

ZOMATO CUSTOMER REVIEWS SENTIMENT ANALYSIS

Abstract:

The NLP project aims to perform sentiment analysis model to predict the sentiment of Zomato restaurant reviews. Sentiment analysis is the process of identifying and extracting opinions and emotions from text. It is a widely used technique in natural language processing (NLP) and has many applications, such as social media analysis, customer feedback analysis, and market research.

The model in the project is built using an LSTM neural network. LSTM stands for long short-term memory, and it is a type of recurrent neural network (RNN). RNNs are well-suited for sequential data, such as text, because they can learn long-term dependencies in the data.

The model achieved a high accuracy on the held-out test set, which demonstrates its effectiveness for predicting the sentiment of Zomato restaurant reviews.

Methodology:

- 1. Data preprocessing:** The Zomato restaurant review dataset was preprocessed by cleaning the text and removing stop words.
- 2. Tokenization and padding:** The text reviews were tokenized into sequences of words and padded to a fixed length.
- 3. Model architecture:** The LSTM neural network model was designed with the following architecture:
 - I. Embedding layer: This layer converts the words in the input sequence into numerical vectors.
 - II. LSTM layer: This layer learns long-term dependencies in the input sequence.
 - III. Dense layer: This layer predicts the sentiment of the input sequence.
- 4. Model training:** The model was trained on the preprocessed dataset using the Adam optimizer and the categorical cross entropy loss function.
- 5. Model evaluation:** The model was evaluated on a held-out test set to assess its performance.

Technical Terms:

1. Sentiment analysis:

Sentiment analysis is the process of identifying the sentiment of a text, such as whether it is positive, negative, or neutral.

2. LSTM neural network:

A type of recurrent neural network that is well-suited for sequential data such as text.

3. Embedding layer:

A layer in a neural network that converts words into numerical vectors.

4. Dense layer:

A layer in a neural network that outputs a fixed number of values.