ANALYSIS OF AMAZON CELL PHONE REVIEWS

Submitted By:
Aditya Dash

Project Description:

Description:

90 percent of the consumers read online reviews before they decide to purchase any Mobile phone from any e-commerce website .Online Mobile applications has revolutionised the way consumers purchase mobile phones online as these apps have all the information regarding any mobile phone at users finger tips. Amazon is one of the best mobile applications which is considered as a treasure trove of all mobile reviews, and their review system is accessible across all channels presenting reviews in an easy-to-use format. So,There should be a system which analyses thousands of reviews of unlocked mobile phones sold on Amazon.com to find insights with respect to reviews, ratings, price and their relationships.

Solution:

This project aims at building a model to predict the helpfulness of the review and the rating based on the review text. Corpus-based and knowledge-based methods can be used to determine the semantic similarity of review text. We will be using Natural language processing to analyse the sentiment (positive or a negative) of the given review . A sample web application is integrated to the model built.

Introduction:

There are huge number of customers who provide reviews based on their personal experience in sites like amazon. Their reviews are great assets in understanding thee worth of products. This project intends to capture the sentiment of the reviews of customers and classify it as positive review or negative review.

Sentiment Analysis:

Sentiment analysis is the interpretation and classification of emotions (positive, negative and neutral) within text data using text analysis techniques.

- This project uses Natural Language Processing (NLP) in tandem with Artificial Neural Network(ANN) to successfully extract the sentiment classification from the reviews.
- NLP tasks cover a the preprocessing of textual data to convert them to suitable format to be fed into the ANN model.
- Jupyter Notebook is the platform on which all of the model development is done.
- A sample web application is integrated with the model in post model development stage.
- The web application signifies the use of the model in real life scenarios.
- The web application is developed with "flask" framework of python.

Why Sentiment Analysis:

Business: In marketing field companies use it to develop their strategies, to understand customers' feelings towards products or brand, how people respond to their campaigns or product launches and why consumers don't buy some products.

Politics: In political field, it is used to keep track of political view, to detect consistency and inconsistency between statements and actions at the government level. It can be used to predict election results as well!

Public Actions: Sentiment analysis also is used to monitor and analyse social phenomena, for the spotting of potentially dangerous situations and determining the general mood of the blogosphere.

METHODOLOGY:

1. Data Collection
    1.1. Collect The Data
2. Text Preprocessing
    2.1. Import The Dataset
    2.2. Remove Punctuations, Numbers

2.3. Covert Each Word Into Its Lower Case
2.4. Apply Stemming
2.5. Splitting Data Into Training and Test Set

3. Model Building
   3.1. Importing The Model Building Libraries
   3.2. Initializing The Model
   3.3. Adding Input Layer
   3.4. Adding Hidden Layer
   3.5. Addding Output Layer
   3.6. Configure The Learning Process
   3.7. Train And Test The Model
   3.8. Optimize The Model
   3.9. Save The Model
4. Application Building
   4.1. Create An HTML File
   4.2. Build Python Code

Literature Survey:

Sentiment analysis is an evolving field of study which involves the process of evaluating and distinguishing the opinions or emotions expressed in a given text.
Amazon stores the comments and reviews commented by customers on different cell phones to convey their feelings and notions on the particular cell phone, This report indicates the usability of these reviews with the help of Sentiment Analysis.

Existing Problem:

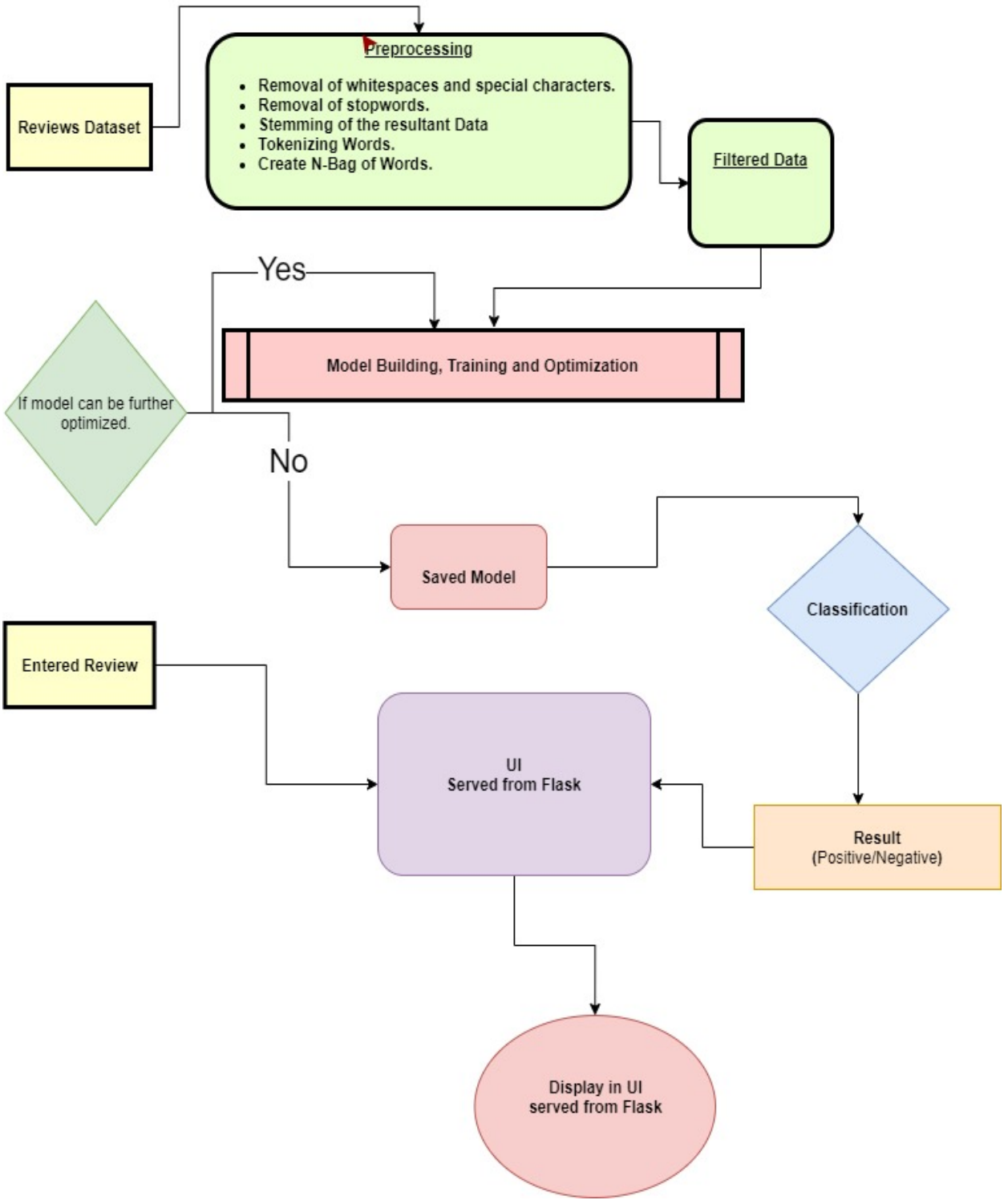
- Existing system akes a stored dataset into consideration.
- It fails to determine the impact the results might or will have in the respective field.
- Existing ystem does not allow the retrieval of data bases in the query entered by the user.
- Existing syste does not provide accurate feature selection.

Proposed Solution:

- Proposed system gives you the impact the results and statistics will have on the respective fiels.
- Proposed system allows retrieval of data based on the query entered by the user.

- Proposed system will provide accurate feature selection.

Theoritical Analysis:



Results:

The web application rendered through the Flask UI accepts a English review as input and outputs the classification of the review as positive or negative.

Below is a screenshot of output given by the model.
Click Here.

Advantages and Disadvantages:

Advantages:

- The use of this information can be applied to make wiser decisions related to the use of resources, to make improvements in organizations.
- Tracking people's feelings on products, services and events, which allow enterprise managers to have knowledge and parameters to decision-making.

Disadvantages:

- For reviews coupled with hashtags, emoticons and links, can create difficulties in determining the expressed sentiment.

Applications:

- Social media monitoring.
- People analytics and voice of employees.
- Voice of customer & Customer Experience Management.
- Regulatory Compliance.

CONCLUSION:

This model can capture the real sentiments of customers and can be used to develop or improve products in accordance with the needs of the customers. It can also be used to address negative reviews to improve customer satisfaction.

The model can sometimes fail to address sequence dependencies like difference between "not good" and "good". For example, if a review contains many "good" word preceded by "not" word, then the model could mistake this review for a positive one while actually it is a negative one.

The sentiment analysis is being implementing through deep learning techniques. Deep learning consists of numerous effective and popular models, these models are used to solve the variety of problems effectively. Different studies have been discussed in this review to provide a deep knowledge of the successful growing of deep learning applications in the field of sentiment analysis. Numerous problems have been resolved by having high accuracy of both fields of sentiment analysis and deep learning.

Future Scopes:

This model can form a base to predict a larger group of data. Besides positive or negative, it can predict the exact emotion or the sentiment based on certains parameters of data.
It can also be trained on different languages apart from English.
Hence, it can be a powerful tool in analysing data and sorting it based on the positive or negative effects.

References:

- https://www.wikipedia.org/ www.researchgate.net