



Traffic Violation Detection System

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Abstract: *One of the top priorities in smart cities is the implementation of an effective traffic management system. Such systems play a crucial role in orchestrating traffic flow, preventing accidents, and mitigating congestion. However, numerous challenges need to be addressed due to the widespread use of vehicles, a shortage of traffic management personnel, and the occasional failure to capture traffic violations. Drivers who excessively speed and those who flout traffic laws through unwarranted lane changes and maneuvers are significant contributors to increased collisions. This pressing issue demands immediate attention to reduce the seemingly senseless loss of lives.*

Given that today's traffic control systems, primarily managed by human specialists, are not designed to combat excessive congestion effectively, there is a need for revision. In this study, a hybrid model using Tensor Flow, a machine learning platform, and the "You Only Look Once" (YOLO) object identification technique is proposed. This hybrid model is based on YOLO and aims to enhance the YOLOv3 algorithm for vehicle detection systems compared to the previous model. Python is used as the programming language for this implementation.

The proposed hybrid model operates by gathering data from a surveillance camera positioned near traffic signals, which is connected to the city's traffic servers. If any vehicle violates traffic regulations while crossing this device, the system detects the violation and promptly transmits this information to the server.

Keywords: Relevant API calls, Application Programming Interface

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