



**PROJECT REPORT**  
**COMPARISON BUS PASSENGER COUNTING AND**  
**GENDER DETECTION USING YOLOV8, FASTER**  
**R-CNN, AND MASK R-CNN ALGORITHM**

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## ABSTRACT

Bus passengers' data are crucial for the bus agents, especially in Indonesia. With this data, bus agents could identify the traffic for each route of the bus. To handle this problem, many researchers have made a system to count and detect the public transportation passengers with different algorithms. Many researchers defined that You Look Only Once (YOLO) has best performance to overcome the object detection problem that has similarity in this research. The Convolutional Neural Network algorithm is also not inferior in implementing object detection either. In this research, it will investigate these three algorithms, You Only Look Once version 8 (YOLOv8), Faster Region Convolutional Neural Network (Faster R-CNN), and Mask Region Convolutional Neural Network (Mask R-CNN), in counting bus passengers and detecting the bus passenger's gender. To find the best performance of these two algorithms, they will use a dataset that contains 408 photos of bus passengers. This research aims to analyze the result of the bus passengers data that could reduce the misalignment and determine the best algorithm to use in this case.