

Abstract

Advances in information technology, particularly social media platforms such as Twitter, can be used to explore public sentiment around the much-discussed 2024 Indonesian Presidential Election. Using sentiment analysis as part of text mining, we focus on distinguishing positive and negative polarity using Natural Language Processing (NLP) techniques with to detect the accuracy of tweet polarity regarding the 2024 Indonesian Presidential Election. Specifically, we implement the Bidirectional Long Short-term Memory (Bi-LSTM) method, an enhanced version of LSTM, for sentiment analysis. The text is preprocessed, TF-IDF is used for word importance weighting, and Word2Vec is used for efficient learning of high-quality words. To optimize the accuracy of the model, we used Genetic Algorithm (GA), a heuristic approach rooted in the principles of genetics and natural selection. GA operates on a chromosome-based population, aligned with Darwinian evolutionary concepts. This research aims to compare the accuracy of the Bi-LSTM model with various feature extraction methods, including TF-IDF and Word2Vec, in measuring the polarity of election-related tweets. This research highlights the comparison and improvement of the accuracy of each scenario in the built model. The accuracy score results in this research was 83%, where the accuracy score increases from the baseline by 7.98%.