ABSTRACT

From time to time, humans race in developing the latest technology. One technology that is developing intensively in society is artificial intelligence (AI). Deep learning is a machine technology with good features for image classification. A common part of deep learning in image classification is the convolutional neural network (CNN). Mount Merbabu National Park is a national park that includes forest areas, there are various disturbing plants or weeds where this plant is one of the plants in the area. Weeds are plants whose existence is not expected by humans, because they can disturb the natural balance and compete with other plants. First we have to know the types and biological needs so that weeds can be eradicated.

Based on this research, the writer classifies weed images. The author used 2 classes of weed species, namely Ageratina riparia with 1200 images and Austroeupatorium inulifolium with 1000 images. CNN has steps in image classification, such as data acquisition steps, pre-processing steps, learning cellular network architecture steps, and CNN classification steps.

There are several parameters in classifying, namely: optimizer, batch size, and learning rate to get the best model. Then the test results, accuracy and loss are analyzed. This research resulted in the best model in weed classification, namely with a mobile net architecture, batch size 16, optimizer RMSprop, and learning rate of 0.00001 has an accuracy of 100% and a loss of 9.9%. Apart from the parameters above, there are also other parameters to determine the performance of the model, namely: Precision, recall, and F1-score.

Kata Kunci : Convolutional Neural Network, classification of weeds, weeds.