



Computerized vehicle number plate identifying device

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Abstract - Computerized vehicle number plate identifying device system is used to get information from vehicle license plate. The drawn information can be used with database or without database in many applications like toll payment, parking fee payment. The major factor in success of identifying device is the quality of gain image. A identifying device application can be used in any environment condition such as indoors, outdoors at day or night time. It should also be made more general to recognize license plates from different area, provinces have different type of fonts, languages, colours, different type of background images In some conditions they may be covered by dirt, lighting and other cars additional thing on them. In this paper we can broadly cover review of the state of the art techniques for identifying device. We can assign a category of different identifying device techniques based on the features they used for each level and assess the similarities them in terms of advantages of something. To study especially in order to gain knowledge of identifying device system and processing speed.

Keywords— Extraction plate region, Number plate recognition, Edge detection, Neural networks, Optical character recognition.

I. INTRODUCTION

In our day to day life transportation plays a very important role. In transportation vehicles such as cars, bus are main part of that. The use of vehicles have increased for need of peoples. So the big problem is arising to control vehicles. The number of vehicles have increased to control them, identifying device system has becoming a very important digital image processing system to use identifying device is maintaining automatic monitoring of maintaining low enforcement on public roads, traffic rules. Identifying device is used to equate vehicles by only their number plates. Every vehicles has different number / unique number. No any special identity or card or any tags to identify them.

II. PROBLEM DEFINITION

Computerized vehicle number plate identifying device system is a mass surveillance method that uses optical character recognition on images to read vehicle registration plates. By using this system user can access the information of vehicle from their number plate. Computerized vehicle number plate identifying device system is used in many applications such as toll plaza, Parking fee payment.

III. PROPOSED SYSTEM

Computerized vehicle number plate identifying device system used to get information from vehicle license plate. This system is mainly divided into four parts that is Number plate area detection, Plate segmentation, Extraction of characters, Recognition of Characters.

A. Number plate area detection

The number plate area detection is first step. Here first we need to detect the rectangular area. By using this area human can process this device for further use. Detection is require to identify the vehicles. For detection process edge detection algorithm is used here. By using horizontal and vertical edge detection algorithm we can detect only the rectangular part of that vehicle.



Fig. 1 Number Plate Area Detection Image.

B. Plate segmentation

After the number plate area is detected next step is segmentation of number plate. The process of partitioning a digital image of number plate to multiple segments/sets of pixels. Because next step is totally depend upon this. If this process fails or any error occurs. The recognition cant take place. We can use horizontal projection method for segmentation. The important of segments is the second region of space through out number plate are uniform. But the number plate can also contain unneeded thing such as dots, stretches ,dust etc. near the characters on number plate. Therefore its necessary to find and detect the accurate character of number plate without any error or problem.



Fig 2. Number plate segmentation Image.

C. Extraction of characters

To identify the character from a bitmap depiction there is necessity to draw out information of such bitmap. The process of removing information affects OCR process. Removing information is very important. various light conditions used fonts types and deformation of the characters of number plate caused by a skew of the image taken by device will be bedwetting towards extraction.



D. Recognition of characters

The objective of this lesson is to get pattern which deals with all elements of alphabets and numbers and identify the vehicle number. The main aim of this lesson is to make preliminary remarks of pattern to identify techniques such as Neural Network. Which are capable to arrange the pattern into suitable extensible program code template for state.

III. MATHEMATICAL MODEL

Mathematical definition of image:

$f(x,y)$: x and y are spatial coordinates of an image, and f is an intensity of light at that point. This function is always discrete on digital computers. $x, y \in \mathbb{N}$, where \mathbb{N} denotes the set of natural numbers including zero.
 $f(p)$: The intensity of light at point p . $f(p) = f(x,y)$, where $p = [x,y]$

IV. CONCLUSION

Computerised vehicle number plate identifying devices needs very high degree of quality of being true. Manually as compare to computer we want to do it on very busy road or parking. In a seconds many vehicles passes. So human cant keep record of all of them. To keep record and accurate records Computerised vehicle number plate identifying device is made.

ACKNOWLEDGMENT

This work is supported by KJIE's Trinity Academy of Engineering. We express deepest gratitude to our project guide Prof. Y. A. Thorat, Head of the Department Prof. S.N.Maitri and to our Project coordinator Prof. C.P.Kedia. We would like to thank our Principal Dr. V.J.Kakhandki who provide a healthy environment for all of us to work in best possible way. We also express our deep gratitude towards all the people who have helped us to completion of this project successfully.

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