

Chapter 3

Real Time Emotion Recognition From Text Using Deep Learning and Data Analysis

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ABSTRACT

In the era of digital communication, understanding human emotions expressed through text has become increasingly vital, this increases the importance of accurate emotion recognition from text, which can be useful in various applications. This research paper delves into the realm of text-based emotion recognition precisely identifying and categorizing the emotions expressed in textual content by using a deep learning approach such as Bi-LSTM. Presently, a significant portion of ongoing research primarily centers on the classification of text based on sentiments, with a small fraction focusing towards emotion recognition, particularly within the context of business applications. The principal objective of our research is to bridge the gap between the business organizations and the customers by analyzing the customer reviews based on emotion classification. This helps furnish organizations with a systematic approach to comprehend customer emotions, providing a more precise evaluation of product performance.

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1 INTRODUCTION

In order for living things to communicate effectively, emotional expression and emotion understanding are essential. These feelings can be expressed verbally, in writing, or through facial expressions. The relationship between an individual's emotions and interests is crucial for ideas to be implemented successfully in a variety of sectors, including social welfare and product creation.

Nowadays, most information is found in text form. This is shown in tweets from social media, expertise shared on websites, and customer reviews of products. Text analysis goes beyond typical sentiment analysis, which divides sentiments into three general categories: positive, negative, and neutral. The difficulty is in figuring out the nuanced feelings that are hidden in words. Although sentiment analysis has its uses, it is unable to fully represent the complex spectrum of feelings that are communicated in written language.

Emotion recognition has become an important area of study in computational linguistics and natural language processing. Emotion recognition, in contrast to standard sentiment analysis, attempts to anticipate particular emotional states, including a wide range of emotions such as joy, sadness, anger, and others (Wang et al., 2019). Applications like reputation management and customer feedback analysis, where a thorough grasp of human emotions is essential, benefit greatly from this change in emphasis.

The ineffective use of customer service personnel is a common problem in contemporary companies. The large staff frequently becomes overburdened in reading and replying to each and every review from customers, which eventually results in the accumulation and forgetting of important issues and feedback. Businesses can save time and effectively prioritize and handle critical issues by utilizing the emotions indicated in product evaluations as a helpful tactic. This study examines how important emotion recognition is for improving communication, especially when it comes to customer feedback analysis and resource optimization for customer service.

1.1 Brief Introduction of Emotion Recognition

The capacity to interpret and understand textual expressions of human emotions is extremely important in the rapidly changing world where communication often happens through text. Artificial intelligence is gaining momentum in the field of emotion recognition, which aims to interpret the complex delicacies of emotion in text. The significance of precise emotion detection is becoming more and more clear as technology develops, especially when it comes to the study of customer feedback. With a focus on feedback analysis from customer evaluations, this section seeks to give a brief summary of the wider implications of emotion identification. Gaining a deeper understanding of user experiences through the capacity to extract emotional insights from customer feedback is essential for making well-informed decisions and developing strategies for improving products.

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