

Airline Sentiment Analysis Using CNN

Sakshi

Student, Department of Computer Science and Engineering, VTURC, Kalaburagi Visvesvaraya Technological University, Centre of PG Studies, Kusnoor Road, Karnataka, India

Dr. Shubhangi D. C

Regional Director, Department of Computer Science and Engineering VTURC, Kalaburagi Visvesvaraya Technological University, Centre of PG Studies, Kusnoor Road, Karnataka, India

Abstract

This project presents a Sentiment Analysis system developed using Natural Language Processing (NLP) and a Convolutional Neural Network (CNN) model to classify airline tweets into positive, negative, and neutral sentiments. The text data is preprocessed by removing URLs, punctuation, special characters, and stop words, and then converted into numerical features for model training. The CNN model is trained and evaluated using accuracy and classification metrics to ensure effective sentiment prediction. The trained model and vectorizer are saved using Joblib, and a Streamlit web application is developed to provide real-time sentiment analysis for user input text. The application is further deployed using Pyngrok, enabling users to access the system online for analyzing customer opinions and feedback.

Keywords

Sentiment Analysis, Natural Language Processing, Deep Learning, Support Vector Machine, TF-IDF, Airline Tweets, Streamlit.