

Sentiment analysis for marketing

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Phase-2 Document Submission

Project : Sentiment analysis for marketing

Phase Two: Innovation

Fine-tuning pre-trained sentiment analysis models

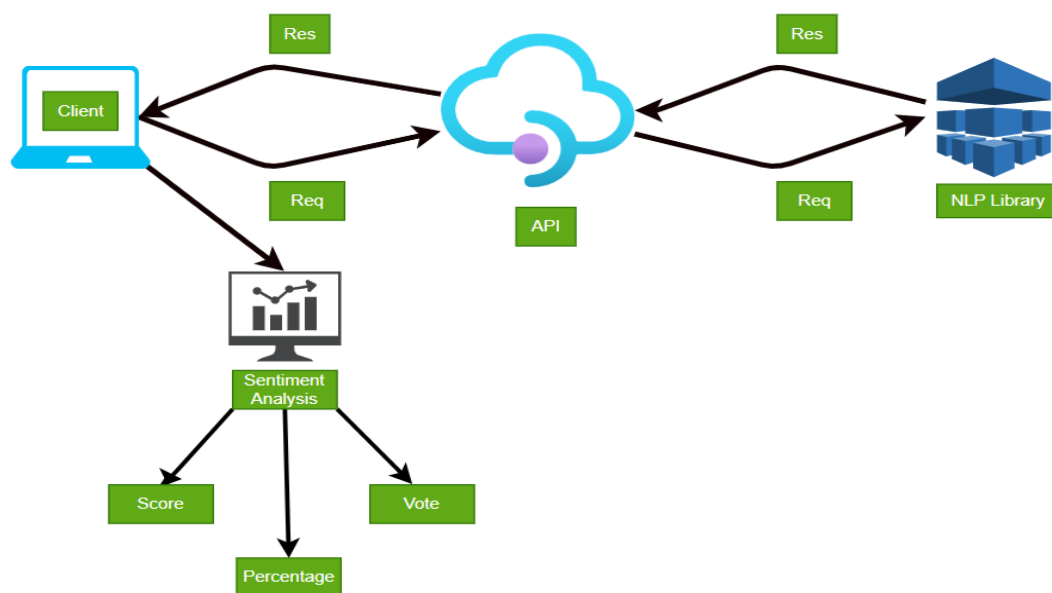
Fine-tuning pre-trained sentiment analysis models (such as BERT and RoBERTa) is a powerful technique that can be used to improve the accuracy of sentiment predictions. These models are trained on massive datasets of text and code, and they learn to capture the complex relationships between words and phrases. Fine-tuning allows us to adapt these models to our specific task of sentiment analysis on customer feedback.

To fine-tune a pre-trained sentiment analysis model, we first need to prepare a labeled dataset of customer feedback. This dataset should contain examples of positive, negative, and neutral feedback. We then need to choose a pre-trained model and tokenizer. The tokenizer will be used to convert the text in our dataset into a format that the model can understand.

Once we have prepared our dataset and chosen a model and tokenizer, we can start the fine-tuning process. This process involves training the model on our labeled dataset. During training, the model will learn to adjust its parameters to better predict the sentiment of customer feedback.

Once the model has been fine-tuned, we can use it to predict the sentiment of new customer feedback. To do this, we simply need to pass the - feedback text to the model. The model will then output a prediction of the sentiment (positive, negative, or neutral).

System Architecture :



Text

Here is a high-level overview of how this could work:

1. The user enters their feedback text into a text box on the web page.
2. The web application sends the feedback text to the API.
3. The API calls the fine-tuned sentiment analysis model to predict the sentiment of the feedback text.
4. The API returns the model's prediction to the web application.
5. The web application displays the prediction to the user.

In addition to displaying the prediction, the web application could also display other information, such as:

- The percentage of the feedback text that is positive and negative.
- The number of positive and negative words in the feedback text.
- A list of the most positive and negative words in the feedback text.

This information could be useful for businesses in understanding what customers like and dislike about their products and services.

Benefits of using fine-tuned sentiment analysis models

Fine-tuned sentiment analysis models have several benefits over traditional sentiment analysis methods. First, they are more accurate. Second, they are more robust to noise and ambiguity in the text. Third, they can be used to identify the specific aspects of a product or service that customers like **and dislike**.

Sentiment analysis can be used for a variety of marketing projects, including:

- Understanding customer needs and preferences: Sentiment analysis can be used to analyze customer reviews, social media posts, and other forms of feedback to understand what customers like and dislike about a product or service. This information can be used to improve the product or service, develop new marketing campaigns, and target the right customers with the right message.
- Improving customer service: Sentiment analysis can be used to identify customer complaints and issues. This information can be used to improve customer service by resolving these issues quickly and effectively.
- Monitoring brand reputation: Sentiment analysis can be used to monitor how customers are talking about a brand online. This information can be used to identify potential problems and take corrective action before they damage the brand's reputation.

Here are some specific examples of how sentiment analysis can be used for marketing projects:

- A company can use sentiment analysis to analyze customer reviews of its products to identify common complaints and areas for improvement.
- A social media team can use sentiment analysis to monitor customer conversations about their brand and identify potential problems or crises.
- A marketing team can use sentiment analysis to track the performance of their advertising campaigns and identify which campaigns are most effective.
- A product development team can use sentiment analysis to gather feedback on new product ideas and identify features that are most important to customers.

Sentiment analysis is a powerful tool that can be used to improve marketing efforts in a variety of ways. By understanding customer sentiment, businesses can make better decisions about how to develop, market, and sell their products and services.

Conclusion :

Fine-tuning pre-trained sentiment analysis models is a powerful technique that can be used to improve the accuracy of sentiment predictions. This technique can be used to develop web applications that help businesses understand what customers like and dislike about their products and services.