# Vehicle Detection, Tracking and Counting

* Good survey with example codes
* <https://www.behance.net/gallery/Vehicle-Detection-Tracking-and-Counting/4057777>
* Here is some tips to do vehicle tracking and counting:
  + First, perform a background subtraction.
  + Send the foreground mask to **cvBlob** or **OpenCVBlobsLib**.
  + The **cvBlob** library provide some methods to get the centroid, the track and the ID of the moving objects. You can also set if you want to draw a bounding box, or the centroid and the angle of the tracked object.
  + Check if the centroid of the moving object has crossed a virtual line (or region) in your video.
* Some traffic video databases:
  + <http://i21www.ira.uka.de/image_sequences/>
  + <http://www.ee.cuhk.edu.hk/~xgwang/MITtraffic.html>
  + <http://www.svcl.ucsd.edu/projects/traffic/>
* Main 2 methods discus here
  + Vehicle Detection with Haar Cascades
  + Vehicle Detection with Background Subtraction

# Image Segmentation

1. Image Segmentation with Watershed Algorithm

* OpenCV document
* <http://docs.opencv.org/trunk/doc/py_tutorials/py_imgproc/py_watershed/py_watershed.html>

1. Image Segmentation using Unsupervised Watershed Algorithm with an Over-segmentation Reduction Technique
   * <http://www.codeproject.com/Articles/751744/Image-Segmentation-using-Unsupervised-Watershed-Al>
   * Good tutorial to fallow we can modify this and use in our app
   * Source code available

# Research papers

* Video Based Vehicle Detection and Its Application in Intelligent Transportation Systems
* VEHICLE DETECTING AND TRACKING IN VIDEO FOR INCIDENT DETECTION
* Vehicle detection video through image processing: the Autoscope system
  + Good paper to get help to write paper