



Data Glacier

Your Deep Learning Partner

NLP Hate Speech Detection

Virtual Internship

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By:

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Problem Statement

Overview

To detect a tweets that has hateful content and at the same time prevent prediction incorrectly. The term hate speech is understood as any type of verbal, written or behavioural communication that attacks or uses derogatory or discriminatory language .

Solution

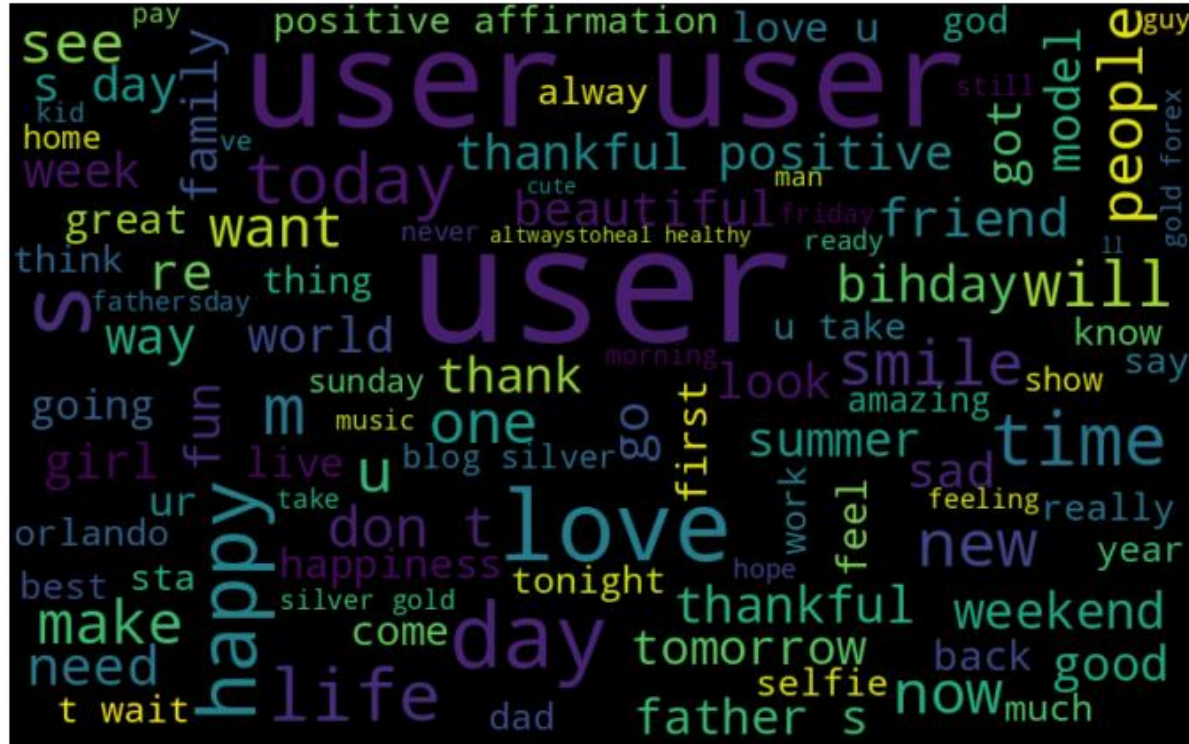
Provide them with the trained model that can accurately predict the tweets that contain hateful content.

Approach

The general approach of the project is divided into important major section in which each of the section is equally important to the project. They are outlined as follows.

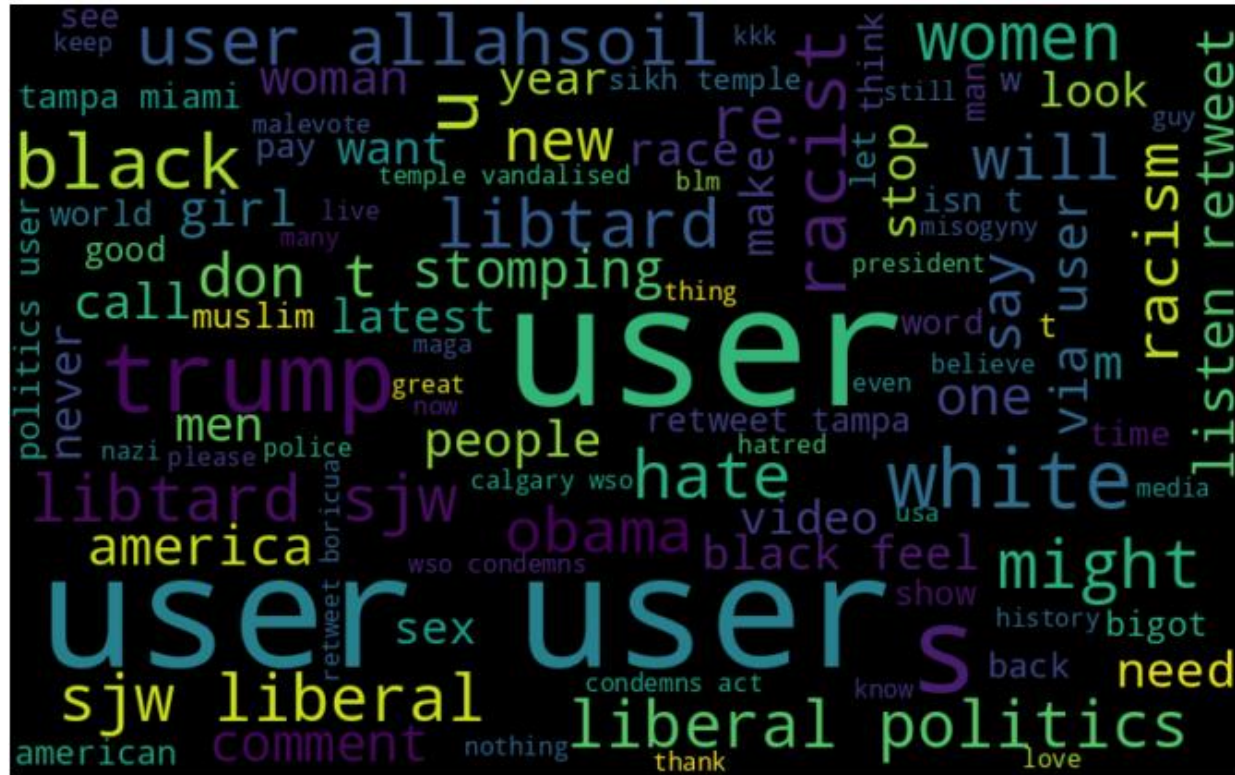
1. Downloading the data
2. Preparing and Preprocessing the data
3. Data Visualization
4. Transform the data
5. Model development
6. Training and Validation
7. Model Inference
8. Amazon SageMaker Deployment

EDA



The most often used words in the non-hateful tweets.

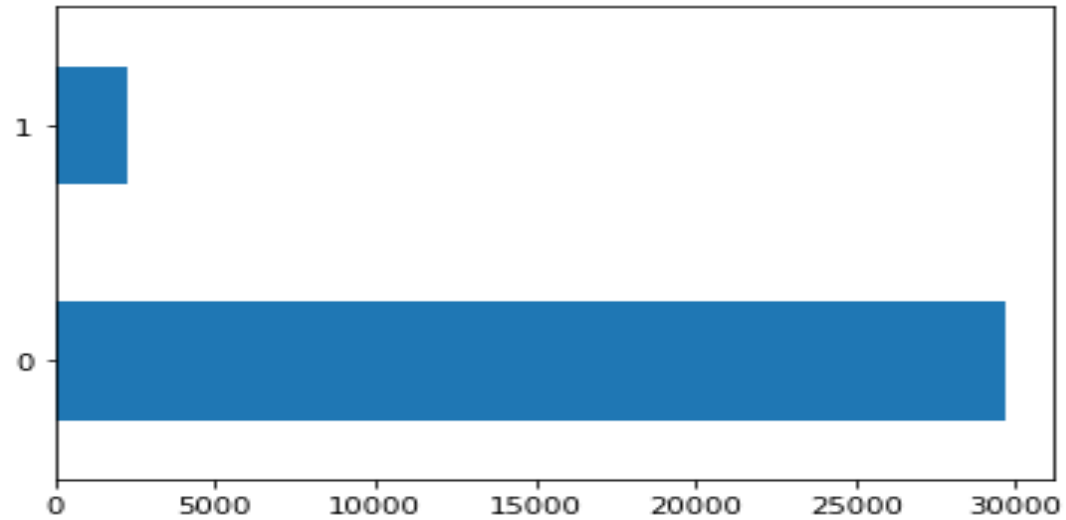
EDA



The most used words in the tweets with hateful content.

EDA

```
0    29720  
1     2242  
Name: label, dtype: int64
```



We observed there is a high imbalance in between the labels in the dataset.

EDA Summary & Recommendations

- The EDA has been done on the textual data to see which words used the most on each class and found that the word 'User' has been used much on both classes. This word is nothing, but the common word used by twitter.
- Therefore, this has no useful meaning for that word, and it might influence the model in predicting wrong class. Therefore, we can remove that word from the corpus.
- Also, we found many local slang words found in the corpus, which is not correctly spelled in English. Attempt has been made to replace those words by building a dictionary with key as the slang words and their correct word as value and replacing them across the corpus. Building such dictionary in would be useful in a long term in developing the model.
- Class Imbalance has been found on the data, so for designing the model, the under-sampling technique adopted as oversampling may overfit the model. There would be some loss in the model, but it can be compensated in a long run by acquiring more data with the other class in future

Thank You