

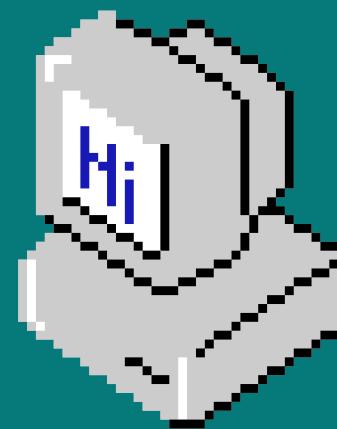
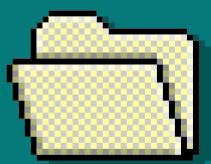
Traffic Monitoring System



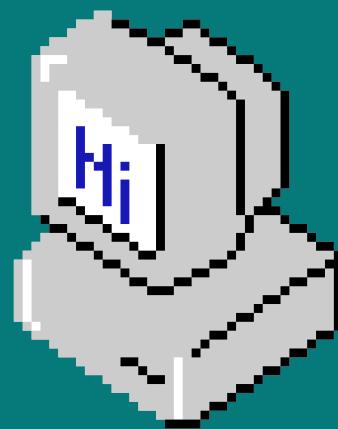
DIP Semester Project

11:11PM

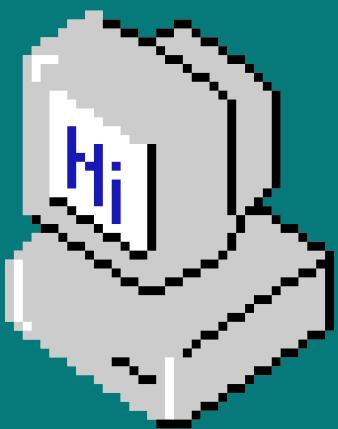
Group Members



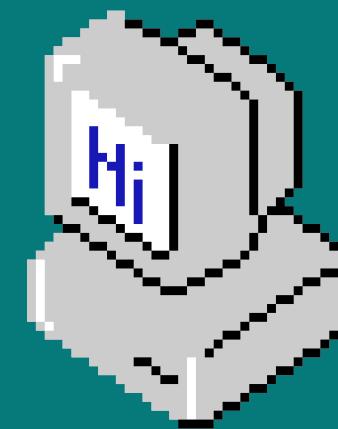
Huzifa
Liaqat



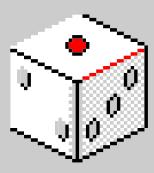
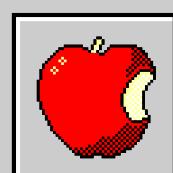
Hunaina
Ehsan



Ali
Awais
Safdar

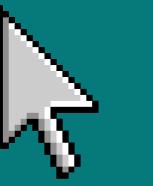


Zainab
Kashif

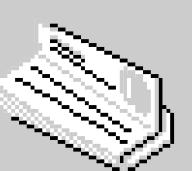
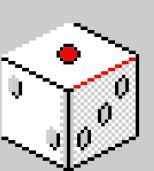
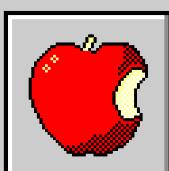


[Back to Agenda Page](#)

Introduction



A vehicle speed detection system with incorporated speed calculation and speed limit offender recognition by license plate detection using easyocr



[Back to Agenda Page](#)

Topics Covered

Start

Vehicle Detection

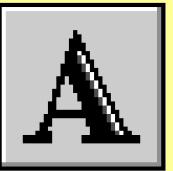
Speed Calculation

Recognizing Offenders

Agenda

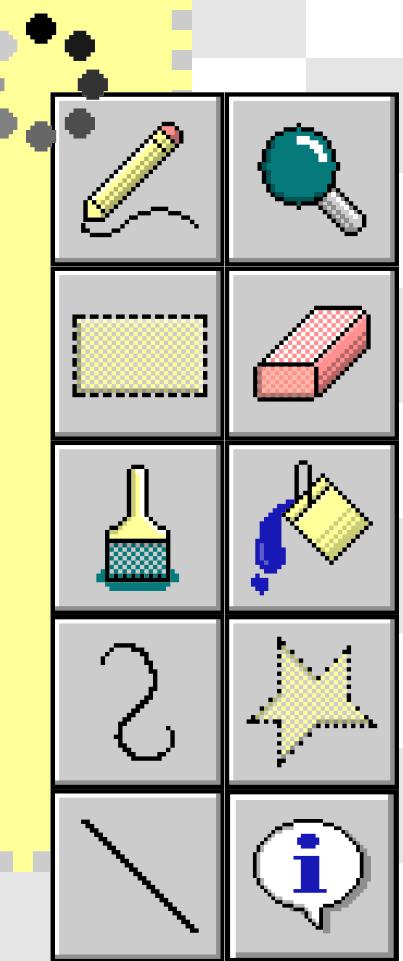
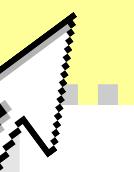
!

i

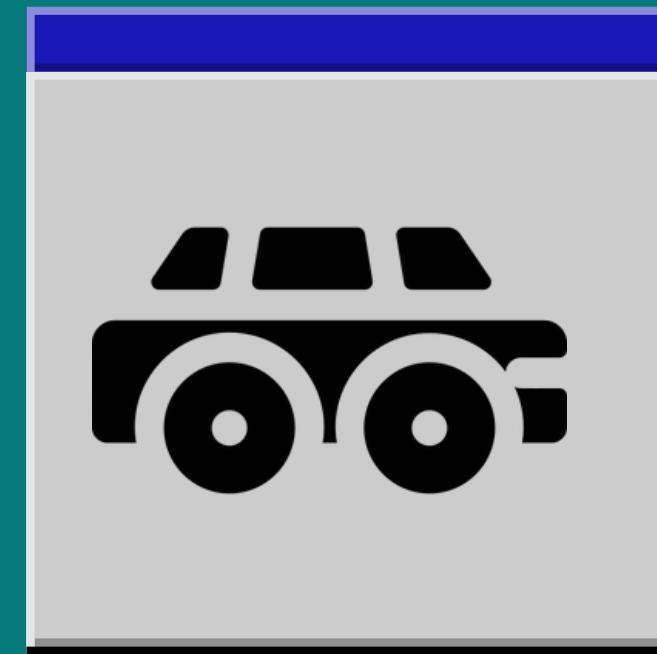
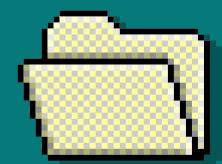


Methodology

[Back to Agenda Page](#)

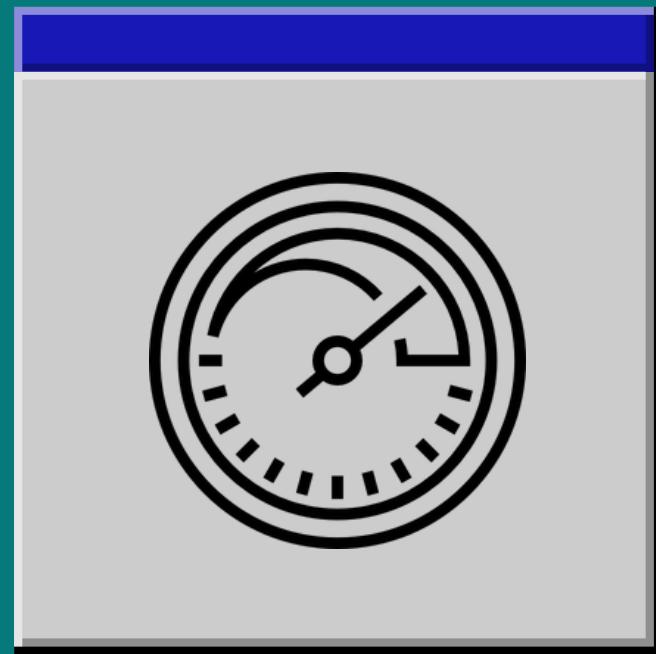


Methodology



Vehicle Detection

Utilize the OpenCV library with a pre-trained car classifier ("car.xml").



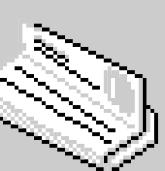
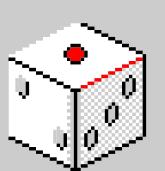
Speed tracking

Implement object tracking with the Dlib library, correlating positions across frames.



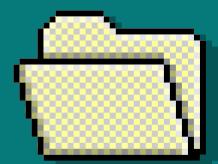
License Plate Detection

Utilize EasyOCR for text detection and recognition.



[Back to Agenda Page](#)

Methodology



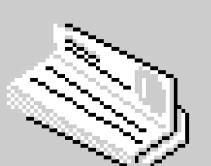
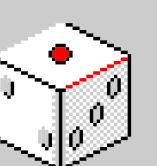
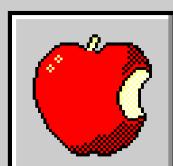
Result Visualization

Use OpenCV for real-time visualization and save processed frames with detected license plates to the "offenders_identified" folder.



Offender Identification

Save images when speed exceeds a predefined threshold



[Back to Agenda Page](#)

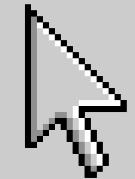
Car Tracking

Initial Detection

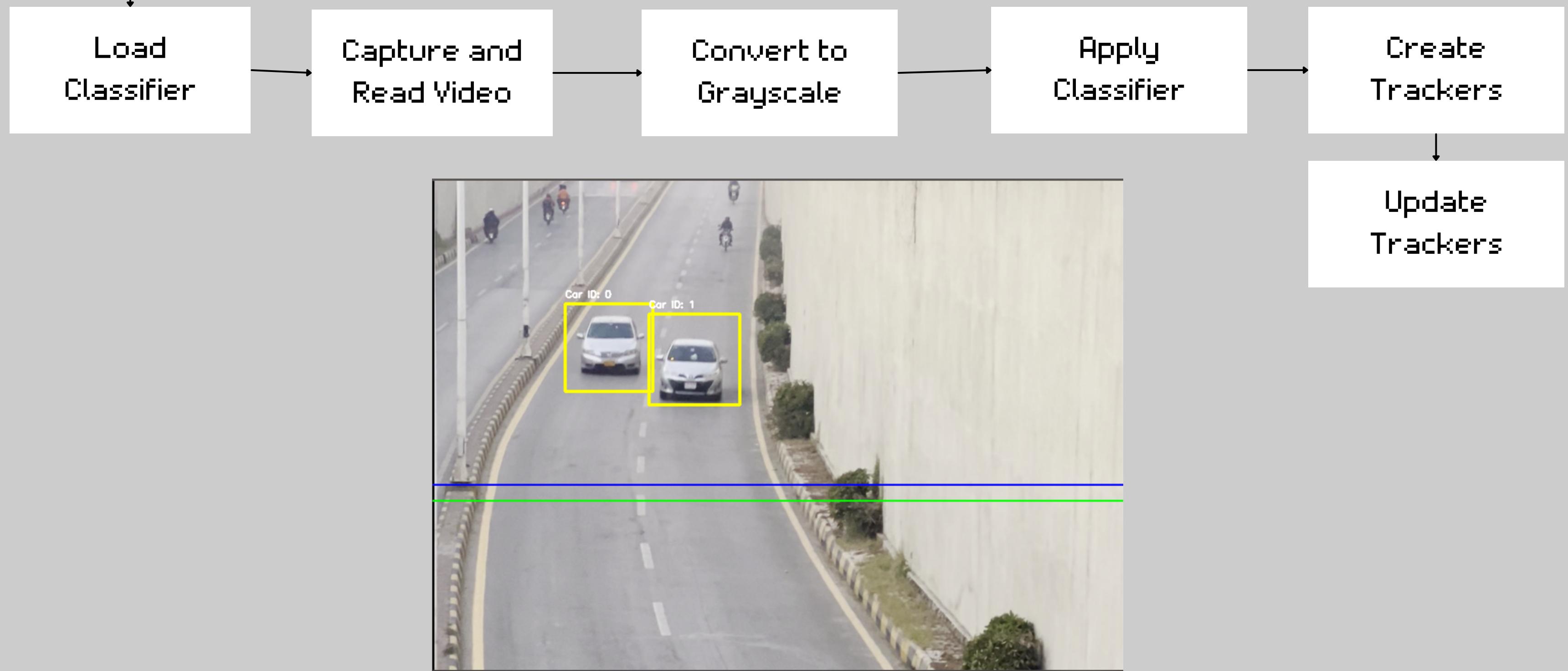
The Haar Cascade classifier is used for initial vehicle detection

Maintaining Trackers

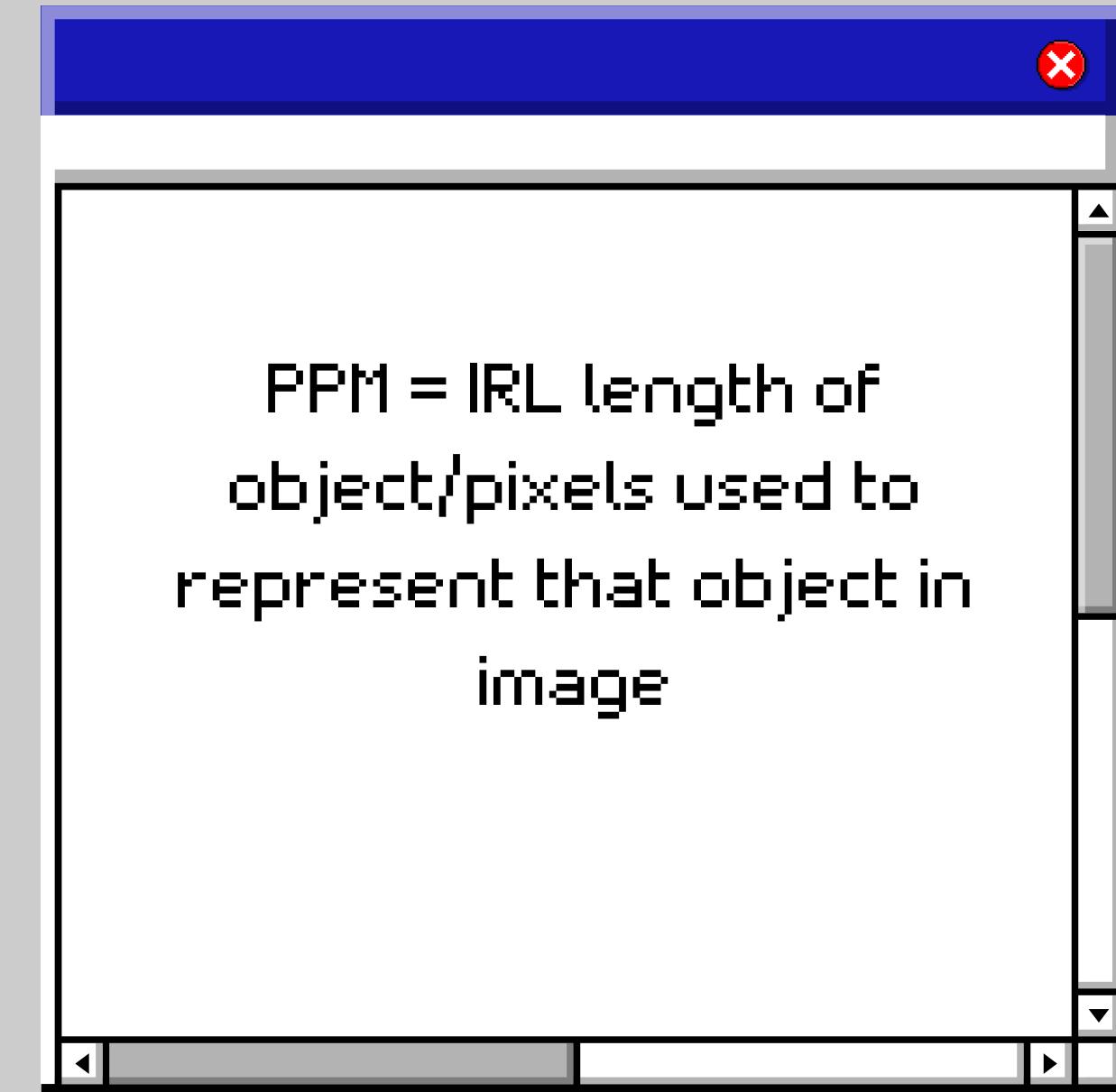
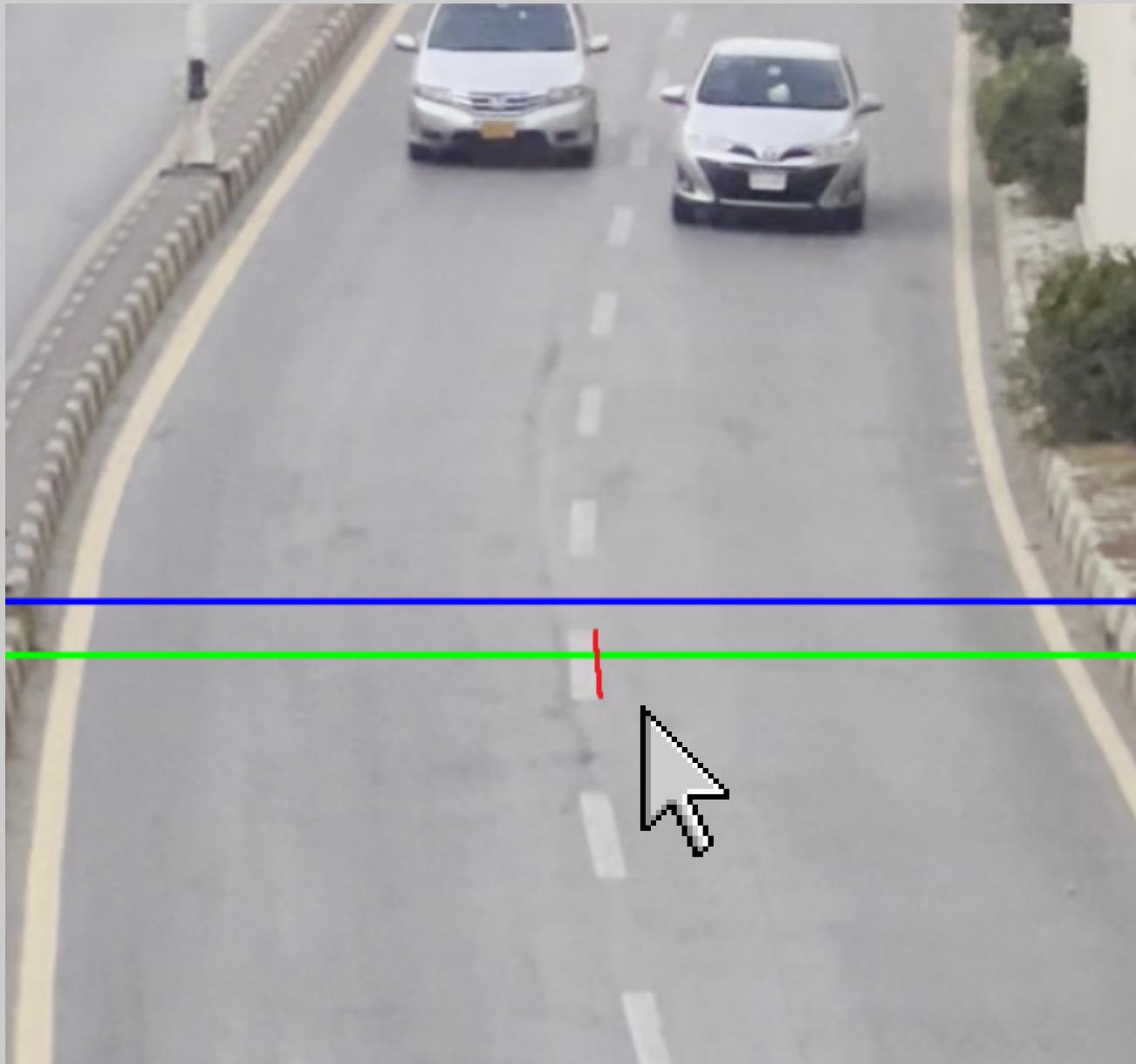
The dlib correlation tracker is used to maintain trackers



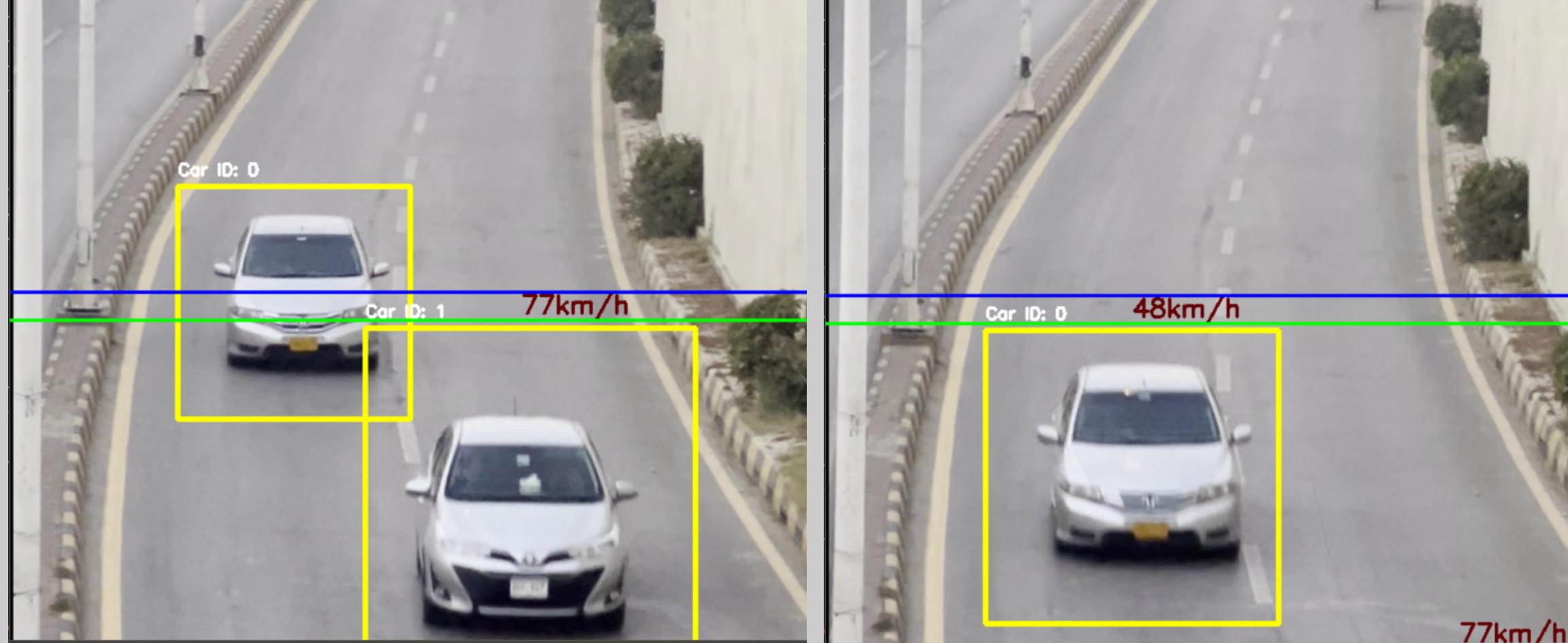
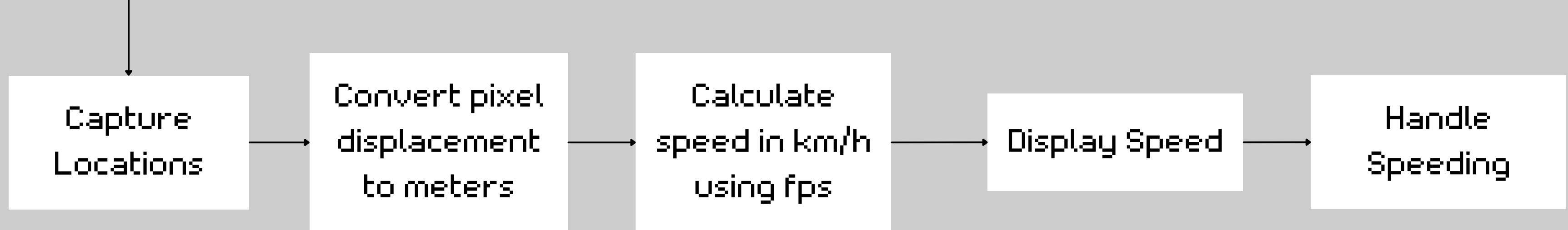
Car Tracking



Calculating Speed

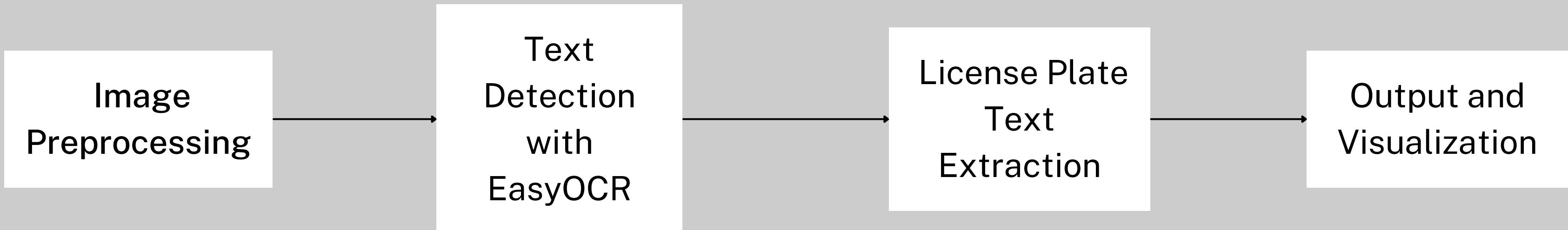


Speed Calculation



Calculate Speed!

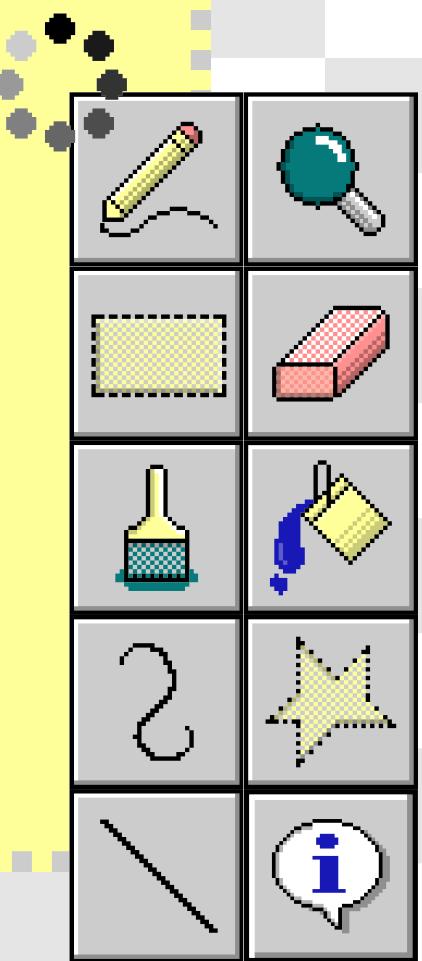
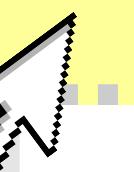
License Plate Recognition





AI Component

[Back to Agenda Page](#)



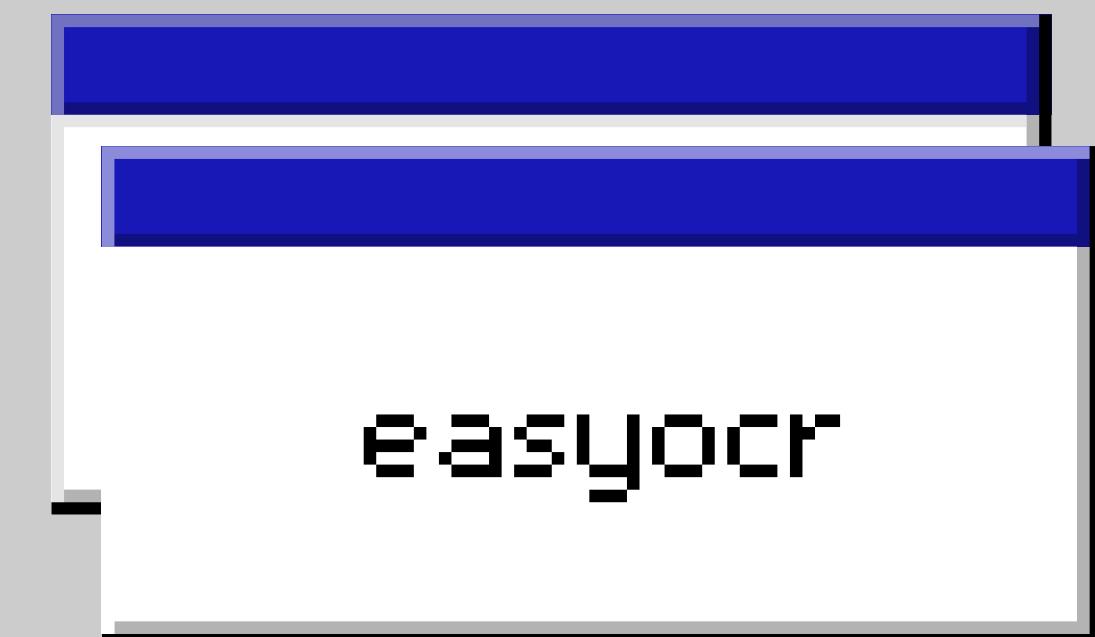
AI Component



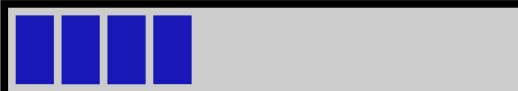
The "learning" aspect here is related to the filter computation based on the initial object appearance



Trained on positive and negative image samples

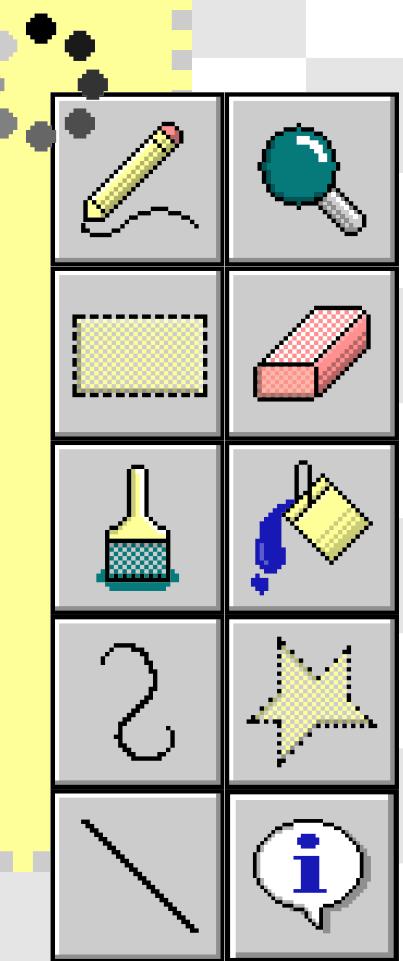
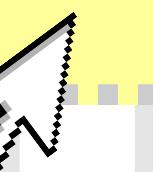


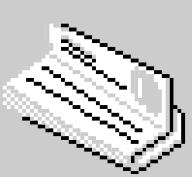
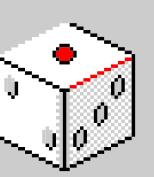
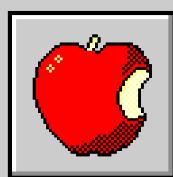
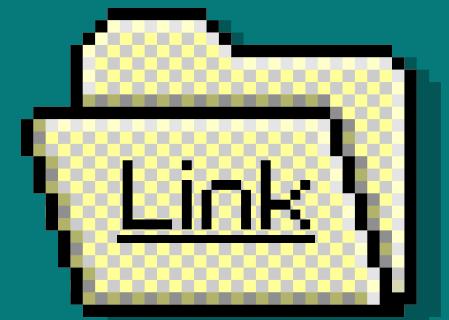
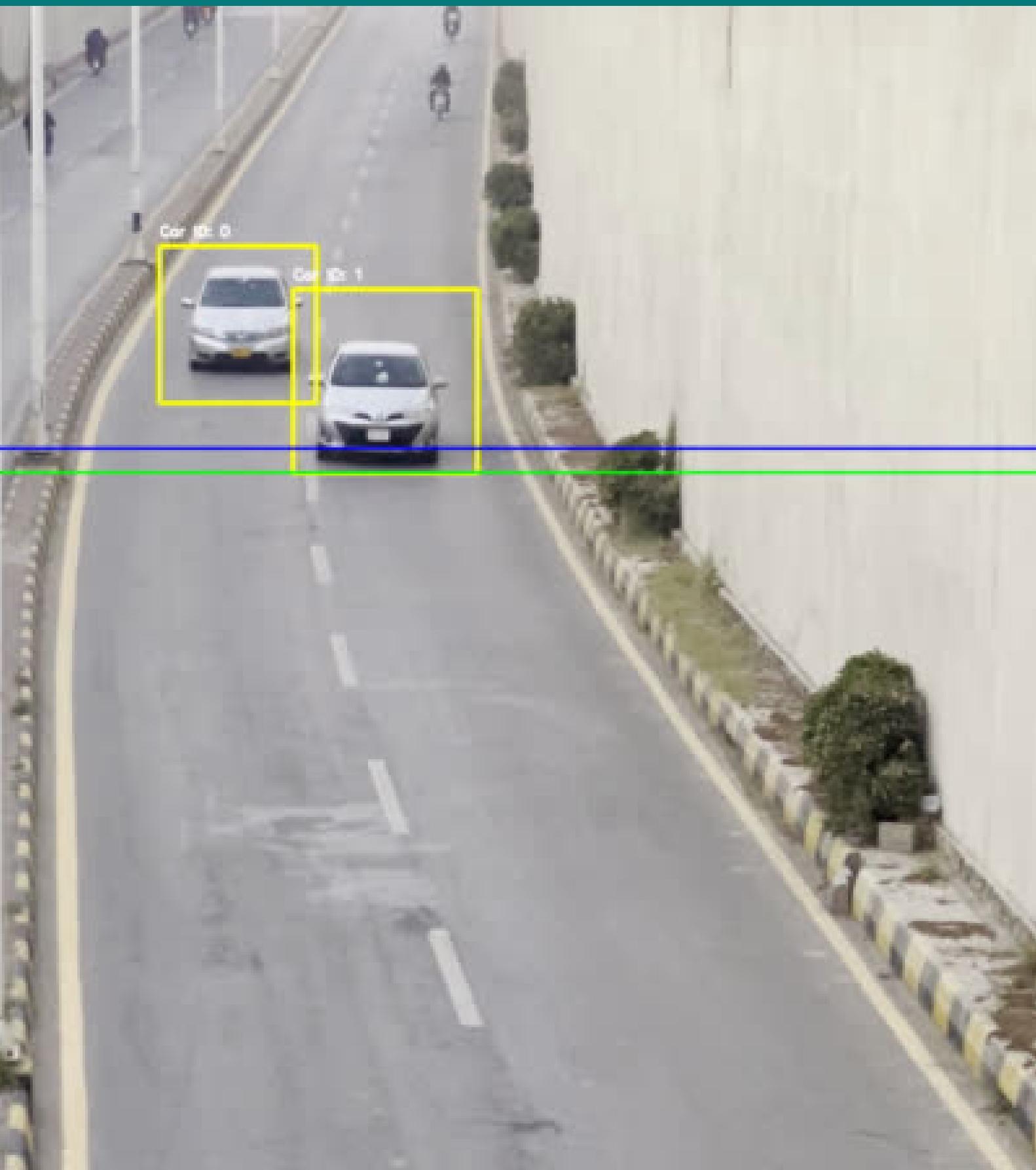
Employs
-> Pre-processing
-> Convolutional Neural Networks (CNNs)
-> Text Detection
-> Text Recognition and Post-Processing



Demo!

[Back to Agenda Page](#)





[Back to Agenda Page](#)

Thank you!

^_~

