

# Emotion Detection Analysis

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# Interface Features

- Buttons for Train, Test, Evaluate User Input, and Exit
- Buttons for uploading excel sheets (both train and test data)
- Status bar to show current status of application (e.g. Evaluation Complete)
- Bar chart to visualise emotion percentage

# Training Interface

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Train	Test	Evaluate User Input	Exit
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Training

**Tweet Text** K:\Trial\EmotionDetection-master\EmotionDetection-master\data\tweet-text.csv

**Tweet Values** K:\Trial\EmotionDetection-master\EmotionDetection-master\data\tweet-values.csv

**Train**

```
C:\Windows\System32\cmd.exe - python EmotionDetectionGUI.py
Microsoft Windows [Version 10.0.17763.379]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\>K:\Trial\EmotionDetection-master\EmotionDetection-master>python EmotionDetectionGUI.py
398|#####
| 15427/40000 [02:14:03:33, 115.04it/s]
```

# Training Interface - Completed

Emotion Detection Analysis

Train Test Evaluate User Input Exit

Training

Tweet Text: K:\Trial\EmotionDetection-master\EmotionDetection-master\data\tweet-text.csv

Tweet Values: K:\Trial\EmotionDetection-master\EmotionDetection-master\data\tweet-values.csv

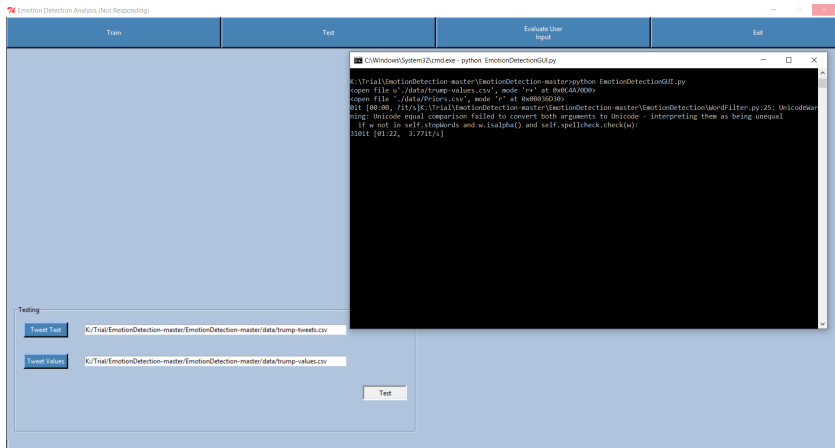
Train

Total number of entries in Vocabulary: 8507

```
C:\Windows\System32\cmd.exe - python EmotionDetectionGUI.py
Microsoft Windows [Version 10.0.17763.379]
(c) 2018 Microsoft Corporation. All rights reserved.

K:\Trial\EmotionDetection-master\EmotionDetection-master>python EmotionDetectionGUI.py
100%|#####| 40000/40000 [06:14:00:00, 106.93it/s]
```

# Testing Interface



# Testing Interface - Completed

Emotion Detection Analysis

Evaluate Data

Testing

Tweet Text

K:/Trial/EmotionDetection-master/EmotionDetection-master/data/trump-tweets.csv

Tweet Values

K:/Trial/EmotionDetection-master/EmotionDetection-master/data/trump-values.csv

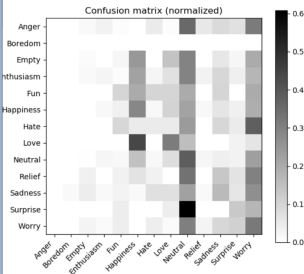
Accuracy: 0.19013360739979446

Confusion Matrix:

Predicted \ Actual	Anger	Boredom	Empty	Enthusiasm	Fun	Happiness	Hate	Love
Anger	0	0	2	4	1	0	6	1
Boredom	0	0	0	0	0	0	0	0
Empty	0	0	1	0	2	21	0	12
Enthusiasm	0	0	2	3	1	28	3	9
Fun	0	0	0	0	1	2	1	1
Happiness	0	0	0	3	6	46	3	17
Hate	0	0	0	0	2	1	1	1
Love	0	0	0	0	0	14	0	10
Neutral	0	0	1	5	4	33	4	18
Relief	0	0	1	0	1	2	1	0
Sadness	0	1	3	1	2	1	5	5
Surprise	0	0	0	0	1	0	0	1
Worry	0	0	2	1	3	0	3	1
__all__	0	1	12	17	24	148	27	76

Predicted \ Actual	Neutral	Relief	Sadness	Surprise	Worry	__all__
Anger	44	7	11	9	39	124
Boredom	0	0	0	0	0	0
Empty	25	0	5	2	17	85
Enthusiasm	37	4	12	5	22	126
Fun	2	0	1	0	2	10
Happiness	35	3	10	6	31	169
Hate	5	0	2	1	8	21
Love	5	0	0	1	2	32
Neutral	86	5	9	7	51	223
Relief	10	0	4	2	9	30
Sadness	15	1	11	4	18	67
Surprise	14	0	0	3	4	23
Worry	22	2	7	8	23	72
__all__	300	22	72	48	226	973

Figure 2

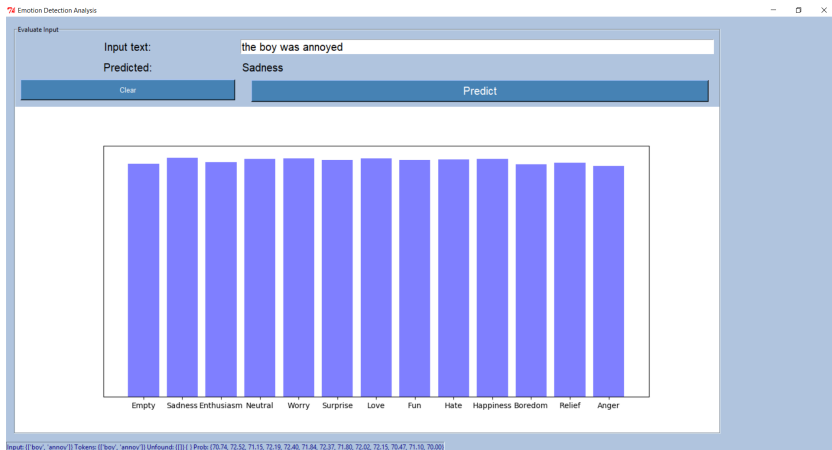


Evaluation Complete

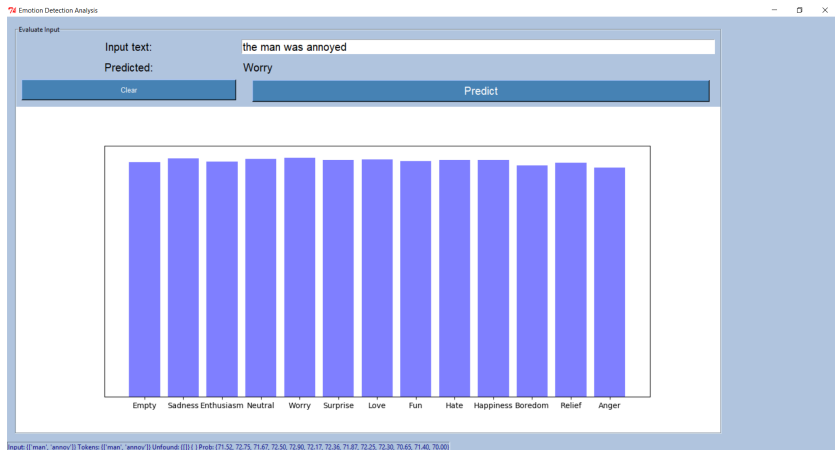
- Original experiment had an accuracy of more than 25%. However, our experiment accuracy was just 19%.
- The emotion identified as Anger was often predicted to be Neutral
- Whereas most Neutral statements were predicted to be the emotion Worry
- Overall, most of the identified emotions were more likely to be predicted to be Neutral



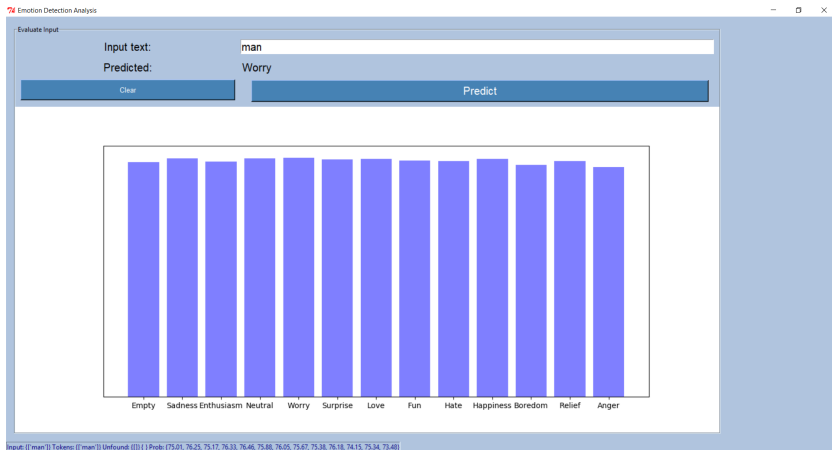
# Data Visualisation 1



# Data Visualisation 2

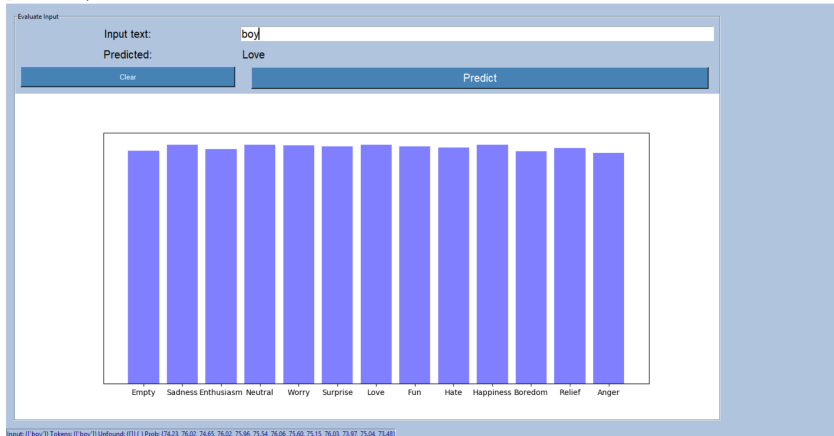


# Data Visualisation 3



# Data Visualisation 4

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- From the data visualisations, it can be noticed that words that should be neutral, such as boy or man, were predicted to have emotion
- If these words were to be used with a word that should contain emotion, such as "annoy", it is difficult to identify which word lead to the prediction
- As such, to improve the accuracy of this Emotion Detection application, words such as boy or man that do not contain emotion should be classified as Neutral. This could lead to a better prediction of emotions

Thank You