

ABSTRACT

BUILDING A REVIEW ANALYZER WITH NLP

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In the digital era, customer reviews play a pivotal role in shaping the reputation and growth of businesses, particularly in the food and hospitality sectors. This project, titled "Building a Review Analyzer With NLP", aims to develop an intelligent system capable of analysing restaurant reviews using Natural Language Processing (NLP) techniques. The system processes textual reviews submitted by users and automatically classifies them into positive, neutral, or negative sentiments. The primary objective is to provide businesses with real-time insights into customer feedback and to enhance decision-making by identifying service strengths and weaknesses.

The implementation leverages Python-based tools such as Flask for the web framework, scikit-learn for training a Naive Bayes classifier, and NLTK for natural language preprocessing. Reviews are cleaned, tokenized, and vectorized using a CountVectorizer with n-grams, after which the classifier predicts the sentiment. Additionally, a dynamic Plotly-based graph is generated to visualize sentiment distribution interactively. The model demonstrates high accuracy and efficiently handles real-time input, offering scalability and responsiveness for production use.

Keywords: : Customer Reviews , NLP , Sentiment Analysis , Flask , Naive Bayes , scikit-learn , Real-time Insights , Visualization.