Enhancing Automatic Vehicle Number Plate Recognition Systems: A Multidimensional Approach to Improve Efficiency and Applicability

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Abstract: *Real Time Number Plate Recognition System is an image processing technology which uses number (license) plate to identify the vehicle. The objective is to design an efficient automatic authorized vehicle identification system by using the vehicle number plate. No plate help for movement of traffic securely without any collision. They can reduce the number of accidents on roads like pedestrian accident and right-angle collision of two cars. Number plate recognition (NPR) can be used in various fields such as vehicle tracking, traffic monitoring, automatic payment of tolls on highways or bridges, surveillance systems, tolls collection points, and parking management systems. The developed system first detects the vehicle and then captures the vehicle image. Vehicle number plate region is localized using Neural Network(rcnn) then image segmentation is done on the image. Character recognition technique is used for the character extraction from the plate. The system is implemented and simulated in python, and its performance is tested on real image. Automatic vehicle detection and recognition is a key technique in most of traffic related applications and is an active research topic in the image processing domain. Different methods, techniques and algorithms have been developed for vehicle detection and recognitions but they are not very useful for parking system. In this project we aim to make an application which will help for society and mostly for corporation buldings in each state for doing their work very efficiently and in very small time. Live camera feeds are the primary input we give the system. On the main gate is a camera. When a car or bike passes in front of the camera, the camera reads the number plate number. Using an OCR algorithm, this vehicle can be determined to be authorized or not. If the car is not allowed in the premises the notification will be activated. authorized popup will be on if the vehicle is authorized*

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