

# IMPLEMENTING A FADED ROAD MARKING DETECTION SYSTEM USING THE WEB-BASED YOLOv8 METHOD

**DAMAR GALIH JATI PRASETYO**

*Program Studi Informatika, Fakultas Sains & Teknologi  
Universitas Teknologi Yogyakarta  
Jl. Ringroad Utara Jombor Sleman Yogyakarta  
E-mail : dedekgani11@gmail.com*

## ABSTRACT

Faded road markings pose a significant risk to traffic safety and flow by reducing driver visibility and potentially increasing the likelihood of accidents. This study aims to develop the FADETrack system to detect faded road markings using the YOLOv8 deep learning model. The dataset comprises 2,049 road marking images collected under various environmental conditions and labeled as either 'Clear' or 'Faded.' The dataset is split into training (70%), validation (20%), and testing (10%) subsets. Training was conducted using the basic YOLOv8n architecture with 50 epochs, an image size of  $640 \times 640$  pixels, a batch size of 64, and a learning rate of 0.001. The research process includes acquiring road marking data, preprocessing images, detecting using the YOLOv8 model, and analyzing and visualizing the results. The system supports input from images, video streams, and real-time cameras. The application was developed in Python with a Flask-based backend and MySQL database. Test results demonstrated satisfactory performance, with a precision of 0.7193, recall of 0.7567, and mAP50 of 0.7479, indicating strong detection capability and potential as an efficient solution for road marking monitoring. This research is expected to continue evolving into a comprehensive and adaptive system for monitoring road marking conditions to enhance road safety.

**Keywords:** Faded road markings, YOLOv8, deep learning, object detection, real-time.