

ABSTRACT

Arabica coffee beans have different flavors and shapes, making it one of the most valuable coffee commodities in the world. The process of choosing coffee beans is known as sorting in the coffee industry. Identifying and classifying coffee beans can be a difficult and time-consuming task to do manually.

This final project uses Convolutional Neural Network (CNN) with the MobileNetV2 architecture. With good performance, coffee beans are classified using the MobileNetV2 Architecture. Hyperparameters consisting of epoch, batch size, and learning rate will be optimized to improve the performance of the CNN model.

The goal of this final project was to find the ideal hyperparameters that would give a good performance to the CNN model. It used four classes of coffee beans, including Premium, Longberry, Peaberry, and Defect, which would be classified according to the shape and color of each coffee bean.

Experiments have been carried out, showing that determination of hyperparameters greatly affects the performance of the model. With a learning rate of 0.0001, batchsize 16, and epoch 30, it gets an accuracy of 88.19%, accurateness of 96.74%, recall of 89%, and f1-score of 92.71%.

Keywords: *Coffee Beans, Arabica, Classification, Sorting, CNN, MobileNetV2*