

ABSTRACT

IMPLEMENTATION OF DEEP LEARNING FOR WASTE CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK

By:
ANNISA YOLANDA PUTRI
1811010109

Trash is an item that is no longer used and has no function. The CNN method is one of the methods in Deep Learning which has several advantages and there have also been many previous studies that use CNN as a pattern recognition method, especially image classification. Therefore, Convolutional Neural Network is used in this study to be able to recognize and classify non-organic waste consisting of plastic, glass, or cans. Convolutional Neural Network CNN model in this study uses an input shape of 256x256, a learning rate value of 0.1, a filter size of 3x3, a total of 30 epochs, 480 training data, and 120 testing data. Resulting in training and testing accuracy levels in classifying non-organic and organic waste images of 82% training and 79% testing. The scenario of using the learning rate value obtained the best accuracy level using a learning rate value of 0.1 with a batch size value of 32, epoch value of 30 and using VGG19 architecture, with 79% accuracy.

Keywords: Trash, Deep Learning, Convolutional Neural Network, VGG19