AI Echo: Your Smartest Conversational Partner

Domain: Customer Experience & Business Analytics

Project Type: NLP Based Sentiment Analysis System

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1. Executive Summary

AI Echo is an NLP-driven sentiment analysis project that analyzes ChatGPT user reviews to classify them into Positive, Neutral, or Negative sentiments.

The system helps organizations understand customer satisfaction, identify issues, and improve overall user experience through data-driven insights.

2. Problem Statement

User reviews are unstructured and difficult to analyze manually.

This project automates sentiment detection to extract actionable insights from customer feedback.

3. Business Use Cases

Customer Feedback Analysis

Brand Reputation Monitoring

Feature Enhancement & Issue Detection

Automated Complaint Prioritization

Marketing Strategy Optimization

4. Dataset Description

Dataset Name: chatgpt_style_reviews_dataset.xlsx

The dataset contains user reviews with ratings, platform details, location, version, and verification status.

5. Data Preprocessing

Removal of punctuation, special characters, and stopwords

Tokenization and lemmatization

Lowercase conversion

Handling missing values

Sentiment label creation from ratings

6. Exploratory Data Analysis (EDA)

Rating distribution analysis

Helpful vs non-helpful reviews

Positive vs negative keyword analysis

Sentiment trends over time

Platform, location, and version-wise insights

7. Sentiment Classification Models

TF-IDF Vectorization

Naïve Bayes

Logistic Regression

Random Forest

Optional Deep Learning (LSTM / Transformers)

8. Model Evaluation Metrics

Accuracy

Precision

Recall

F1-Score

Confusion Matrix

AUC-ROC Curve

9. Streamlit Dashboard

Interactive sentiment analysis dashboard

Real-time review classification

Trend analysis by date, version, and platform

Business-focused visual insights

10. Results & Insights

Majority of reviews are positive

Negative reviews highlight pricing and performance issues

Verified users show higher satisfaction

Mobile platform has comparatively lower ratings

11. Conclusion

AI Echo demonstrates how NLP can transform raw customer feedback into valuable business intelligence.

The project is scalable, deployable, and suitable for real-world applications.