

ABSTRAK

STUDI PERBANDINGAN ARSITEKTUR *CONVOLUTIONAL NEURAL NETWORK* PADA KLASIFIKASI *AGLAONEMA*

Oleh

Dzihan Septiangraini

Popularitas tanam hias semakin meningkat dikalangan masyarakat secara luas dan juga dapat membuka peluang bisnis bagi pencinta tanaman hias. Jenis tanaman hias yang memiliki peminat sangat tinggi salah satunya adalah *Aglaonema*. Tanaman *Aglaonema* memiliki varietas yang beragam, dalam membedakannya dapat menimbulkan kesulitan karena setiap varietas *Aglaonema* memiliki kemiripan pada struktur daun seperti bentuk, warna, dan tekstur. Pada penelitian ini, dilakukan proses klasifikasi terhadap 5 kelas citra *Aglaonema* dengan membandingkan 5 arsitektur dari metode *Convolutional Neural Network* (CNN) yaitu LeNet, AlexNet, VGG16, Inception V3, dan ResNet50. Total dataset yang digunakan sebanyak 500 data citra dengan pembagian data latih sebesar 80% dan data uji sebesar 20%. Hasil pengujian yang dilakukan terhadap 5 kelas citra *Aglaonema* didapatkan hasil akurasi, *precision*, dan *recall* terbaik pada arsitektur Inception V3 dengan nilai sebesar 92,8%, 93%, dan 92,8%.

Kata kunci: *Aglaonema*, *Convolutional Neural Network* (CNN), LeNet, AlexNet, VGG16, Inception V3, ResNet50

ABSTRACT

COMPARISON STUDY OF CONVOLUTIONAL NEURAL NETWORK ARCHITECTURE IN AGLAONEMA CLASSIFICATION

By

Dzihan Septiangraini

The popularity of ornamental plants increases throughout the community and can also open up business possibilities for ornamental plant enthusiasts. One of the ornamental plants that have a very high interest is Aglaonema. Aglaonema plants have various varieties, in distinguishing them can cause difficulties because each Aglaonema variety has a leaf structure such as shape, color, and texture. In this study, a classification process was carried out on five classes of Aglaonema imagery by comparing five architectures from the Convolutional Neural Network (CNN) method, namely LeNet, AlexNet, VGG16, Inception V3, and ResNet50. The total dataset used is 500 image data with the distribution of training data by 80% and test data by 20%. The results of the tests carried out on five classes of Aglaonema imagery got the best accuracy, precision, and recall results on the Inception V3 architecture with values of 92.8%, 93%, and 92.8%.

Keywords — *Aglaonema, Convolutional Neural Network (CNN), LeNet, AlexNet, VGG16, Inception V3, ResNet50*