Abstract

Koi fish are ornamental fish that are commonly found in Indonesia. Compared to fish in general, koi fish have attractive sizes, patterns, and colors. The lack of research related to marine fish and ornamental fish and the difficulty of distinguishing unique types of koi fish. Some research related to fish is still researching based on only a few parts of the fish such as the head, skin, or tail scales, or fins. However, there are still internal problems that are often faced by fish classification, namely images that have reflected light, shadows, water reflections, or water ripples as the main factors that cause the image to not be segmented optimally, which causes poor performance of the model. Therefore, the science of image processing is applied. The application of this knowledge will help create a model that can identify the type of koi fish image based on the characteristics it possesses. This study will develop a koi fish classification system using the CNN (Convolutional Neural Network) method with EfficientNet architecture. This final project will discuss the implementation of EfficientNet in a case study of classifying koi fish. This research is looking for the best system performance by performing repeated testing of the use of batch size. The results of EfficientNet-B5 managed to provide the highest accuracy with 94% and EfficientNet-B4 gave the lowest result with 91%.

Keywords: Koi Fish, EfficientNet, Classification