\_training\_data.csv (original data), shortdata.csv (first 25,000 records from original, it can be informally considered to be a validation set followed k-fold cross validation, this data is used to save time during building the neural network).

**Which activation function is chosen to apply to the network?**For hidden layers, Rectified Linear Unit was used (ReLU)  
For output layers, Sigmoid was used

**------------------------------------- Processing -------------------------------------**

**Phase 0 – Planning and Strategy**

**Phase 1 – Preprocessing Dataset with Small Amount of Dataset**

**Phase 2 – Building Neural Network based on input data**

**Phase 3 – Apply Neural Network to the original dataset**

**Phase 4 – Modifying to produce the best outcome**

**------------------------------------- Observation and Recap -------------------------------------**

**------------------------------------- References -------------------------------------**