

ABSTRACT

Banana is the most widely produced plant in Indonesia, therefore it is important for banana farmers in Indonesia to be able to overcome the problem of pests and diseases of banana plants that can harm banana farmers, one of the efforts made in this study is to implement a hybrid CNN-ViT model that can identify diseases in banana leaves so that banana farmers can find out what diseases are experienced by their banana plants, the model implemented is using the BananaLSD dataset which has a total of 937 images with four classes, namely cordana, healthy, pestalotiopsis, and sigatoka. The ViT model variant used is ViT-B16, the hybrid CNN-ViT model that has been implemented has succeeded in obtaining high performance such as accuracy of 99.47%, precision of 99.48%, recall of 99.47%, and F1-score of 99.47%, the performance metrics of the model obtained show that the hybrid CNN-ViT model can identify diseases in banana leaves more accurately than single models such as CNN or ViT alone.

Keywords: CNN, ViT, Hybrid, Banana