

ABSTRACT

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Web Application "Shrimp-Detector App" for Shrimp Detection Using YOLOv8, Onnxruntime-Web API, and React JS

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The aquaculture industry in Indonesia has developed rapidly and is a sector that has an important role in the economy and national food supply in Indonesia. One of the rapidly growing aquaculture commodities in Indonesia is shrimp. Object detection technology can help shrimp farmers detect shrimp and determine the number of shrimp detected. This research will build a website application "Shrimp Detector App" that can detect shrimp and calculate the number of shrimp detected using YOLOv8, Onnxruntime-Web API, and React JS. The dataset used is a dataset with two classes, namely shrimp and not_shrimp with a total of 6630 image data. The image annotation process is done using roboflow. The dataset training process is carried out using the Google Colaboratory, YOLOv8, and the results obtained are stored in Google Drive. Making a website application using the React JS javascript framework. The deployment process uses Netlify tools as a CI/CD deployment service provider. Training is carried out with a total of 300 epochs. The average precision value is 92.57%, while the recall value is 88.2%. The accuracy of the model obtained a value of 93.2%. These results illustrate that the model is relatively stable in classifying objects appropriately. The test results of the confusion matrix on the detected image yield an accuracy value of 79.91%.

Bibliography (2015 – 2023)