

ABSTRACT

LETTUCE DISEASE DETECTION USING CNN ALGORITHM BASED ON ANDROID

By:

NANDA SATRIA PUTRA

2111010082

E-mail: nandaet16@gmail.com

Detecting diseases in lettuce plants is a crucial step in improving crop yields and reducing farmers' losses. This study aimed to develop an Android-based application for lettuce disease detection using the Convolutional Neural Network (CNN) algorithm. The dataset was 2,320 images obtained from Kaggle, including healthy, bacterial, fungal, and shepherd diseases. The model was trained using TensorFlow and implemented through TensorFlow Lite for efficient execution on Android devices. The results showed that the CNN model achieved an accuracy of 93.67% in classifying lettuce plant diseases. The application was equipped with features such as real-time detection, diagnosis history, and treatment recommendations for each identified disease. However, some limitations remain, such as the general classification of diseases and the potential for improved accuracy with more advanced techniques or parameter tuning. This application was expected to help lettuce farmers identify and treat plant diseases more promptly, increasing agricultural efficiency and productivity.

Keywords: Plant Disease Detection, Convolutional Neural Network, TensorFlow Lite, Android, Lettuce

