ABSTRACT

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Keywords: Deep Learning, YOLO, Android*, Fish*

(xiv + 79 + *attachment*)

Fish are a category of vertebrate animals that exhibit a wide diversity. There are various categories of fish, one of which is ornamental fish located at Universitas Gunadarma TechnoPark. A digital approach system is needed to help quickly and easily recognize the diversity of fish species, namely a fish species recognition system using the YOLO method based on Android. The system can detect objects in the form of fish at UG-TechnoPark and is built with the YOLO method using the Python programming language, which is then implemented in an Android application using the Java language. Additionally, the system is equipped with information about the application, such as the quantity and names of fish species recognized by the system. The research method used is the waterfall method, an approach from the System Development Life Cycle (SDLC) that includes planning, analysis, design, implementation, and testing. The best model used was trained with a dataset containing 3349 images and through 100 training epochs, resulting in an F1-score of 0.84%. The test results of the fish species recognition system show that all application pages are successfully displayed and the model is successfully loaded for fish detection. The lower the inference time value, the faster the model processes input and produces output in the form of detection results in the application. The use of GPUs significantly affects the application's ability to achieve a low inference time value.

Bibliography (2016-2023)