ABSTRACT

Fungi are a very interesting group of organisms that have their own kingdom, Fungi. Mushrooms have various shapes, sizes and colors. We can find mushrooms in almost all corners of the world. In Indonesia alone it is estimated to have 200,000 species of fungi from 1.5 million - 3 million fungi in the world. While some mushrooms are edible and have high nutritional value, there are also poisonous mushrooms that can cause morbidity and even death for those who consume them. So an analysis is needed to distinguish them.

In this research, it is proposed to design a classification system for edible and inedible mushrooms using the Convolutional Neural Network (CNN) method with the EfficientNet architecture. In addition, this research utilizes digital images derived from secondary data, namely the Kaggle platform. This study carried out an image acquisition process with a dataset consisting of 2 classes. The class consists of 3000 images of poisonous mushrooms and 3000 images of edible mushrooms. The overall dataset is divided into 80% training data, 20% test data.

In this research, several parameters were tested that affect system performance, including image size, optimizer, learning rate, epoch value, and batch size. 5 test scenarios were carried out. After testing the scenario, the results will be analyzed using test parameters. So that the optimal parameters are obtained, namely image resizing 224x224 pixels, Nadam optimizer, epoch 60, learning rate 0.0001 and batch size 16. With an accuracy value of 89% and a loss value of 0.7963.

Kata Kunci: *Fungi, Convolutional Neural Network, Image, EfficientNet.*