

ABSTRACT

Indonesia is a maritime country and one of the largest archipelago countries in the world. The vast area of Indonesia's oceans can increase the potential to improve Indonesia's economy, especially in the fisheries sector. Indonesian fisheries have many types of fish in common, this causes difficulties in introducing fish species directly. The fish recognition process is still a manual method, namely by direct transfer and assumed in advance based on existing references. This takes a long time and make it possible for human error levels. Therefore, we need a system that can recognize the fish automatically and can reduce work time.

This study designed a fish species classification system using the YOLO (You Only Look Once) architecture. YOLO is object detection using a convolutional network that will only be just once. In contrast to convolutional networks in general that spend thousands of networks to obtain an image with computing that is long enough. YOLO in this final project research will use the YOLO9000 architecture. With a dataset of 6 classes, that is banded butterflyfish, blue tang surgeonfish, barred hamlet, blackside hawkfish, Arabian Picasso triggerfish, dan black margate grunt.

The parameters reviewed were accuracy, precision and IoU (Union Intersection), by analyzing the system configuration in Adam optimization and Sgd Optimization by optimizing at its threshold. The data consists of 120 training image data and 100 test data images. The best accuracy results are 92% and the best IoS is 0.75 on Adam optimization with threshold 0.1. Whereas the best precision is 0.20 on Sgd optimization with a threshold of 0.9 at the time of 2.223 FPS.

Keywords: Fish classification, YOLO (You Only Look Once), Accuration.