

Abstract (English)

Depression has become a significant public health concern in Indonesia, with many individuals expressing mental distress through social media platforms like Twitter. As mental health issues like depression are increasingly prevalent in the digital age, social media provides a valuable avenue for automated detection via text, though obstacles such as informal language, vagueness, and contextual complexity in social media complicate precise identification. This study aims to develop an effective depression detection model using Indonesian tweets by combining Convolutional Neural Networks (CNN) and Bidirectional Long Short- Term Memory (BiLSTM). The dataset consisted of 58,115 tweets, labeled into depressed and non-depressed categories. The data were preprocessed, followed by feature extraction using BERT and feature expansion using FastText. The FastText model was trained on three corpora: Tweet, IndoNews, and combined Tweet+IndoNews corpus; the total corpus will be 169,564 entries. The best result was achieved by BiLSTM model with 84.67% accuracy, a 1.94% increase from the baseline, and the second best was the BiLSTM-CNN hybrid model achieved 84.61 with an accuracy increase of 1.7% from the baseline. These result indicate that combining semantic feature expansion with deep learning architecture effectively improves the accuracy of depression detection on social media platforms. These insights highlight the importance of integrating semantic enrichment and contextual modeling to advance automated mental health diagnostics in Indonesian digital ecosystems.

Keywords : *BERT, BiLSTM, CNN, Depression detection, FastText, Social Media.*