SENTIMENT ANALYSIS: UNVEILING THE POWER OF A.I

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Introduction

SENTIMENTAL ANALYSIS

Sentiment Analysis is an NLP technique focused on understanding the emotional tone within textual data.

The primary goal is to determine whether the expressed sentiment in the text is positive, negative, or neutral.

Involves the use of machine learning algorithms and linguistic analysis to automatically categorize and quantify sentiments.

2

SENTIMENT ANALYSIS CATEGORIES

3 Main Categories of Sentiment Analysis

CATEGORIES

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Positive Sentiment: Text expressing happiness, satisfaction, or approval, conveying a favorable outlook or positive opinion.

Negative Sentiment: Text articulating discontent, disappointment, or criticism, reflecting an unfavorable perspective or negative opinion

Neutral Sentiment: Text with an absence of strong emotional tone, presenting information objectively without conveying a distinctly positive or negative viewpoint.

How Sentiment Analysis Works

SENTIMENT ANALYSIS

5

Steps in Sentiment Analysis

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Data Collection and Preprocessing

Gather textual data from different sources and clean it by removing irrelevant information, handling errors, and standardizing the format.

Feature Extraction and Tokenization

Break down the text into smaller units (tokens) and identify relevant features or attributes to facilitate analysis.

Sentiment Classification Model

Use machine learning algorithms trained on labeled datasets to classify text into positive, negative, or neutral sentiments.

Training and Evaluation

Train the model on labeled data, evaluate its performance using metrics like accuracy, precision, and recall.

Deployment and Improvement

Implement the trained model to analyze sentiments in real-time data, making it applicable for various applications and improve it further more in the future

Challenges in Sentiment Analysis

Sarcasm and Irony: Detection of sarcastic or ironic expressions in text poses a challenge due to the need for understanding context, tone, and subtle linguistic cues.

Context-Dependent Sentiment: Sentiment can vary based on context, making it challenging for models to accurately interpret the emotional tone of words or phrases in different situations.

Domain-Specific Nuances: Sentiment analysis models may struggle when faced with industry or community-specific language patterns, requiring customization and additional training on domain-specific data.

Negation and Double Negation: Dealing with negations, where words reverse sentiment, and handling complex negation structures present challenges for sentiment analysis models.

APPLICATION OF SENTIMENT ANALYSIS

Social Media Monitoring: Sentiment analysis is employed to track and understand public opinions on social media, enabling businesses to engage with customers in real-time and manage their online reputation effectively.

Customer Feedback Analysis: Sentiment analysis is utilized to analyze customer reviews and feedback, providing businesses with valuable insights into customer satisfaction levels and guiding improvements in products or services.

Financial Markets: In the financial sector, sentiment analysis is applied to analyze textual data, such as news and social media, to assess market sentiment, inform investment decisions, and manage risks in financial markets.