

Automatic License Plate Recognition (ALPR)

Girish Pathode, Anuj Singh, Shashank Kumar, Dr. D.M. Bhalerao

Department of Electronics & Telecommunication
Sinhgad College of Engineering, Vadgaon BK, Pune, India

Abstract: The number plate recognition (NPR) system is one of the categories of smart transportation and detection mechanism (STDM). This is a combination of the technology in which the application enables the system to detect and automatically read the license id of number plate of vehicle from digitally captured images. Automatically capturing the license plate is the process of detecting and transforming the pixels data of a digital image into the plain text data or ASCII text of the number plate. Our project contains a method for the vehicle number plate recognition from the image using mathematical morphological operations (erosion, dilation). The main objective is to use and combine different morphological operations in such a way that the license plate of the certain vehicle can be detected and translated effectively. This is based on various operation such as image improvement, Gray scale transformation, Bilateral Filtering edge detection and getting the number plate from the picture of vehicle. After the completion of the above-mentioned steps, now the process of segmentation is being applied to detect the text present on number plate by making use of matching of template and OCR. This system is able to detect the license number accurately as well as quickly from the vehicle's picture.

Keywords: Machine learning, ALPR, Software Development Life Cycle - Spiral Model, OCR-Optical character Recognition, KNN classifier, openCV2 image processing; computer vision; intelligent transportation system; smart vehicle technologies; object detection and tracking; Character and digit recognition.

REFERENCES

- [1] ShallyGupta , Rajesh Shyam Singh - july 2020-A Review Paper on Automatic Number Plate Recognition system.
- [2] Naveed Mufti ,* and Syed Afaq Ali Shah - Automatic Number Plate Recognition:A Detailed Survey of Relevant Algorithms-July – 2021
- [3] S. Shastry, Gunasheela G, T Dutt, Vinay D S and SR Rupanagudi - A novel algorithm for Optical Character Recognition (OCR), IEEE 2013.
- [4] .Sukhpreet Singh Optical Character Recognition Techniques: A Survey, Journal of Emerging Trends in Computing and Information Sciences, Vol. 4, No. 6 June 2013.
- [5] T. Naito, T. Tsukada, K. Yamada, K. Kozuka, andS. Yamamoto, Robust license plate recognition method for passing vehicles under outside environment, Trans. Veh. Technol., vol. 49, no. 6, pp. 23092319, Nov. 2000.
- [6] Sarbjit Kaur, Sukhvir Kaur “An Efficient Approach for Number Plate Extraction from Vehicles Image under Image Processing”, International Journal of Computer Science and Information Technologies, Vol. 5 (3) , 2014, 2954-2959.
- [7] Mr A. N. Shah, Ms A. S. Gaikwad. “ A Review- Recognition of License Number Plate using Character Segmentation and OCR with Template Matching “, International Journal of Advanced Research in Computer and Communication Engineering, Vol. 5, Issue 2, February 2016.
- [8] M. Usman Akram, Zabeel Bashir, Anam Tariq and Shoab A Khan, Geometric Feature Points Based Optical Character Recognition, IEEE Symp. Industrial Elec. & App., Sept 2013.
- [10]Dr Savita Gael and Savita Dabas, Vehicle Registration Plate Recognition System Using Template Matching, IEEE 97B-1 -4799-1 607-B/13, 2013.

