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## Elementary model for bird species identification using convolutional neural network: Case study in Sri Lanka

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Bird species identification has gained significant attention in the field of computer vision and deep learning due to its ecological and conservation implications. Identifying birds that are exclusive to a specific geographical area holds significant importance. While numerous deep learning models have been suggested for this purpose in various countries, none has been specifically proposed for the Sri Lankan context. This paper presents a comprehensive analysis of bird identification using deep learning techniques focusing on the avian diversity found in Sri Lanka. The main research question focus of this study was how to transfer experts' knowledge of bird identification to the general public. Initially, the images of five bird species found in Sri Lanka were collected through various sources. The bird species used for this study were *Pavo cristatus*, *Acridotheres tristis*, *Oriolus xanthornus*, *Ardea intermedia*, and *Halcyon smyrnensis*. Subsequently, the images with noise and duplicates were removed manually. Later, the resulting images were resized to ensure consistency and compatibility for the convolutional neural network. Image augmentation was used to increase the dataset. The model was composed of six convolutional layers paired with three max-pooling layers followed by two feedforward layers. The trained model achieved accuracies of 0.9944 and 0.8987 for the training and testing phases, respectively.

**Keywords:** Birds Identification, Convolutional Neural Network, Deep Learning,

**Acknowledgement:** *This task would not have been possible without the knowledge shared on the Sri Lankan avian domain by Dr. Dilan Chathuranga, Senior Lecturer, Department of Zoology, University of Ruhuna.*

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