WEEK 12 – Session 1

NLP use case - Sentiment analysis (SA)

With advancements in technology and fields like deep learning, sentiment analysis is becoming more and more common for companies that want to gauge their customers' sentiments.

Today, businesses use natural language processing, statistical analysis, and text analysis to identify the sentiment and classify words into positive, negative, and neutral categories.

The best companies understand the importance of understanding their customers' sentiments – what they are saying, what they mean and how they are saying. You can use sentiment analysis to identify customer sentiment in comments, reviews, tweets, or social media platforms where people mention your brand.

As sentiment analysis is the domain of understanding emotions using software,

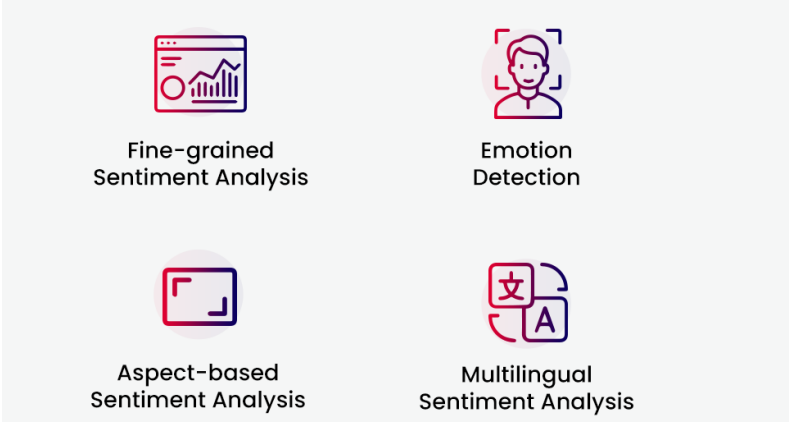
What is sentiment analysis?

> Sentiment analysis is analytical technique that uses statistics, natural language processing, and machine learning to determine the emotional meaning of communications.
>
> Sentiment analysis is often performed on textual data to help businesses monitor brand and product sentiment in customer feedback and understand customer needs.

Recent advancements in machine learning and deep learning have increased the efficiency of sentiment analysis algorithms. You can creatively use advanced artificial intelligence and machine learning tools for doing research and draw out the analysis.

For example, sentiment analysis can help you to automatically analyze 5000+ reviews about your brand by discovering whether your customer is happy or not satisfied by your pricing plans and customer services. Therefore, you can say that the application of sentiment is endless.

Types of Sentiment Analysis



Depending on how you interpret customer feedback, you can classify them and meet your sentiment analysis. However, below are some of the popular sentiment analysis classifications:

1. Fine-grained Sentiment Analysis

If your business requires the polarity precisions, then you can classify your polarity categories into the following parts:

Very positive

Positive

Neutral

Negative

Very Negative

For polarity analysis, you can use the 5-star ratings as a customer review where very positive refers to a five-star rating and very negative refers to a one-star rating.

2. Emotion Detection

This type of sentiment analysis helps to detect customer emotions like happiness, disappointment, anger, sadness, etc. Here, you can use sentiment lexicons or complex machine learning algorithms to identify the customer's feelings.

One of the disadvantages of using sentiment lexicons is that people tend to express emotions in different ways. So, it may be confusing to understand human emotion clearly while using it.

3. Aspect-based Sentiment Analysis

Let's say that you are analyzing customer sentiment using fine-grained analysis. You want to identify the particular aspect or features for which people are mentioning positive or negative reviews. Here, aspect-based sentiment analysis comes into play.

For instance, in the review "The camera quality of this phone is getting worse with time," an aspect-based classifier will determine that the review expresses a negative opinion from the customer for the phone's camera feature.

4. Multilingual Sentiment Analysis

Multilingual sentiment analysis is complex compared to others as it includes many preprocessing and resources available online (i.e., sentiment lexicons). Businesses value the feedback of the customer regardless of their geography or language. Therefore, multilingual sentiment analysis helps you identify customer sentiment irrespective of location or language difference.

Why is Sentiment Analysis important?

Let us look at the overall benefits of sentiment analysis in detail:

Sort Data at Scale

There is too much business data to analyze daily. Can you imagine sorting all these documents, tweets, customer support conversations, or surveys manually? Sentiment analysis will help your business to process all this massive data efficiently and cost-effectively**.**

Real-Time Analysis

Is your angry customer about to churn? Is a PR crisis on social media escalating? Sentiment analysis will help you handle these situations by identifying critical real-time situations and taking necessary action right away.

Consistent Criteria

According to research, customers only agree for 60-65% while determining the sentiment of the particular text. Tagging text is highly subjective, influenced by thoughts and beliefs, and also includes personal experience. Therefore, you can apply criteria and filters to all your data, improve their accuracy, and gain better insights using sentiment analysis.

Business applications for Sentiment Analysis

- Reputation management and online brand monitoring
- Monitoring your own message
- Investment intelligence
- Market research and competition monitoring
- Crime prevention