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A STUDY ON THE APPLICATION OF AUTOMATIC LICENSE PLATE RECOGNITION SYSTEM BY USING SEGMENTATION ALGORITHM

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Abstract: Automatic license plate recognition is the extraction of vehicle license plate information from an image is sequence of image. The extracted information can be used with or without a database in many application system such as electronic payment system (tool payment, parking fee payment) and traffic surveillance. Automatic license plate reorganization uses either color black and white or infrared or camera to take images. In this work, novel hybrid algorithm is proposed for number plate recognition system through segmentation. License plate image are obtain from the camera. First step towards license plate image is to be scaled and preprocessed. Second approach the segmentation techniques are to be applied and extracted the license number from the license plate image. Finally the license numbers are compared with vehicle database and recognize the number plate.

Keywords: License plate, character recognition, algorithm.

I. INTRODUCTION

Nowadays vehicles play a very big role in transportation. Also the use of vehicles has been increasing because of population growth and human needs in recent years. Therefore, control of vehicles is becoming a big problem and much more difficult to solve. In this project we discuss the combination of the two Segmentation Algorithms.

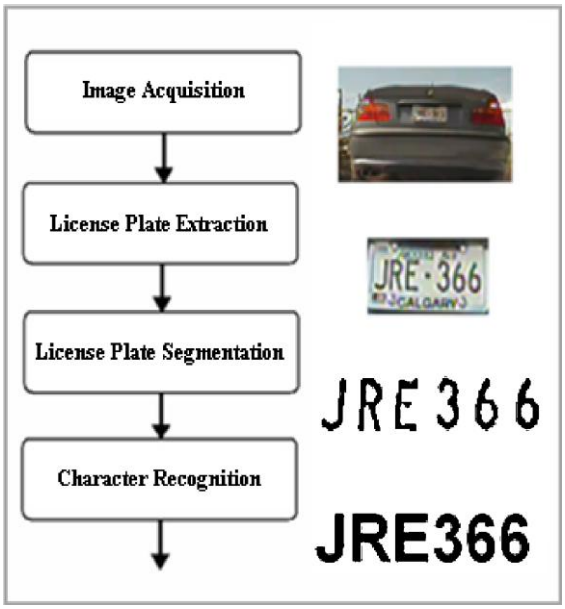
The proposed solutions for identifying the exact appropriate number plate details. The purpose of this project is to provide researchers a systematic survey of existing ALPR research by categorizing existing methods according to the features they used, by analyzing the pros/cons of these features, and by comparing them in terms of recognition performance and processing speed, and to open some issues for the future research.

Automatic license plate recognition (ALPR) applies image processing and character recognition technology to identify vehicles by automatically reading their number plates. The presence of noise, blurring in the image, uneven illumination, dim light and foggy conditions make the task even more difficult. Nowadays, intelligent transportation systems (ITSs) have a significant impact on people's lives. ITSs include intelligent infrastructure systems and intelligent vehicle systems. In the current information technology era, the use of automations and intelligent systems is becoming more and more widespread. Automatic license plate recognition (ALPR) has turned out to be an important research issue. ALPR has many applications in traffic monitoring system, including controlling the traffic volume, ticketing vehicles without the human control, vehicle tracking, policing, security, and so on.

The ALPR system that extracts a license plate number from a given image can be composed of four stages .The first stage is to acquire the car image using a camera. The parameters of the camera, such as the type of camera, camera resolution, shutter speed, orientation, and light, have to be considered. The second stage is to extract the license plate from the image based on some features, such as the boundary, the color, or the existence of the characters. The third stage is to segment the license

plate and extract the characters by projecting their color information, labeling them, or matching their positions with templates. The final stage is to recognize the extracted characters by template matching or using classifiers, such as neural networks and fuzzy classifiers. Fig. 1 shows the structure of the ALPR process. The performance of an ALP system relies on the robustness of each individual stage.

II. FRAME WORK



A framework of ALPR System Using Segmentation

III. RELATED WORK

Hybrid Segmentation Algorithm: When mean shift-based segmentation method and the efficient graph-based clustering method can be combined with two methods to give better results than either method alone? More specifically, we can combine the two methods to create more stable segmentations that are less sensitive to parameter changes and for which the same parameters give reasonable segmentations across multiple images? In an attempt to answer these questions, the third algorithm we consider is a combination of the two algorithms:

First, we apply mean shift filtering and then we use efficient graph-based clustering to give the final segmentation. The result of applying this algorithm with different parameters which will give quality of the segmentation is high. Also, we notice that the rate of granularity change is slower than either of the two algorithms, even though the parameters cover a wide range.

IV. CONCLUSION

In this work, the methods for traffic surveillance have been presented and the work on, license plate extraction and character recognition is carried out. In license plate extraction the strength and weakness of the different extraction algorithm have discussed which are available in the literature and comparisons of all the methods have been done. This system locates tracks and extracts traffic parameters in real time. Furthermore, the system can utilize any existing traffic surveillance infrastructure without further modification or tuning. Overall, the system was found to work satisfactorily and the background reconstruction algorithm added robustness to the process. In normal traffic conditions the system responded well and the outcome results regarding vehicle license plate and trajectory were accurate enough. The experiments carried out showed that the mean shift segmentation algorithm is capable of real time operational working due to its low complexity.

In future work, main aim to focus on improves the segmentation quality. However, the other segments of our suggested system should be improved, focusing on the occlusion handling, vehicle matching procedure and also focus on improving the accuracy measure for character recognition by using the concept of Advanced graph theory

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