ABSTRACT

Waste management issues have become a serious concern worldwide due to the increasing amount of solid waste every year. To address this, a system utilizing Computer Vision and Deep Learning technology is proposed to assist in waste classification. This study focuses on the performance comparison of ResNet152V2 and MobileNetV3Large architectures with Waste Classification Data dataset from the kaggle site. This study involves literature review, data collection, data preprocessing, model implementation, and performance evaluation using 4 metrics, namely accuracy, precision, recall, and F1-score. The results show that MobileNetV3Large has the best performance with an accuracy of 0.9280 and a loss of 0.2097, while ResNet152V2 achieves an accuracy of 0.9156 with a loss of 0.2537. However, some scenarios experience overfitting due to the quality of the dataset and model configuration. To improve accuracy, it is recommended to add epochs, use a more complex architecture, and clean the dataset so that the model is more effective in recognizing organic and inorganic waste, thus supporting more efficient waste management.

Keywords: *classification, waste, organic, recyclable, resnet152v2, mobilenetv3large*