

1. Introduction

Social media has become an important platform where people express their emotions. In the research conducted by Bjorn Schuller et al., emotion is divided into four basic emotions such as happiness, anger, sadness, and fear [1]. These emotions are not just personal feelings but also influence how people interact and respond to each other online. For example, being happy can make people feel optimistic and make relationships stronger. Being angry can lead to arguments. Afraid can make you more aware of certain issues. Being sad can encourage people to support and help each other. These emotional expressions, as discussed by Mei Silviana Saputri and others, show how emotions affect digital interactions [2] [3].

Even though studying emotions on social media is useful, it comes with challenges. Ideally, the classification of emotions should be accurate and understand the context well, but in practice, there are several obstacles, such as informal language (e.g., slang and abbreviations), unequal distribution of data, and overlapping words between different emotion categories. These challenges often reduce the effectiveness of traditional models.

Traditional methods like Naive Bayes and Support Vector Machines are simple and efficient, but they often fail to understand the complexity of social media text that people usually use, especially when it includes informal language [4]. On the other hand, deep learning models like Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM), and transformer-based models such as BERT (Bidirectional Encoder Representations from Transformers) and ALBERT (A Lite BERT) have shown better performance in understanding complex text, especially social media text [5].

ALBERT, a simplified version of BERT, is designed to reduce computational requirements while still providing strong contextual understanding, as shown in benchmarks like GLUE and SQuAD [5]. Based on research conducted by Zhenzhong Lan et al., the ALBERT model has excellent potential in text emotion classification tasks especially in overcoming informal and ambiguous language that often appears in social media texts, where this type of text is similar to text that appears on GLUE [5]. Although the ALBERT model is suitable for the task of text emotion classification, its use is still limited, so this research analyzes the challenges faced and also how to solve them. In this research, model fine-tuning is carried out which aims to match the pre-trained ALBERT model to the tasks and datasets used. Model tuning in this research includes hyperparameter tuning to improve performance and the application of AdamW optimizer and also early stopping in the design to mitigate overfitting.