

CS-410

Aspect Based Sentiment Analysis

Project Overview

The purpose of this repository is to create an aspect-based sentiment analysis (ABSA) model which involves a couple of steps. First, a review or comment is split up into topics using an unsupervised topic clustering algorithm. Then each sentence in the review is assigned to one of the topics and the sentiment for that sentence is evaluated. This allows us to assign an average sentiment for each topic.

Training Sentiment Models

Please install Anaconda if it isn't already. Next, navigate to the local cloned repository and type the following in the linux shell:

- `conda env create -f environment.yml`

After the environment has been loaded, activate the environment with the following comand:

- `source activate tensorflow`

Training Sentiment Models

To train the sentiment models, simply navigate to the src/training folder and run the following python files:

- setup.py
- train_sent_bow.py
- train_sent_cnn.py

The models can then be tested by running the "test_sentiment.py" file

Web Demo

<http://absa-api.us-east-2.elasticbeanstalk.com/>

Instructions:

- Paste review in text field
- Select a number of topics
- Click "Process Review"

Product Review Sentiment Analyzer

There are too many iPhones. Or, maybe there's just one new iPhone, in several step-up flavors. The iPhone XS and XS Max, along with the iPhone XR, are Apple's three new 2018 iPhones. But looking back on them now, in December, they have a lot more in common than you might think. Same new processors, same upgraded camera sensors and same image signal processors. Know that the XS is no longer the starting point for any iPhone X shopper: it's merely the slightly step-up model. The iPhone X was a singular design in 2017. This year, the trio of iPhone X models represent a spectrum from \$749 to nearly \$1,500, should you choose to pay for all the storage. When I first reviewed the XS, I considered it a modest upgrade over the X, and to wait for the XR (which was released more than a month later). That feeling holds true now that I've reviewed the XR. The iPhone XR is Apple's "affordable" X model, and the best iPhone to buy right now. Starting at \$749, it has Face ID and a depth-sensing front camera instead of a home button, just like the rest of the iPhone X gang. There's a notch at the top of the screen, too. It's faster and has better battery life than 2017's iPhone X, but has only a single rear camera (equipped with its own software-aided portrait mode that simulates depth of field bokeh effects), and a lower-res LCD screen instead of OLED. But for the vast majority of people, those are far from dealbreakers. In fact, it's the first choice you should make in buying a new iPhone. So, where does that leave the XS and XS Max? Luxury upgrades. Everything the XS offers still stands out, if you look hard enough.

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Process Review

Analysis Results

Product Aspect	Aspect Sentiment
Also Phone Charging	4.7
Iphone New Camera	4.8
Like Display Advantage	4.8
Apple Iphone Upgrade	4.9
Everyday Battery Easily	4.9
Faster Want Iphone	4.7

(Review copied from: <https://www.cnet.com/reviews/apple-iphone-xs-review>)

Team Contribution

Elias Kraihanzel:	Topic Modeling and Web Implementation
Nathan Fitzpatrick:	Sentiment Analysis and Project Tutorial