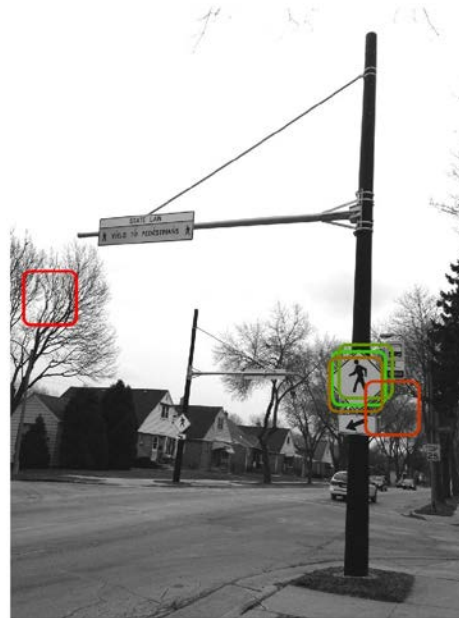


HW 4

Results:

1) Single Scale Detector (template extracted from 1 positive example): detect_script.m



2) Single Scale Detector (template extracted from 5 positive example):
improved_detect_script_trainedtemplate.m with negative template code commented out





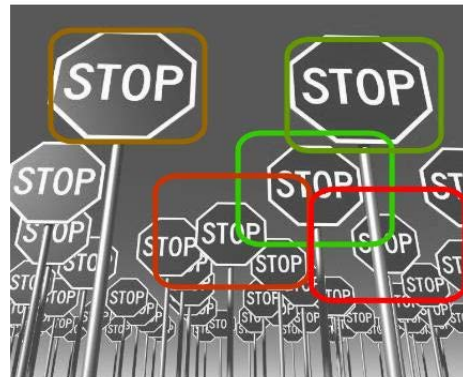
Sign Post Reflector in typical crosswalk application

3) Single Scale Detector (template extracted from 5 positive and >hundred negative examples):
improved_detect_script_trainedtemplate.m



Sign Post Reflector in typical crosswalk application

4) Multiple Scale Detect: multiscale_detect.m and improved_multiscale_detect.m



Positive examples used in single scale detector variants:



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Positive examples used in multi scale detector:



All negative examples were extracted from this image:



Note: I used a total of ~200 negative examples rather than 100. The exact number of negative examples used depends on the template size. The larger the template the less negative examples are utilized. This was done out of convenience.

5) How is this detector different from the one in assignment 2? Use of histogram of gradient orientations (HOG) is the key reason this detector performs better than simple correlation detector from assignment 2.