

Automatic Car Licenses Number Plate Recognition

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Abstract— MANET is Mobile Adhoc NETWORK. Mobile ad hoc networks (MANETs) are self-configured networks which do not have need of any centralized base station for monitoring and controlling the network. There is no central control in MANET. Routing is a difficult task in network as topology changes frequently. In this paper, we discuss various attacks and different types of methods to detect and respond to the collaborative attacks. QoS parameters are also used for resource utilization. Main focus in this paper is to detect the destination node whether it is malicious or not and find the stable path from source to destination. In this paper new fitness function along with hybrid of hill climbing and genetic algorithm is proposed and use collaborative attacks approach. Automatic car license number plate is one of the most wholly studied topics in mathematical pattern recognition. Car license number plate is a Style of picture processing technology for recognition car number plate. This system also offers users to place mark out and monitor moving car automatic by extracting their number plates. A most important role in Toll-collection, security system, traffic control .In the present study, super resolution technique is used to the visual quality. The system detects the number plate of a car from input picture and then performs super resolution technique. Morphological technique operation based on different structure element and improves object area. The super resolution photo of car number plate compares with the RTO database. It shows the detail of car owner names, car registration. Six algorithm car number plates Localization that identifies a license plate. It is able to adjust for the contrast and brightness. Orientation, normalization, segmentation, OCR, syntactical algorithm used to recognition the car number plate. The morphological operation using database of number plates results improvements and compared with conventional system. The success rate of the method is more than 90%.

Index Terms— Automatic car license number plate, recognition, orientation, template matching, morphological technique.

I. INTRODUCTION

Car Number Plate recognition channel an significant role in other applications for example vehicle monitoring on highway, toll fees, parking lots access control, identification of movables vehicles etc. It was in a 1976 in United Kingdom at a police station. It is only today that the mechanics has really come of age, but the systems AC Controls now install not only provide exceptionally reliable results, but also can do so at acute angles, in any brightness condition and significant at high speed. It is the process of remove of car plate number from an image of a vehicle or video of a moving vehicle. Many techniques were proposed to improve the system by many research groups [1-12]. To identify a car

number plate, a contesting and suitable method was proposed by a group [1]. Very similar techniques were also proposed by other two research groups [3-5]. Their system carries off only for fixed country or state and showed poor performance in case of other country or unable to recognize plate number. Even if the system was able to identify the position of number plate it did not extract the character because of the variable characteristic of plate number existed on multipoint formation. Also most of the techniques were consuming time. Now day a new method was proposed by Johnson *et al.* [6], they used optical character word recognition system but it consumed less time in recognition of characters. Nijhis *et al.* [7] proposed a new formula based on fuzzy logic using neural networks to identify license plate number. Their system wants to train bulky elementary data. Lee *et al.* [8] also introduced a time swallowing method using optical character word recognition. They genetic algorithm based segmentation. but it did not perform to more time for implementation. Bidirectional associative memory neural network (BAM) based system by Fahmy *et al.* [10] intensity extraction and characters recognition based template compare system was defined. Lee *et al.* [11]. Kim *et al.* [12] a technique based on Hough transform with only upright edges or frontier to extract vehicle license plate. The algorithm of automatic car number plate recognition is divided into seven steps: (a) pickup image from the vehicle, (b) purification the image, (c) extract character (d) character separation, (e) matching character, (f) number plate identify, (g) gain. The main use of automatic car number plate is used in security system. This technique is very helpful in collection toll fees and many applications.

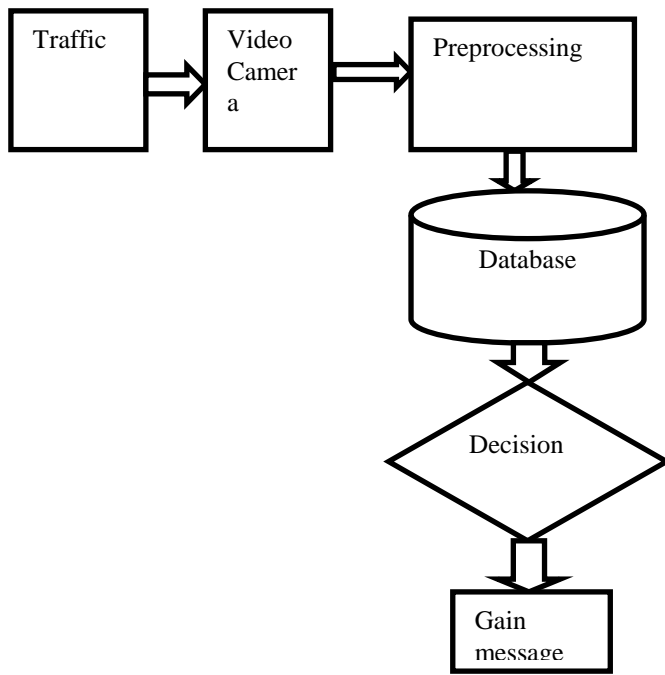


Fig1: Block diagram of Automatic car number plate recognition (ACNPR)

II. PROPOSED METHOD

First of all, photo frame is captured by a high intensity resolution camera from the distance of 4 to 6 meters from the vehicle. Then the system locates the objected area by employing canny edge detector and morphological method. After a time every one and every alphanumeric characters presented in the area are identified using template matching with the help of pre-arranged database of all character indivisible. There are many important steps to be followed in order to recognize the characters of car plate number.

Data pre-processing:- The ACNPR system requires a high intensity resolution video camera to obtain an image. Images are capture at various illumination, backdrop and domain conditions.

Segmentation character:- All the character from the picture is separated without wasting any element of a character.

Edge Identifying: The picture frames are identified by using some suitable algorithms in order to recognize the matter. The plate number area edge is identified by using ‘Canny detector’. Then the picture is converted into binary picture .The picture frames are passed through the median filter. Canny detection algorithm is following steps:

- (a)Smoothing: Remove the noise by staining.
- (b)Gradients locating: The very large gradients of the picture are calculated and marked to edges identify.
- (c)Non-maximum containment: Calculate only local maxima of the edges.
- (d) Edge approaching by hysteresis: The last point of edges is determined by deleting all edges. In the picture, all the final edges are calculated some of the edges in the surrounding, like edges or margin of tree or railing are also marked and getting an edge picture .

Vehicle Plate Area Identification: Morphological method is applied for removing the unconnected objects in the image. For deleting those unwanted candidates in the picture, an

algorithm presented by Lee et. al. [11] is employed as shown in figure 2.

Space enhancement: for enhancing the plate number area, segmentation is want. Segmentation is done by Thresholding.

Component study: component method is used to remove the noise from the object.

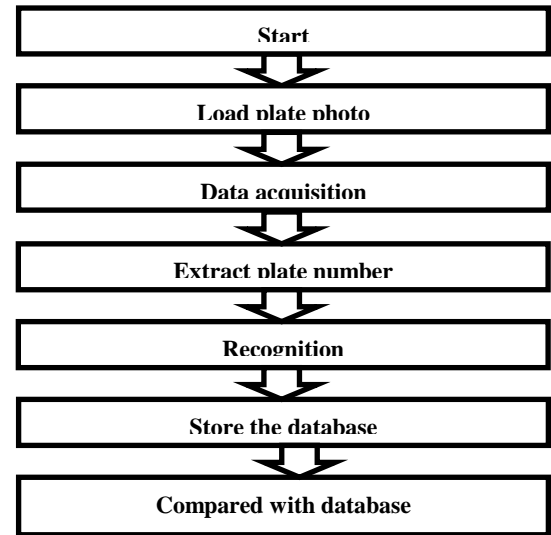


Fig2: Proposed method for car number plate recognition

Car number plate recognition:- The car number plate character is converted to binary picture with fixed size and standard dimension before additional pre- processing steps are applied. Then compare alphanumeric characters with the database, correlation. In ACNPR system it is the most outstanding and withering stage to generate proper gain. The previous steps are responsible for eliminating the pattern of characters from captured picture. The segmented plate number characters are rescaled to the characters within a space.

III. EXPERIMENTAL RESULTS

The algorithm of the system is execution by MATLAB. A database of about 160 pictures is used for testing. The gain result a very success rate is more than 90%.The conventional algorithm gives a recognition rate of 89.2%.An original picture frame is shown in Figure 3(a) which is captured by a camera. The noise is removed from the picture and the object or characters are shown in Figure 3(b). The last result is shown after applying structural elements and compared with the sample database is shown in Figure 3(c).



Fig 3: (a) Original image



Fig 3: (b) Before matching desired object

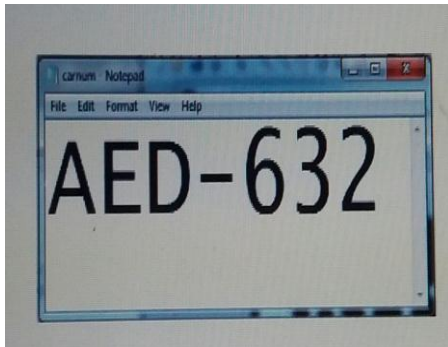


Fig 3: (c) Desired object open text file after matching

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IV. CONCLUSION

This paper presents a more efficient method for identifying number plate car. The conventional methods are very inexpensive method than the proposed method. The system is capable to recognizing any type of plate number within a fraction of a second.

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