

Traffic Management

Problem Statement:

In the urban areas, the people use to break the signal, Over speed and unauthorized lane usage which to unsafety of the other peoples. Manually monitoring of such problem is very difficult and hence there is a need to be of the automated system which will detect the number plate of the vehicle and store its text into the system whereas to keep the record of each of the vehicles.

Solution:

We have planned to design a system in such a way that will detect and recognize the number plate of each of the vehicle – Car / Bike and then store into the system where there is no need of the human and the whole tracking system can handle and maintain without any errors.

Algorithms used for this:

1. Yolo v8 model – This Algorithm is used in order to detect the number plate of the vehicle → [For this we used the library: Ultralytics]
2. Open CV – This is used for the Image Pre-Processing for the image preprocessing and analysing.
3. Image Cropping (Open CV) – This is used to take the cropped image separately for the processing to take the text.
4. Easy OCR – This is used convert the Cropped image into the text i.e. (Text Recognition).
5. Streamlet – This algorithm is used for the deployment of the data into the real time.

Libraries Used:

1. !pip install untralytics
2. !pip install opencv-python
3. !pip install matplotlib
4. !pip install pandas
5. !pip install easyocr