Number Plate Detection Using Machine Learning

Pratiksha Sarole[1], Prof. Swati Gaikwad[2], Pooja Are[3], Uday Patre[4], Shriram Aghav[5]
[1, 2, 3 4, 5] Dept of Information Technology Engineering
[1, 2, 3, 4, 5] Genba Sopanrao Moze College of Engineering, Balewadi

Abstract- *In this project we aim to make an application which will help for traffic police in each state for doing their work very efficiently and in very small time. 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. Auto Recognition of License Plate is a kind of image processing technology for recognizing the number plate information from images.*

Keywords- number plate detection, image, optical character recognition (OCR), license plate (LP), license plate localization.

I. INTRODUCTION

In traffic there are various vehicles going in a brief span and number plate abstraction is a difficult task, basically because of number arrangement, and impact of environmental work.The observed plate images are normally in low resolution and suffer severe loss of edge data, which cast, incredible test to existing vehicle number plate detection and recognition patterns.

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 useful for toll plaza. The system is designed to deal with unclear vehicle plates, variations in weather and lighting conditions, different traffic situations, and high-speed vehicles images. Number plate detection of license plate method comprises of three segments: Character segmentation, Optical character recognition and template matching.The data sets include images that were captured from crossroads, streets, and highways, in day and night, various weather conditions, and different plate categories.

Workflow Diagram –

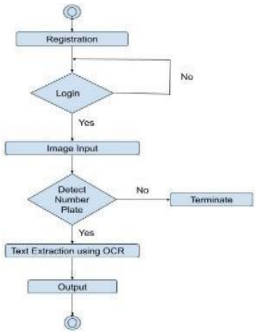

Fig1: work flow diagram

The first step i.e. to capture image of vehicle looks very easy but it is quite exigent task as it is very difficult to capture image of moving vehicle in real time in such a manner that none of the component of vehicle especially the vehicle number plate should be missed. after that traffic police can login into the system. He will give captured image as input.to the system. System will do preprocessing task will do the necessary task to identify the number plate. user will receive number plate as a output .

II. SYSTEM ARCHITECTURE

fig2. contain all the component of the system. First login into the system. Then give captured image as a input. Pre-processing is done on image. wavelet helps to develop signals into multiple scales. After converting image into different scales feature extraction of image takes place. with the help of OCR algorithm number detection also classification of a number plate take place.at end final output is shown on screen.

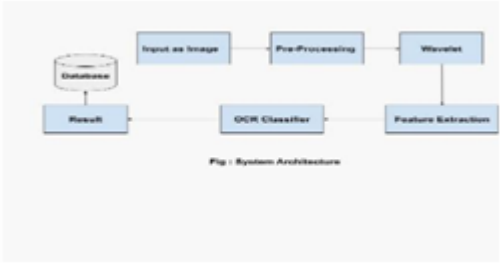

Fig2 system architecture

III. IMPLIMENTTION

In this section, the detailed designed and implementation of the system are presented.it consist of two modules. software login and Registration interface

IV. CONCLUSION

This part of the system gives the convenient way to login and register on to the system.

Registration of a user

In this interface we can see that user can register themselves by using the credential i.e name, address, e-mail, phone number ,gender.

Fig 4 – Registration form

A.Login interface using login credential user can login into the system.

This project presents a novel and efficient approach to vehicle number plate detection using OCR algorithm and number plate verification. This method is able to substantially decrease the run-time complexity of number plate localization without sacrificing detection accuracy compared with that achieved using the original image.

REFERENCES

[1] Ms.SushamaH.Bailmare, Prof. A.B.Gadicha "A Review paper on Vehicle Number Plate Recognition (VNPR) Using Improved Character Segmentation Method",International Journal of Scientific and Research Publications, Volume 3, Issue 12, December 2013 1 ISSN 2250-3153.

[2] Prashant Chaudhary, Dr. V. S. Dhaka, Manoj Kumar"Automatic License Plate Recoganization System Using LabVIEW: Review ",International Journal of Advanced Research in Computer Science and Software Engineering, Volume 6, Issue 2, February 2016 ISSN: 2277 128X.

[3] Abbas M. Al-Ghaili, SyamsiahMashor, Abdul Rahman Ramli, and Alyani Is- mail. "Vertical-EdgeBased Car-License-Plate Detection Method "IEEE Trans-actions on Vehicular Technology, Vol. 62, No. 1, Jan. 2013.

[4] Ramalingam, M. Rhead, and R. Gurney " Impact of character spacing on the performance of Automatic Number Plate Recognition (ANPR) systems through simulation", Security Technology (ICCST), International Carnahan Conference on. IEEE, 2014.

[5] P.Anishiya, Prof. S. Mary Joans," Number Plate Recognition for Indian Cars Using Morphological Dilation and Erosion with the Aid Of Ocrs."International Conference on Information and Network Technology, Vol.4,2011.

[6] Cars Using Morphological Dilation and Erosion with the Aid Of Ocrs."International Conference on Information and Network Technology, Vol.4,2011