RECREATING AN AUTOMATIC PLATE RECOGNITION SYSTEM **(ANPR)** THROUGH **MATLAB**

INTRODUCTION

Transportation is a crucial aspect of daily life for individuals, often overlooked in its significance. Whether it's through private vehicles or public transport with strangers, it's imperative for these vehicles to be held accountable for the safety of drivers, passengers, pedestrians, and other drivers. This accountability is achieved through vehicle registration and the issuance of a plate number, which serves as a unique identification for the vehicle. The plate numbers are stored in a database monitored by officials from the Land Transportation Office (LTO), using a system called Automatic Number Plate Recognition (ANPR).

In simple terms, ANPR is a technology that uses optical character recognition (OCR) to read and recognize vehicle registration numbers from images of license plates. It employs various image processing techniques to automatically and quickly identify vehicles in real-time videos or images captured by cameras. ANPR systems are increasingly important for public safety monitoring, law enforcement, and traffic management. In terms of law enforcement, ANPR aids in enforcing and investigating by providing accurate data on vehicles and expediting the process of matching license plate numbers to lists of wanted or stolen vehicles. For traffic management, ANPR allows for precise traffic data collection, generating insights into traffic patterns, and aiding in the construction and adjustment of traffic models to alleviate traffic congestion.

METHODOLOGY

Video Input & Image Acqusition

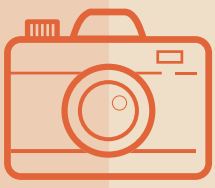

Plate Number Detection & Cropping

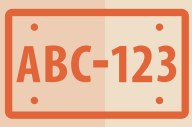

Plate Number Extraction & Reading

Using of Number Plate Information

RESULT

1

Attaining & Cropping of Plate Number

2

Filtering of Plate Number

3

```
translation =
  ocrText with properties:

                      Text: 'UJF 472'
   CharacterBoundingBoxes: [9×4 double]
     CharacterConfidences: [9×1 single]
                    Words: {'UJF 472'}
         WordBoundingBoxes: [12 1 540 129]
           WordConfidences: 0.6400
Plate_Number = 'UJF472'
Last_Digit = '2'
day = 1×1 cell array
    {'Thursday'}
followed_MTh = 'Has followed the Number Coding Rule'
```

Determining if the vehicle follows the Number Coding Rule

CONCLUSION

With the adequate use of the knowledge and understanding attained through this course, applications such as Image Processing and Image Filtering were successfully used to create a working ANPR with the addition of Coding detection to be stored in its database; all through the use of the programming language known as MATLAB.

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