Intel products sentiment analysis from online reviews

Solution

Our approach begins with scraping reviews from various sources and organizing them into a dataset.We meticulously preprocess and clean this data to ensure accuracy, addressing issues such as missing information and standardizing formats. Sentiment analysis is then performed using advanced models such as VADER and Roberta to classify the sentiments. The results are visualized using robust tools, allowing us to derive meaningful insights. This comprehensive solution provides a clear understanding of customer sentiment and helps inform strategic decisions for product development and marketing.

Features offered

- Positive, Neutral, Negative sentiment scores using VADER.
- Detailed sentiment scores using Roberta.
- Distribution of review ratings.
- Sentiment scores by rating.
- Comparison of sentiment scores across models.
- API integration with Google Generative AI for content generation and rating extraction.
- Summarization of key points and repeated points from reviews

Process Flow

Step 1: Data Collection and Preprocessing

- Read reviews from CSV files.
- Extract relevant columns and clean data.

Step 2: Sentiment Analysis

- Use VADER and Roberta models to analyze sentiment.

Process Flow

Step 3: Visualization

- Generate plots to visualize sentiment distribution and scores.

Step 4: Summarization

- Summarize key points and repeated points using Google Generative AI.

Technologies Used

Programming Languages and Libraries

- **Python**: Main programming language.
- **Pandas**: For data manipulation.
- **Seaborn, Matplotlib**: For data visualization.
- **NLTK, Transformers**: For sentiment analysis.
- **Google Generative AI**: For text generation and summarization.

Technologies Used

Models

- **VADER:** For sentiment scoring.
- **Roberta:** For detailed sentiment analysis.

Team members and contributions

- **Joshan Sam C -** Automated Review Rating Generation and Sentiment Analysis
- **Susan Jessica V** - Reviews scraping and data collection
- **Dhriti Vilina Manuel** - Data Extraction and Text Processing
- **Rithika** - Text Summarization
- **Hannah Jael A** - Literature review and presentation preparation

Conclusion:

In summary, the project successfully demonstrates the application of sentiment analysis on product reviews using advanced techniques and tools. The workflow, from data preprocessing to sentiment scoring and visualization, highlights the effectiveness of combining multiple technologies to extract valuable insights from unstructured data. This approach not only provides a comprehensive understanding of customer feedback but also sets the foundation for further enhancements in data analysis and visualization techniques. Future work will focus on refining these processes to achieve even more accurate and insightful results.