ABSTRACT

CLASSIFICATION OF MARINE FISH BASED ON IMAGE USING CONVOLUTIONAL NEURAL NETWORK ALGORITHM AND VGG16

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Sea fish are one of the many natural resources frequently utilized by the community as food. However, several types of sea fish are prohibited from consumption due to being nearly extinct. Additionally, some fish species contain high levels of toxic mercury that can be harmful to humans if consumed. With the vast number of sea fish species, it becomes challenging to identify them without knowledge of fisheries. Computers have become highly advanced devices that facilitate various human activities. This advancement allows for the creation of systems capable of processing information from images, known as image classification. There are numerous methods that can be employed in designing an image classification system, one of which is transfer learning. This study aims to design an image classification system using the transfer learning method with a pre-trained VGG16 model and Convolutional Neural Network algorithm. The research results show a training data accuracy of 100% and a validation data accuracy of 99.3%, with an overall accuracy of 84% and a loss value of 0.6591.

Keyword **: *Sea fish*, *Machine learning*, *Convolutional Neural Network*, *Transfer learning*, VGG16**