BIRLA VISHVAKARMA MAHAVIDYALAYA ENGINEERING COLLEGE
(An Autonomous Institution)
COMPUTER ENGINEERING DEPARTMENT

SMART TRAFFIC FINE GENERATION SYSTEM

With increase in global population, traffic is also increasing at an exponential rate. Hence, the overall management of traffic today is a big challenge, especially in densely populated countries like India. Moreover, the fine generation process is tedious and also inefficient till certain extent. Hence, this project was undertaken to automate the entire fine generation process. The project begins with an obtained video from crossroads highlighted over specific area and captured when the red light is on. The video will be sliced into image frames, where every image frame will contain those vehicles who have broken the red light signal. Through object detection, the number plate would be cropped from the main image frame. The number written on the number plate will be obtained using CNN and later will be compared with database to import vehicle's owner details in order to generate the memo.

Project Outline

- Record the video of moving vehicles
- Separate the frames of received video
- Remove the duplicate frames
- Apply object detection algorithm for getting vehicle's number plate
- Apply CNN on number plate
- Match the vehicle's number in database
- Send an email to owner of vehicle

Project Modules

Number Plate Detection

Vehicle Number Recognition

Fine Generation through Email notification

Technologies to be utilized

- Python 2.7
- CNN Modules: Tensorflow (Keras)
- ResNet50 (For object detection)
- MySQL Database
- Image Processing libraries: OpenCV, PIL
- Python GUI library Tkinter

Car image

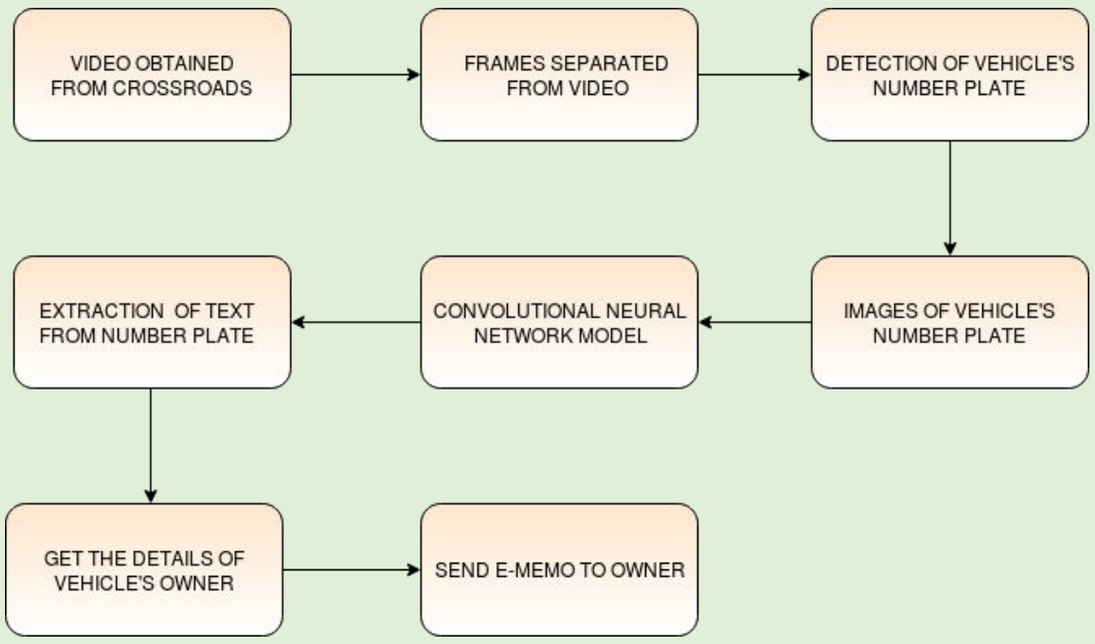
Image processing

Extracted Number Plate

GJ23BD7935

Bounding box over Number plate

Project Flow



Project applications

- For maintaining discipline among public.
- Man labour will be reduced.
- Digitization in traffic controlling system.
- Transparency in fine collection.

Project Guides:
Dr. Narendra M. Patel
Prof Prashant B. Swadas

References:

https://docs.python.org/2.7/tutorial/index.html
http://docs.opencv.org/3.2.0/
http://keras/stable/documentation.html
https://www.PILpython.com/

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