Komparasi Algoritma YOLOv8 dan YOLOv5 untuk Deteksi Objek dalam Konteks Pengiriman Logistik Militer Berbasis Simulasi

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Abstract

Current technological developments have developed very rapidly. Various technologies have been used in almost all fields. One of the current technological developments is in the military field. In the military field, technology can be used to help humans in various sectors, one of which is logistics. There are several innovations, such as autonomous vehicles equipped with artificial intelligence. However, there still needs to be more research discussing object detection in logistics delivery missions. Autonomous vehicles must have object detection capabilities to carry out logistics delivery missions. To detect objects requires an algorithm that can detect objects. Many object detection algorithms have been developed. One of the most frequently used object detection algorithms is YOLO. However, many versions of YOLO have been developed. Therefore, this study aims to compare several versions of the YOLO algorithm in the context of object detection in the military logistics sector to find out which version of YOLO has a better performance by making a comparison of one of the versions of the YOLO algorithm that has been developed, namely YOLOv8 and YOLOv5. From the results of this study, YOLOv8 is slightly better than YOLOv5 in terms of performance as measured using the confusion matrix. However, if we test using cameras, photos and videos, sometimes YOLOv5 gets a better accuracy score than YOLOv8. This happens because there are background factors that influence the accuracy results.

Keywords: Technology, Object Detection, YOLOv8, YOLOv5, Logistics, Military