Image Feature Detection and Extraction

Rajesh Gundeli[1] Gaikwad Samarth[2] Bollu Yogeshwar[3] Ande Shivtej[4]
[1,2,3,4]Brahmdevdada Mane Institute of Technology, Belati, Solapur, India

Abstract— Detection and description of image features play a vital role in various application domains such as image processing, computer vision, pattern recognition, and machine learning. There are two type of features that can be extracted from an image content; namely global and local features. Global features describe the image as a whole and can be interpreted as a particular property of the image involving all pixels; while, the local features aim to detect keypoints within the image and describe regions around these keypoints. After extracting the features and their descriptors from images, matching of common structures between images (i.e., features matching) is the next step for these applications. This chapter presents a general and brief introduction to topics of feature extraction for a variety of application domains.

Key words: Keywords Feature Detection, Feature Description, Feature Matching, Image Processing, Pattern Recognition, Computer Vision, Applications

I. INTRODUCTION

Automatic License plate recognition (ALPR) algorithms in images or video segments are generally composed of the following three steps: 1) extraction of a license plate region; 2) segmentation of the plate characters; and 3) recognition of each character. This task is quite challenging due to the diversity of plate formats and the non-uniform outdoor illumination conditions during image acquisition. Therefore, most approaches work only under restricted conditions such as fixed illumination, limited vehicle speed, designated routes, and stationary backgrounds. In this project we focus on the task of extracting the license plate region from the video segments of the data.

II. LITERATURE REVIEW

In our society, traffic needs to be controlled and the registration of vehicles can suit more then one purpose. ANPR (Automatic Number Plate Recognition) is developed for these purposes. Depending on the state/country we see different objectives.

The number plate allows categorization of vehicles, the identification of the driver, or the origin of the driver/car.

Therefore, number plate recognition at a specific location can be useful. It is often used for statistics and data mining.

Some examples:

- ANPR is used by municipalities to keep track of incoming and outgoing traffic.
- Environmental zones need categorization of traffic.
- Around airports the traffic is monitored to detect patterns as an anti-terrorism measure.
- Since a numberplate is unique, it can be used for signaling suspect cars, (blacklist matching) or regulating access to a private area (whitelist matching).

III. IMPLEMENTATION DETAILS

A. SQL Server:

Microsoft SQL Server 2005 is comprehensive, integrated data management and analysis software that enables organizations to reliably manage mission-critical information and confidently run today's increasingly complex business applications. SQL Server 2005 allows companies to gain greater insight from their business information and achieve faster results for a competitive advantage.

B. Python:

Is an interpreted high-level programming language for general-purpose programming. Created by Guido van Rossum and first released in 1991, Python has a design philosophy that emphasizes code readability, notably using significant whitespace. It provides constructs that enable clear programming on both small and large scales .In July 2018, Van Rossum stepped down as the leader in the language community after 30 years

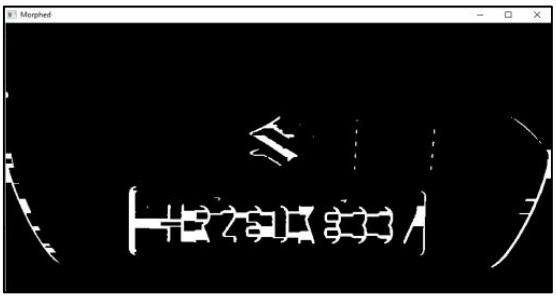
IV. RESULTS

A. Input

B. Sobel

C. Threshold

D. Morphed



E. Contour

F. Output Plate

V. WORK CARRIED OUT

It is the software which is to be useful for law enforcing agencies. It is also been useful for civilians in case of identifying a victim during a unforeseen accidents. They can convey the details of the victim to the concerned authority. Here we need to upload the image to the portal. This image is the subjected to the software and the number plate details are extracted. In this project we also need to make the software user friendly.

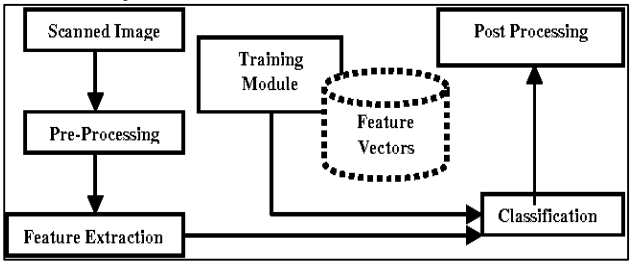


Fig. 1: Architecture of char recognition system

VI. CONCLUSION

Our future effort is to introduce advancements to increase the scope of the application. Our main aim is to privatize the data exposure to the non-authorized publics.

REFERENCES

[1] http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6449828&queryText%3DLicence+plate+recognition+system
[2] http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6779494&queryText%3DImage+feature+detection
[3] Learn Python the Hard Way: A Very Simple Introduction to the ...Book by Zed Shaw

