SMC Sidewalk Scooter Detection

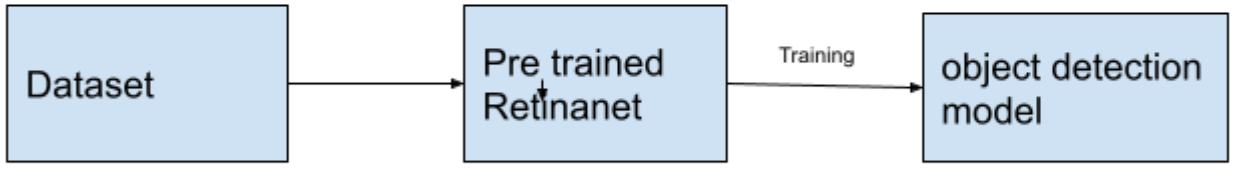
System description

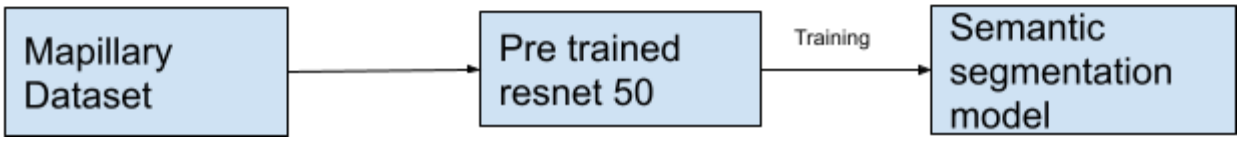
The System includes two modules one to detect the scooter and track it and the other to detect the sidewalk and road.

Object detection :

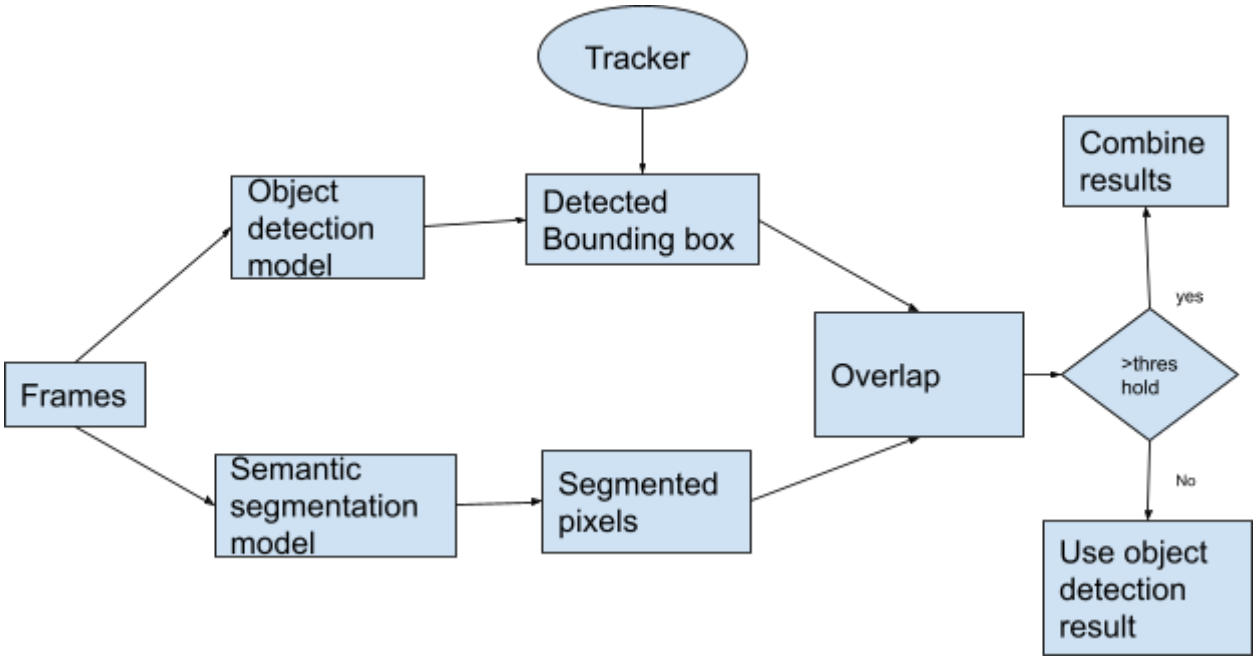
We built an object detection model using retinanet to detect the electric scooters and in conjunction used trackers to track them. A tracker is assigned once the scooter is detected and the position of the tracker is adjusted based on the object detection algorithm. When there is a threshold overlap between tracker and object detection algorithm the tracker is adjusted to depict the bounding box of the object detection model.

We built a semantic segmentation model by using a Mapillary dataset that segments the pixels into the sidewalk and the street. The sidewalk is checked with the bounding box obtained from object detection and f the overlap is over a certain threshold then the bicycle is classified as in street or in the road.





System Model:



Steps to set up the code and start running-

1. Add camvid.tiny folder in AWS>santamonica
2. Add model in the models folder in AWS>santamonica>models
3. Go to the AWS folder and run the command “Python manage.py runserver”
4. The website can be found at displayed local address