


Chapter 17

Machine Learning and Sentiment Analysis for Analyzing Customer Feedback: A Review


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ABSTRACT

The rapid transformation in the business domain enhances the understanding that to achieve competitive advantage, corporates need to understand customer sentiments. The abundance of customer data as customer feedback, product reviews, and posts on social media platforms provides an in-depth insight that can navigate strategic decisions and inflate customer experiences. In this context, the unification of machine learning and sentiment analysis emerges as a potent combination for extracting emotional traces from volumes of unstructured text data. This chapter searches into the sphere of analysis techniques of sentiment analysis for analyzing customer feedback, where the convergence of advanced machine learning techniques with sentiment analysis methods empowers businesses to derive valuable insights from the feedback gathered from various touch points. By decoding sentiments and opinions hidden within textual data, this approach enables organizations to capture a clear view on customer satisfaction, identify their pain points, uncover emerging trends, and tailor offerings accordingly.

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1. INTRODUCTION

In an age where customers with digital voices are louder and more influential than ever, this association of machine learning and sentiment analysis emerges as a compass for guiding businesses to have a deeper understanding of their clientele. As we navigate through the chapter, we will explore the foundations of sentiment analysis and its significance in the modern business landscape. We will probe into the elaborate working of machine learning algorithms that drive sentiment analysis, unfold their capacity to comprehend the complexities of human expression. Additionally, we will examine various aspects different collaborative approaches with real life applications.

1.1 Understanding Sentiment Analysis

Sentiment analysis, alternatively known as opinion mining, is a natural language processing (NLP) approach that is used to recognize the emotional tone expressed by a customer in a text or other forms of communication. Its objective is to automatically categorize the sentiment of the text, labelling it as positive, negative, or neutral. In some cases, it goes a step further by classifying sentiments into specific categories like “happy”, “angry”, or “sad”. This technique is widely used across various industries for understanding customer opinions, market trends, social media sentiment, and more. Figure 1 explains the sentiment analysis (Tonic, 2018).

Understanding customer sentiment

*Figure 1. Sentiment analysis
(Tonic, 2018)*



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