ABSTRACT

Indonesia is a country with a high demand for rice. This makes farmers have to produce rice in large quantities and of good quality. However, several factors can reduce the quality and quantity of agricultural products, one of which is disease attacks on rice plants which are too late to be analyzed and have reached a severe stage, causing crop failure. Ignorance of farmers as well as limited and lack of information about diseases and proper treatment are factors that cause delays in handling diseases in rice leaves. The purpose of this study was to apply the ResNet34 and ResNet101 architectures for the classification of leaf diseases in rice. Residual Network (ResNet) is one of the architectures of CNN. ResNet is an architecture for deep learning methods. This study will compare two types of Resnet, namely Resnet34 with Resnet 101 and using RMSProp optimizers. Testing through two scenarios, for the first scenario consists of three types of disease and the second scenario consists of four types of disease and each consists of 40 images. The types of disease in question are Bacterial Leaf Blight, Blast, Brown Spot, Leaf Smut, and Tungro. The dataset used is the public dataset and Mandeley Data and Kaggle, the dataset has been divided into a training set of 80% and a validation set of 20%. Based on the simulation that has been done, the accuracy level of Resnet101 is superior to the three scenarios.

Keywords: Rice Disease, Deep Learning, ResNet34, ResNet101, Optimizers.