Dear Ling Diary

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What does it do?

Sentiment Analysis

.py file that “reads” a .txt file and analyzes the words for a possible mood using sentiment analysis.

Intended to solve the problem of trying to get computers to recognize human emotion in text

Main Problem solution: Attempts to recognize depression or anger states.

How does it work?

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1. Learns the basic format of a sentence
2. Takes sample text and its classification as positive or negative emotions in order to train it.
3. NaiveBayesClassifier algorithm
4. Takes a text file with words (diary.txt) and extracts the words.
5. Performs analysis on it by splitting it into sentences and classifying each sentence as a positive or negative.
6. Using differences in percentages and human error guessing, it classifies a whole text as positive, negative, or neutral.

Background Research, Existing Solutions, Our Project

- We researched on sentiment analysis and common API's used for this purpose.
- We utilized the Natural Language Toolkit (nltk) by importing its text processing libraries.
- Canopy was the IDE we used to write and run our code.
- We found the platform, Jupyter, where we tested the inputs and outputs of our project.
- Naive bayes classifier classified the sentences in our diary entries.
- An example of existing solutions of sentiment analysis would be Google Cloud Natural Language API.

Limitations (-_-) and Future Developments \(^o^)/

- Probably not really accurate. At the moment it’s accuracy is about 83%.
- Cannot be applied to a webpage. Only text files.
- Can only describe each sentence at hand as fully positive or fully negative, not partially.
- Does not really understand satire/sarcasm.
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- Recognizes difference between anger and depression
- Put it online into a private submission and analyzes it.
- Be able to alert guardians or depression lines/doctors of the child.

Sources

- https://www.twilio.com/blog/2017/09/sentiment-analysis-python-messy-data-nltk.html
- http://text-processing.com/demo/sentiment/\
- http://www.nltk.org/book/
- https://www.annualreviews.org/doi/abs/10.1146/annurev-linguistics-011415-040518
- https://en.wikipedia.org/wiki/Naive_Bayes_classifier