ReadMe

Overview:

Due to the tremendous growth in online marketplaces over the last several decades, online vendors and merchants now invite their customers to give their thoughts on the things they have purchased. As a result, millions of evaluations are generated every day, making it difficult for a potential customer to decide whether or not to purchase a product. For product manufacturers, analyzing such a large number of reviews and comments is challenging and time-consuming. Therefore, they use Sentiment analysis to make this task efficient and easygoing. The ability of algorithms to analyze text has greatly increased as a result of recent developments in deep learning.

We have developed an LSTM model for sentiment analysis and compared it with different machine learning models. And we got better accuracy with LSTM deep learning models.

We have used the LSTM model for real-time review analysis and emoji and emoticons analysis. For a better user experience, we have made a graphical user interface that can get input and predict the output.

Installation:

We have completed our whole project in jupyter which is available on the internet and anyone can run this project in jupyter.

For the installation of the jupyter notebook click here and follow the instruction stated below:

Installing jupyter by anaconda

Download Anaconda

Install anaconda

Run the notebook in the command line:

jupyter notebook

Installing jupyter by pip

For existing python users jupyter can be installed by pip. Firstly, upgrade pip by the following command:

pip3 install --upgrade pip

Install jupyter notebook

pip3 install jupyter

Libraries:

import numpy as np

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import pandas as pd
import os
import string
import re
import nltk
import tkinter
from tkinter import *
from nltk.corpus import stopwords
from nltk.stem.porter import PorterStemmer
from nltk.tokenize import word_tokenize, sent_tokenize
from nltk.stem.wordnet import WordNetLemmatizer
import matplotlib.pyplot as plt
import seaborn as sns
from wordcloud import WordCloud, STOPWORDS
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense
from tensorflow.keras.layers import Flatten
from tensorflow.keras.layers import Conv1D, GlobalMaxPool1D
from tensorflow.keras.layers import MaxPooling1D
from tensorflow.keras.layers import Embedding
from tensorflow.keras.preprocessing.text import Tokenizer
from tensorflow.keras.preprocessing import sequence
from sklearn.preprocessing import LabelEncoder
from tensorflow.keras.layers import LSTM,Dense, Dropout, SpatialDropout1D
from sklearn.model_selection import train_test_split
from sklearn.model_selection import cross_val_score, GridSearchCV
from sklearn.metrics import confusion_matrix, classification_report, accuracy_score, f1_score
from sklearn.naive_bayes import MultinomialNB
from sklearn.tree import DecisionTreeClassifier
from sklearn.linear_model import LogisticRegression
```

Dataset:

We have considered the Kaggle dataset which is available openly for all so that anyone can download from there.

Amazon Reviews for Sentiment Analysis:

- 4,00,000 data
- Balanced dataset
- Better result in Real-Time review analysis

Run:

1. Open the code file into jupyter notebook.
2. Change the path of the dataset.
3. Import the necessary libraries.
4. And run all the cells.