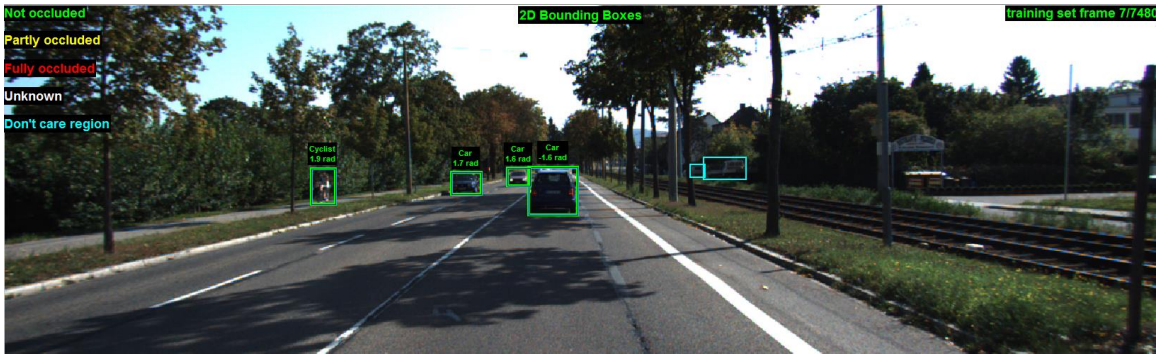
Homework Assignment #7

DUE: 5:00pm, Sunday May 15th (Electronic turnin required)



You are to use some public-domain datasets to perform certain object recognition tasks. For a homework assignment, you might want to look into small data sets, e.g., http://www.vision.caltech.edu/Image_Datasets/Caltech101/. This data set contains pictures of objects belonging to 101 categories. About 40 to 800 images per category. Most categories have about 50 images. The size of each image is roughly 300 x 200 pixels.

Larger and more meaningful datasets are also available. For example, the KITTI's object detection and object orientation estimation benchmark (http://www.cvlibs.net/datasets/kitti/eval_object.php) consists of 7481 training images and 7518 test images, comprising a total of 80,256 labeled objects.

This is a wide-open assignment, more like a mini project, as we are not dictating (1) what data sets you choose, (2) what features you use, (3) how you partition your data sets for training and validation, (4) what classification scheme you use, (5) how you perform cross validation, etc. You need to write a short report (< 5 pages) that explains your choices of (1) to (5) above. In your report, you also need to detail your experimental results, e.g., precision vs. recall tradeoff (ROC curve), expected recognition accuracy, and lessons learned.