**Fine Tuning and Comparison of MobileNet, InceptionV3, and CropNet to Classify Cassava Plant Disease**

**Grady Matthias Oktavian**

**Pradita University**

gradyoktavian@gmail.com

**ABSTRACT**

Computer Vision is a branch in Artificial Intelligence which attempts to make machines able to understand and solve problems relating to images and photos. One of the fields that offers computer vision an opportunity to contribute is plant disease detection. In sub\_x0002\_Saharan Africa, Cassava (Manihot esculenta Crantz) is widely grown and considered to be a large source of carbohydrates for human food. However, the plant is plagued with diseases which can threaten food supply for millions of people. By using computer vision, researchers attempted to create an image classification model that can tell farmers whether the plant is sick or not by taking pictures of their leaves. In this short paper, the author attempts to use transfer learning on three Convolutional Neural Network: CropNet, MobileNet, and InceptionV3 on a cassava disease dataset provided by Kaggle to compare their performance and accuracy. Turns out, transfer learning is a very effective method to quickly train a robust model with a relatively good accuracy score.

*Keywords: Computer Vision; Machine Learning; Neural Network; Deep Learning; Image Classification; Artificial Intelligence*