

# Automating Parking System using Python

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**Abstract:** *In many developing countries the increase in population increases day by day rapidly. In cities people can face many problems including parking to park the vehicle. Normally at places such as theaters, market areas, malls and offices and in metropolitan cities. This project is designed to relax from the time-consuming parking system. In this project we used an advanced smart parking system. In parking, firstly when a car enters it shows availability or unavailability of parking in the display to ensure the space of parking. Every motor vehicle enters society, the automatic parking system registers data on the system of every person, and it can record the plate no. License enters addresses etc. We use ANPR automatic Number plate Recognition to capture the number of plates and their data on the ANPR system. Opens is a computer which a library uses for video capturing, image processing and machine learning and helps to provide the standard development environment for computer vision applications by including capabilities like face detection and object detection.*

**Keywords:** ANPR, ITS, Image Enhancement, Edge Detection, Morphology Operation, Number Plate Extraction, Open cv.

## REFERENCES

- [1]. Shally Gupta , 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]. Prathamesh Kulkarni, Ashish Khatri, Prateek Banga, Kushal Shah, Automatic Number Plate Recognition (ANPR) System for Indian conditions.
- [4]. International Journal of Computer Applications (0975 – 8887) Volume 69– No.9, May 2013 21 Automatic Number Plate Recognition Systems (ANPR): A Survey.
- [5]. M.T.Qadri and Asif, M. (2009). Automatic Number Plate Recognition System for Vehicle Identification Using Optical Character Recognition. 2009 International Conference on Education Technology and Computers.
- [6]. Kulkarni, P., Khatri, A., Banga, P., and Shah, K. (2009). Automatic Number Plate Recognition (ANPR) system for Indian conditions. 2009 19<sup>th</sup>