Emotion Classification Based on Social Media Text Upload Patterns Using the ALBERT Method

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Abstract

Emotion classification in social media texts has several challenges, such as the characteristics of social media texts that tend to use informal language, unbalanced data distribution, and overlapping vocabulary between emotion categories. This research explores the ability of the ALBERT model to overcome these challenges by performing data augmentation and hyperparameter tuning and using a dataset of 8,978 tweets labeled with four emotion categories: happy, angry, sad, and fear. This research investigates the impact of hyperparameter tuning and shows a hyperparameter combination that is suitable for the challenges at hand. The hyperparameter combination concerns a learning rate of 1e-5 and batch size of 8 and getting an accuracy value of 89.95% with an F1 Score of 0.8959. The analysis in this research conveyed that the small learning rate tends to have an impact on the ability of the ALBERT model to capture emotional patterns well and in detail. Although ALBERT is considered to be able to handle informal language, it still struggles with unbalanced data distribution and overlapping vocabulary between emotion categories. The results of this study suggest that ALBERT can perform the task of emotion classification in text well and suggest future research to improve by improving preprocessing methods and performing more advanced regulation techniques.

Keywords: Emotion Classification, ALBERT, Social Media Analysis, Natural Language Processing, Hyperparameter Optimization.