Project: Hate Speech detection using Transformers (Deep Learning)

Project Report

- • **Group name:** Speechium
- • **Names:** Richard Flores, Christos Christoforou
- • Email: **rflo147@wgu.edu**, **christoschristoforou97@hotmail.com**
- • **Country:** United States, United Kingdom
- • **Specialization:** NLP
- • **GitHub repo link:** https://github.com/DataDaimon/twitter-sentiment

Problem Statement:

The term hate speech is understood as any type of verbal, written or behavioral communication that attacks or uses derogatory or discriminatory language against a person or group based on what they are, in other words, based on their religion, ethnicity, nationality, race, color, ancestry, sex or another identity factor. In this problem, we will take you through a hate speech detection model with Machine Learning and Python.

Hate Speech Detection is generally a task of sentiment classification. So, for training, a model that can classify hate speech from a certain piece of text can be achieved by training it on data that is generally used to classify sentiments. So, for the task of hate speech detection model, we will use the Twitter tweets to identify tweets containing Hate speech.

Data Intake Report:

Name: Hate Speech Detection
Report date: 31/12/2022
Internship Batch: LISUM15

Version: 1.0
Data intake by: Richard Flores, Christos Christoforou
Data storage location: Twitter hate speech | Kaggle

Tabular data details: train_E6oV3lV

Total number of observations	31962
Total number of files	1
Total number of features	3
Base format of the file	.csv
Size of the data	3MB

Tabular data details: test_tweets_anuFYb8

Total number of observations	17197
Total number of files	1
Total number of features	2
Base format of the file	.csv
Size of the data	1.6MB

Data Cleansing and Transformation Completed:

<u>Standard Data Cleaning and Transformation</u>
- Verify Data Types
- Check for Null Values
- Remove Duplicate Data
- Check for Missing Data

<u>NLP Specific Data Cleaning and Transformation</u>
- Remove Punctuation with *String* library
- Tokenization of Text using *RE* library
- Remove Stop Words using *NLTK library*
- Lemmatization of Text using *Tokenize* and *Stem* modules