ABSTRACT

The development of technology and the internet has transformed how Indonesian society accesses information, with more than 132 million internet users now relying on digital media as their primary news source. This transformation poses an increasingly concerning risk of fake news dissemination, particularly through social media platforms such as Facebook, YouTube, and Instagram, which are used by approximately 50% of the population to obtain information. This phenomenon negatively impacts public opinion, social trust, and social stability, necessitating effective methods for classifying Indonesian-language news (fake and authentic) circulating in digital media. This research proposes a fake news detection model by integrating Indonesian Bidirectional Encoder Representations from Transformers (IndoBERT) as a feature extractor and Support Vector Machine (SVM) as a classifier to optimize classification accuracy. The implementation process begins with fine-tuning the pre-trained IndoBERT model using AdamW Optimizer by combining the most optimal weight decay, learning rate, and batch size, resulting in a validation accuracy of 96.25%. The [CLS] token of size 1×768 from the IndoBERT training results is then extracted as input for the SVM model. SVM parameter optimization is performed using Grid Search and K-Fold Cross Validation with 20 different parameter combinations, where the best combination is $C = 10$ and $\gamma = 0.001$ with perfect validation accuracy (100%). The resulting model is then evaluated and achieves excellent performance on testing data with an accuracy of 93.75%, precision of 97.30%, recall of 90%, and F1-score of 93.51%. These results demonstrate that IndoBERT and SVM are capable of classifying Indonesian-language news effectively and in a balanced manner, providing a practical solution to improve the accuracy of information filtering in digital media and reduce the spread of disinformation.

Keywords : News classification, natural language processing, IndoBERT, SVM