

Intro to AI Workshop

Sentiment Analysis Tutorial



01

What is
Natural
Language
Processing?

NLP Definition

“Natural language processing strives to build machines that understand and respond to text or voice data—and respond with text or speech of their own—in much the same way humans do.”

- IBM

ENABLING COMPUTERS TO
PROCESS LANGUAGE LIKE
HUMANS



02

What is Sentiment Analysis?

Sentiment Analysis

- Sentiment Analysis is the process of using a computer to extract information from text that normally only a human would be able to do
- Useful for businesses to avoid having to manually go through large amounts of texts to understand patterns and many other use cases

Sentiment Analysis

Project Tutorial



Google Colab

`colab.research.google.com`



TextBlob

`pip install TextBlob`

Setting up TextBlob (Import Dependencies)

```
[1] from textblob import TextBlob  
      import nltk
```

```
[7] nltk.download("wordnet")  
nltk.download("brown")  
nltk.download('punkt')
```

Getting Variables Ready

```
[3] text = '''  
The Guinea fowl flies through the air with all the grace of a turtle.  
Lightning Paradise was the local hangout joint where the group usually ended up spending the night.  
I thought red would have felt warmer in summer but I didn't think about the equator.'''
```

```
[5] blob = TextBlob(text)
```

<https://randomwordgenerator.com/sentence.php>

Extract Nouns Using TextBlob



```
blob.noun_phrases
```

```
→ WordList(['guinea', 'fowl flies', 'lightning', 'local hangout joint'])
```

What is Polarity and How to Calculate?

Polarity is a measure of how positive or negative the text is



```
blob.polarity
```



```
-0.08333333333333333
```

Subjectivity

Subjectivity is a measure of how subjective or objective certain text is

```
[10] blob.subjectivity
```

```
0.08333333333333333
```

Tokenization

```
] blob.words
```

```
WordList(['The', 'Guinea', 'fowl', 'flies', 'through', 'the', 'air', 'with', 'all', 'the', 'grace', 'of', 'a', 'turtle',
```

```
[20] sentence = blob.sentences
```

```
[21] print(sentence)
```

```
[Sentence("The Guinea fowl flies through the air with all the
```

```
▶ for sentence in blob.sentences:  
    print(sentence.sentiment)
```

```
→ Sentiment(polarity=0.0, subjectivity=0.0)  
Sentiment(polarity=-0.125, subjectivity=0.125)  
Sentiment(polarity=0.0, subjectivity=0.0)
```

Words Inflection and Lemmatization

Lemmatization converts the word to its base

```
▶ from textblob import Word  
w = Word("octopi")  
w.lemmatize()  
x = Word("geese")  
x.lemmatize()
```

```
↳ 'goose'
```

Spell Check

```
▶ text = TextBlob("Is thisw workng welz")
text.correct()

⇒ TextBlob("Is this working well")
```

Translation

https://www.w3schools.com/tags/ref_language_codes.asp

```
[40] t = TextBlob("Can you say this in another language?")
```

```
▶ t.translate(to="fr")
```

```
⇒ TextBlob("Pouvez-vous dire cela dans une autre langue?")
```

```
[42] t.translate(to="es")
```

```
TextBlob("¿Puedes decir esto en otro idioma?")
```

```
[43] t.translate(to="hi")
```

```
TextBlob("क्या आप इसे दूसरी भाषा में कह सकते हैं?")
```



|

Thanks

Any Questions? Additional Use Cases?