VEHICLE OWNER INFORMATION USING NUMBER PLATE

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Abstract

Detection also can be called as Recognition is the act of observing something important.The conditions are far and away more terrible in metro urban areas like Delhi, Bangalore and Chennai.It turns out to be difficult to recognize vehicle proprietor who brakes traffic rules and guidelines and drives excessively quick. It isn't constantly plausible to capture and rebuff those individuals in light of the fact that the traffic police probably won't have the option to peruse the vehicle plate number from the moving vehicle in view of the speed of vehicle. Along these lines, it is important to build up a Number Plate Detection framework as one of the answers for this problem which will differentiates between Public and Private vehicles, identifies State and City of the vehicle, also determines the Fancy number plates.

Keywords : License Plate, Vehicle Plate Number, Real Time, Fancy Plate Detection, Image Processing, OpenCV, Database

Introduction

The revolution in assistance with helping traffic polices is in trend. As the populace is expanding the quantity of vehicles out and about is expanding, as a result of the expanding number of vehicles, observing vehicles out and about is an ever present and industrious problem[1].In this way, there must exist a framework which can distinguish and recognize a tag with no human obstruction. As an answer, we are actualizing a framework that catches the moving vehicles with the assistance of camera. So, the objective behind this project is to catch pictures of vehicles from continuous video got from camera and recognize the number plate picture from the different pictures catches, to change the tag picture into content configuration and concentrate the number and character, to decide the state and city of the vehicle from the extricated content, to decide if the vehicle is private vehicle or open vehicle, and to distinguish the non-standard number plates. The CV2 OpenCV library using Python language is used for image Processing. Three steps are involved in the process: Image Acquisition, Plate Recognition and Post Processing.

Flowchart of the System

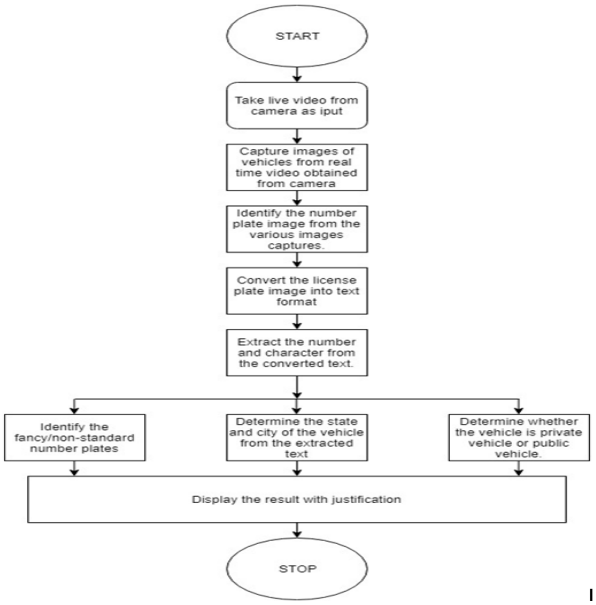

Figure 1: Flowchart

System Design

The live video from camera is considered as information. Location of tag picture from different caught pictures is important. Then this caught picture is further continue to concentrate tag number and convert it as content. After converting it into content format, Edge detection is done. Albeit certain writing has considered the identification of perfect advance edges, the edges got from normal pictures are generally not under any condition perfect advance edges. The edge detection technique we used basically detects the edges present in the captured image n then segregates it n creates another separate image out of it.As we capture a image on road with many vehicles as shown in figure , edge detection will detect each n every license plate using edge detection technique and separate them out as an individual image

when the image is separated then we apply our image to text technique for conversion and we extract number plate in text format.

Experimental results

1. PRIVATE License Plate

Figure 2: Photograph of Private License Plate

2. Image to Text Conversion

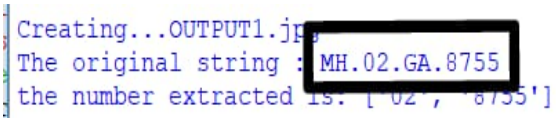

Figure 3: PRIVATE License Plate:Text Conversion

3. Edge Detection:Input

Figure 4: input images for Edge detection

5. State, City, Type of Vehicle in output

Since, the foundation of picture is White, the Number Plate is Private. In the event that it was of Yellow shading, it will be Public one.

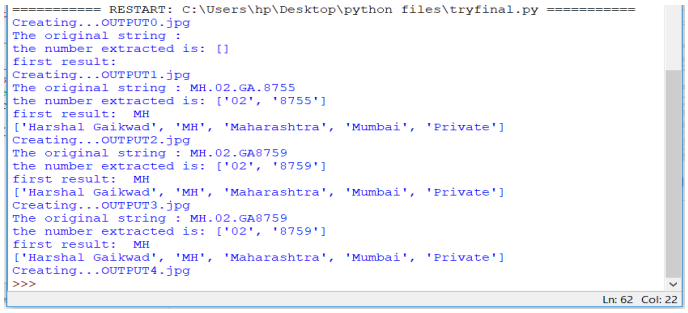

Figure 5: Output for above Private License Plate

6. Output: Standard or Fancy

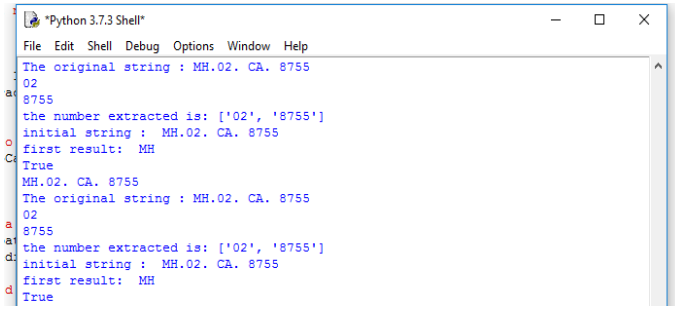

Figure 6: Output for above Private License Plate

Here, **True** shows that the above photo of plate is of Standard kind. On the off chance that the plate wasn't in the standard organization, at that point it demonstrates **False** in yield.

7. PUBLIC License Plate

Figure 7: Photograph of Public License Plate

8. Image to Text Conversion

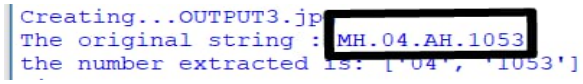

Figure 8: PUBLIC License Plate:Text Conversion

9. State, City, Type of Vehicle in output

Since, the foundation of picture is Yellow, the Number Plate is Public. In the event that it was of White shading, it will be Private one.

```
Creating...OUTPUT3.jpg
The original string : MH.04.AH.1053
the number extracted is: ['04', '1053']
first result:  MH
['Ishita Das', 'MH', 'Maharashtra', 'Thane', 'Public']
Creating...OUTPUT4.jpg
>>>
```

Figure 9: Output for above Public License Plate

10. Output: Standard or Fancy

```
========== RESTART: C:/Users/hp/Desktop/python files/publicfancy.py =
[ MH.04.AH.1053 |
initial string :  [ MH.04.AH.1053 |
True
>>>
```

Figure 10: Output for above Public License Plate

Here, **True** shows that the above photo of plate is of Standard kind. On the off chance that the plate wasn't in the standard organization, at that point it demonstrates **False** in yield.

11. Fancy Plate

Figure 11: Fancy License Plate

12. Output: Standard or Fancy

```
Python 3.7.3 Shell
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.3 (v3.7.3:ef4ec6ed12, Mar 25 2019, 22:22:05) [MSC
4)] on win32
Type "help", "copyright", "credits" or "license()" for more i
>>>
===== RESTART: C:\Users\User\Desktop\doc ssk\BE project\tcod
TEMPORARY
The original string : TEMPORARY
the number extracted is: []
initial string :  TEMPORARY
first result:  TE
first result:
False
>>>
```

Figure 12: Output for above Fancy License Plate

Here, **False** indicates that the above photograph of plate is not of Standard type instead it is Fancy Number Plate.

13. Marathi License Plate

Figure 13: Marathi License Plate

14. Image to Text Conversion

```
>>>
========== RESTART: C:\Users\hp\D
<class 'PIL.Image.Image'>
महशष्ट्र ०२.जीए.८५५५
>>>
```

Figure 14: Marathi License Plate:Text Conversion

It becomes trouble-free to distinguish vehicle proprietor who brakes traffic rules and guidelines. It becomes little feasible to arrest and punish vehicle proprietor. It gives basic but most important information about the vehicle and also gives information about owner.

Camera requires to be ON all time to catch pictures of vehicles. Thus overall system is complex and less reliable.

Conclusion

The continuous number plate detection framework has been applied for catching license plates from genuine situations. This framework has planned applications in open rush hour gridlock requirement, yet additionally in lodging social orders and shopping centers. We originally caught video and after that picture with tag number. At that point we remove the content from that picture utilizing Tesseract library. Numbers and characters are then independent out from the separated content. Database is made utilizing MySQL Workbench. After match happens, data about proprietor's name, city and state of vehicle, and type of vehicle whether open or private will be shown.

Bibliography

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