

Real-Time Vehicle Detection Using YOLOv8 Model

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Abstract: *This paper explores the application of the YOLOv8 model for real-time vehicle detection. The primary objective is to enhance detection accuracy and speed, focusing on the effectiveness of the YOLOv8 architecture in identifying vehicles within camera feeds. Key metrics such as Mean Squared Error (MSE), Root Mean Squared Error (RMSE), and detection accuracy are used to evaluate model performance. Our findings demonstrate that YOLOv8 provides high detection accuracy and speed, making it suitable for real-world applications in adaptive signal control, prioritizing efficient vehicle detection*

Keywords: Vehicle Detection, YOLOv8, Real-Time Detection, Machine Learning