

Sentiment Analysis of Product Reviews

Table of Contents

1. Project Overview
2. Installation
3. Usage
4. Credits

Project Overview

Coding Task: Sentiment Analysis of Product Reviews

This project involves performing sentiment analysis on product reviews using natural language processing (NLP) techniques. The primary goal is to preprocess the text data by cleaning and removing stop words, and then compute the sentiment polarity and subjectivity of each review using TextBlob. Sentiment analysis is essential as it helps businesses understand customer opinions and feedback, which can be crucial for product improvements and customer satisfaction.

Installation

To run this code locally, you need to have Python installed along with the required libraries. You can install the necessary packages using `pip`.

1. **Install Python:** Make sure you have Python installed. You can download it from the [official Python website](#).
2. **Install required libraries:** Open your terminal or command prompt and run the following command:

```
pip install pandas spacy textblob
```

3. **Download spaCy Model:** You also need to download the spaCy language model. Run the following command:

```
python -m spacy download en_core_web_sm
```

Usage

After installing the necessary packages, you can use the code to perform sentiment analysis on product reviews. Here's how to do it:

1. **Prepare your CSV file:** Ensure your CSV file has a column named `reviews.text` containing the text of the reviews.
2. **Run the Script**
3. **Check the Output:** The script will print a subset of the reviews along with their processed text, polarity, and subjectivity scores. This helps you to quickly understand the sentiment of a sample of your reviews.

4. Output:

The diagram illustrates the output of a sentiment analysis model. It shows a table with three columns: 'processed_review', 'polarity', and 'subjectivity'. The first column contains a row number (22909) and the original review text. The second column contains the polarity score (0.41667), and the third column contains the subjectivity score (0.408333). Arrows indicate the flow of information: 'Original Review' points to the text in the first column, 'Processed Review' points to the processed text in the second column, 'Row Number' points to the row number in the first column, 'Polarity' points to the polarity score in the second column, and 'Subjectivity' points to the subjectivity score in the third column.

	processed_review	polarity	subjectivity
22909	Echo is a great device to have if you need an answer to a question or need the weather report, etc. One of the best uses I have found so far is the creation of a shopping list. As you think of items for a shopping list, just tell Alexa and she will add it to your list which you can recall later just before going to store. It is fun to ask Alexa trivia questions or use her for other fun tidbits of information.	0.41667	0.408333

5. Interpretation:

1. **Polarity** refers to the measure of how positive or negative a piece of text is. It is a value that ranges from -1 (very negative) to 0 (neutral) to 1 (very positive).
2. **Subjectivity** measures how subjective or objective a piece of text is. It is a value that ranges from 0 (very objective - factual) to 1 (very subjective - feelings).

Credits

This code was developed by Darryl Johnson.