Klasifikasi Jenis Tanaman Rimpang untuk Mendukung Pengenalan Tanaman Obat Tradisional Menggunakan Metode *Convolutional Neural Network* (CNN)

(Classification of Rhizome Plant Types to Support the Recognition of Traditional Medicinal Plants Using the Convolutional Neural Network (CNN) *Method).*

Nugroho Setyo Wibowo, ST. MT

Amalia Siska Kurniawati

Study Program of Informatics Engineering

Majoring of Information Technology

Program Studi Teknik Informatika

Jurusan Teknologi Informasi

ABSTRACT

Rhizome medicinal plants such as ginger, turmeric, temulawak, galangal, and aromatic ginger are often used by Indonesians for traditional concoctions and maintaining health. However, people often have difficulty distinguishing the types of rhizome plants due to their similarity in shape and color. This research develops a machine learning system with the Convolutional Neural Network (CNN) method to classify and detect rhizome plant types based on images. The model was trained with a dataset of 1000 images of rhizome plants, using a learning rate of 0.001 for 50 epochs, with a training and validation data ratio of 80:20. Training results showed 95% accuracy for training data and 89,5% for testing data. Confusion matrix testing also showed an accuracy of 95,8%, confirming the good performance of the CNN model in detecting rhizome plant types. This system is expected to help people identify rhizome plants more easily and quickly through the Telegram bot application.

Keywords : Machine Learning, Convolutional Neural Network (CNN), Medical Plants, Python, Telegram Bot