

“ON LINE LICENSE PLATE RECOGNITION SYSTEM”

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ABSTRACT

License plate recognition uses image processing and character recognition approaches to identify vehicles by automatically reading their license plates. The project aims at developing an intelligent real time *On Line License Plate Recognition System* which caters to the need for intelligent traffic management system, in order to cope up with constantly increasing traffic on today's roads.

The system may also be used in various security applications such as parking, access and border control or tracking of stolen cars. The task is quite challenging due to the diversity of plate formats and the non uniform outdoor illumination conditions during image acquisition. Our objective is to optimize the approach to operate efficiently under such conditions.

License plate recognition (LPR) algorithms in images or videos are generally composed of four processing steps, namely, Image acquisition, License plate detection and extraction, Character segmentation and Character recognition. The image of a vehicle is captured as a first step and two main image segmentation stages are applied. First, it is necessary to locate and extract the license plate region from a larger scene image. Second, having a license plate region to work with, the alphanumeric characters in the plate need to be extracted from the background so as to deliver them for recognition stage. The recognition of the extracted characters requires a classifier which is not overly dependent on the test character size.

The license plate is extracted from the captured image of a vehicle using fusion of spectral analysis and connected component analysis. Colour image processing has been employed to extract yellow license plates efficiently. An additional mechanism using Hough transform and Affine transform is used to correct skew in license plates. The task of segmenting alphanumeric symbols from the license plate is accomplished using connected component analysis. The redundant spaces and non-character elements in the license plate are eliminated by using additional heuristics. For character recognition, feature extraction techniques like Principal Component Analysis (PCA), Linear Discriminant Analysis (LDA), and a classification technique called Support Vector Machine (SVM) are used.