

IMPLEMENTATION CONVOLUTION NEURAL NETWORK (CNN) FOR CLASSIFICATION OF RARE BUTTERFLY IMAGES WITH KERAS

LIBRARY

(Case Study : Paradise Bird Butterflies, Owl Butterflies, Lace Wing Butterflies,
and Dead Leaf Butterflies)

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ABSTRACT

Indonesia is one of the countries that has a high abundance of biodiversity. One of the biodiversity in Indonesia is a butterfly. Butterfly is one of the beneficial insects for humans, however many species of butterfly population in Indonesia are declining or endangered. In Indonesia there are around 2.500 species of butterflies which is the country with the second largest number of butterflies in the world after Brazil. With the many types of butterflies in various shapes, different patterns, and unique requires a technique that facilitate learning more effeciently. Lots of rare and protected butterflies in Indonesia such as paradise bird butterflies, owl butterflies, lace wing butterflies, and dead leaf butterflies. One of the Deep Learning methods that are currently developing is an image. This technique can make the image learning function more efficient to implement. Therefore, researcher will take the advantages of CNN which is a able to classify an object intended for image data, so that the CNN model will be used as an introduction to the four rare species of the butterflies in Indonesia. By using the *Keras* Library in the results of the trial and evaluation of the model of the butterfly image show accuracy of 100% in training and 97.5% in the test process. So it can be concluded that the implementation of Convolutional Neural Network (CNN) method is able to classify the butterfly image well.

Keyword : Convolutional Neural Network, Keras, Classification, Butterflies