**Instructions**

**Dependencies**

* Python3
* Tensorflow 1.11.0
* Keras 2.2.4
* Jupyter Notebook
* Scikit Learn

**How to use the folder**

* There are two folders inside the main folder one for “Binary\_Classification” and another for “Six\_Class\_Classification” in each of these folders there is a pre-processing file and classifier file run the pre-processing file by providing the right path for the dataset components. (“train.tsv” for train\_news,”test.tsv” for test\_news and ”valid.tsv” path for valid\_news ) and generate preprocessed data (“preprocessed.npz” in the first case and “preprocessed6class.npz” in the second case)
* For opening the classifier files make sure to run them using jupyter notebook and run them line by line and obtain the results

The highest accuracy for both the binary classification and 6 class classification is given by Logistic Regression which can be obtained by running the logistic regression block in both the Jupyter Notebooks

Binary Classification – Maximum Accuracy was obtained through Logistic Regression

* Test Accuracy-60.8%
* Valid Accuracy-62.4%

|  |  |  |
| --- | --- | --- |
| Classifier | Test Accuracy in % | Valid Accuracy in % |
| Multinomial Naive bayes | 60.7 | 61.4 |
| Logistic Regression | 60.8 | 62.1 |
| Xgboost | 59.3 | 58.1 |
| Random Forest | 60.8 | 61.4 |
| SVM | 56.4 | 52.0 |
| Neural Network | 56.6 | 52.3 |

Six Class Classification - Maximum Accuracy was obtained through Logistic Regression

* Accuracy-23.5%
* Valid Accuracy-24.1%

|  |  |  |
| --- | --- | --- |
| Classifier | Test Accuracy in % | Valid Accuracy in % |
| Multinomial Naive bayes | 21.9 | 23.4 |
| Logistic Regression | 23.5 | 24.1 |
| Random Forest | 21.2 | 20.1 |
| SVM | 21.2 | 20.1 |
| Neural Network | 23.0 | 23.13 |

The code can also be found at my github link - <https://github.com/themechanicalcoder/Fake-News-Detection>