Optimasi Learning Rate dan Epoch pada Proses Fine-Tuning Terhadap Performansi indoBERT Dalam Analisis Sentimen Ulasan Aplikasi MyTelkomsel

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Abstract

With the advancement of the digital era, the growth of mobile applications in Indonesia is rapidly increasing, particularly with the MyTelkomsel app, one of the leading applications with over 100 million downloads. Given the large number of downloads, user reviews become crucial for improving the quality of services and products. This study proposes a sentiment analysis approach utilizing the Indonesian language model, IndoBERT. The main focus is on optimizing the learning rate and epochs during the fine-tuning process to enhance the performance of sentiment analysis on MyTelkomsel app reviews. The IndoBERT model, trained with the Indo4B dataset, is the ideal choice due to its proven capabilities in Indonesian text classification tasks. The BERT architecture provides contextual and extensive word vector representations, opening opportunities for more accurate sentiment analysis. This study emphasizes the implementation of fine-tuning with the goal of improving the model's accuracy and efficiency. The test results show that the model achieves a high accuracy of 96% with hyperparameters of batch size 16, learning rate 1e-6, and 3 epochs. The optimization of the learning rate and epoch values is key to refining the model. These results provide in-depth insights into user sentiment towards the MyTelkomsel app and practical guidance on using the IndoBERT model for sentiment analysis on Indonesian language reviews.

Keywords: Epoch, Fine-tuning, IndoBERT, Learning rate, MyTelkomsel, Sentiment Analysis