

ABSTRACT

CLASSIFICATION OF BIRD SPECIES IN RICE AREA USING CONVOLUTIONAL NEURAL NETWORK

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Indonesia is known as one of the countries with the greatest biodiversity in the world. Indonesia has one of the highest levels of animal species diversity in the world, with 1,723 species of birds being one of the most numerous. To determine the level of diversity, abundance, and evenness in a habit, the number of bird species must be classified by identification. Bird observation and identification are still carried out by hand. When doing direct bird watching, you can make mistakes because many birds look alike when viewed from a normal vantage point. To account for these errors, a photograph of each type of bird observed was taken. This image will be used to identify bird species, making the identification results more accurate. Following the identification process, the observed birds will be manually grouped according to their respective species. Through machine learning modeling, technological advancements can aid in the process of identifying bird species based on images. This modeling is done to teach the machine to automatically distinguish between images of birds. Deep learning is one method for image recognition. This modeling is done to teach the machine to automatically distinguish between images of birds. Deep learning is one method for image recognition. The Convolutional Neural Network is an algorithm that uses the deep learning concept. The best accuracy results from this study were obtained with an input image of 224x224 pixels and 50 epochs. Model 1 achieves an accuracy value of 99.55 percent for training and 99.82 percent for testing. The training and testing accuracy values in model 2 are 99.54 percent and 99.86 percent, respectively. Following that, an image classification test was run on the web flask, yielding an accuracy value of 95.72 percent using new test data. In this study, the performance of the three models in classifying bird images was excellent on test data and quite good on new data.

Keywords : *Bird, Machine Learning, Deep Learning, Convolutional Neural Network, Web Flask*