

## ABSTRACT

Artificial Intelligence (AI), which has been rapidly advancing, was widely utilized across various sectors, including education. However, its use in academia raised concerns regarding plagiarism, grading fairness and academic integrity. Previous researchers developed classification models using classical machine learning and advanced deep learning methods. However, these models were found to be less optimal in distinguishing between human-written text and generative AI text. Consequently, other studies employed Convolutional Neural Network (CNN) as a simpler yet effective alternative for capturing text patterns. On the other hand, existing studies often relied on default hyperparameters. Therefore, this study aimed to optimize hyperparameter settings to improve model accuracy. This experimental results demonstrated that using IndoBERT embeddings outperformed feature extraction with TF-IDF, achieving an accuracy of approximately 95.09%. Furthermore, the model with optimized hyperparameters, combining a learning rate of 0.01 and a batch size of 32, achieved superior performance with an accuracy of 95.85%. These findings indicated that employing IndoBERT embeddings and hyperparameter optimization in CNN effectively distinguished human-written texts from generative AI texts.

**Keywords** : Human-Written Texts, Generative AI, IndoBERT, Hyperparameter Optimization, Convolutional Neural Network