

## ABSTRACT

Axis Ramadhan,51419207

Implementation of YOLO Method for Vegetable Recognition on Android-based Platform. Thesis, Department of Informatics, Faculty of Industrial Technology, Gunadarma University, 2023.

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(xiv + 73 + attachment)

Vegetables are plant-based materials with high water content that can be consumed fresh or in processed forms. Given the variety of classifications for vegetables, an application is needed to accurately recognize various types of vegetables. Deep Learning is a subfield within Machine Learning that can be employed for object classification. YOLO, an algorithm in Machine Learning, is used for object detection, displaying class probabilities, and *bounding boxes* indicating the detected object's location. This application is built using the YOLO algorithm on the Android platform, facilitating users in identifying vegetable types. The research methodology employed for this study is the Systems Development Life Cycle (SDLC) using the Waterfall model. The application is developed using Java programming language for Android OS implementation and Python programming language for model training using the YOLO algorithm. The application testing results indicate its effective functionality. All application pages can be displayed, and the model can be integrated into the application for vegetable detection. Based on conducted testing, it can be concluded that using GPU as a hardware accelerator has a significant impact on improving application performance.

Bibliography (2017-2023)