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Traffic Violation Detection by using Image Processing

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Abstract: *Traffic violations pose a significant threat to public safety and necessitate efficient enforcement measures. The emergence of computer vision and image processing techniques has provided promising solutions for automated traffic violation detection. This survey paper explores the application of image processing algorithms in detecting and classifying various traffic violations, such as speeding, red light violations, illegal parking, and wrong-way driving. The paper reviews the different stages of the traffic violation detection pipeline, including image acquisition and pre-processing, object detection and localization, and traffic violation classification. Furthermore, it discusses the challenges and considerations associated with dataset creation, performance evaluation, and existing approaches through the analysis of case studies and real-world applications. The survey paper concludes by outlining the current limitations and future directions in the field, emphasizing the need for real-time performance, robustness in varying conditions, and generalizability across diverse traffic environments. The insights provided in this survey paper can guide researchers and practitioners in developing effective traffic violation detection systems using image processing techniques, ultimately contributing to improved road safety and traffic management.*

Keywords: *Traffic violations*

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