ABSTRACT

Depression is a growing mental health issue in the modern era, with social media offering a unique opportunity for automated detection through text analysis. However, challenges such as unstructured language, ambiguity, and contextual complexity in social media text hinder accurate detection. This research aims to develop and evaluate a hybrid deep learning model to detect depression in Indonesian social media text. A data set of 50523 entries was obtained and cleaned and TF-IDF was used for feature extraction while FastText was used for feature expansion. The classification was done by using Convolutional Neural Networks (CNN), Long Short-Term Memory (LSTM), and a combination of both CNN and LSTM models and the performance of the models was measured using the accuracy, precision and recall scores. The experimental results showed that the LSTM model gave the best result in terms of accuracy which is 83.58%, the second best was the LSTM-CNN hybrid model with an accuracy of 83.20%. The current study thus provides a new approach for identifying depression in Indonesian language data and can be said to significantly advance the fields of informatics and computer science. It also shows how AI can be utilized in improving mental health practices and in designing better social media environments. The findings of this study contribute to the growing body of research on cross-cultural mental health detection and highlight the importance of developing language-specific machine learning models.

Keywords: *Depression detection, soial media, CNN, LSTM, TF-IDF, FastText*