Traffic Sign Detection and Classification Using Deep Learning

Abstract:

Over the past decade, the detection and recognition of traffic signs have emerged as an active research area, particularly in the context of driving automation critical for driverless vehicles. With a significant rise in road accidents attributed to ignorance of traffic signs and rules, there is a growing need for systems capable of accurately recognizing permanent or temporary road signs displayed along various roadways. Such recognition systems typically involve both the detection and classification of traffic signs and are often deployed on portable devices to assist in decision-making and driving algorithm improvement. Key parameters considered in these systems include the size of traffic sign boards and the speed of vehicles. In this project, we propose a real-time detection and recognition system for traffic signs utilizing You Only Look Once(YOLO).Through the utilization of YOLO, our model achieves robustness, higher accuracy in the detection phase, and improved performance in the training and recognition phases.

Technologies Used:

- Deep Learning
- YOLO
- Python
- Ultralytics

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