

CS 216 Homework 4

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Single Scale Detector Output

Output for test1.jpg

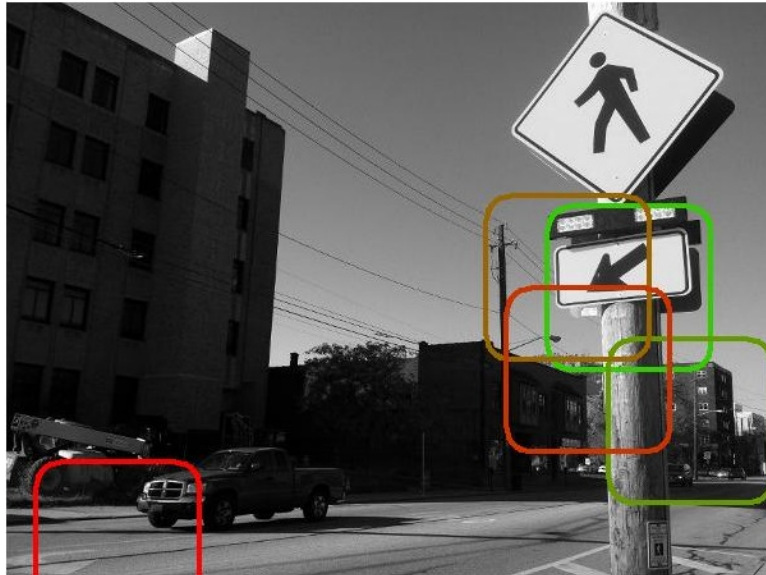


Figure 1: Detector Output with single positive template

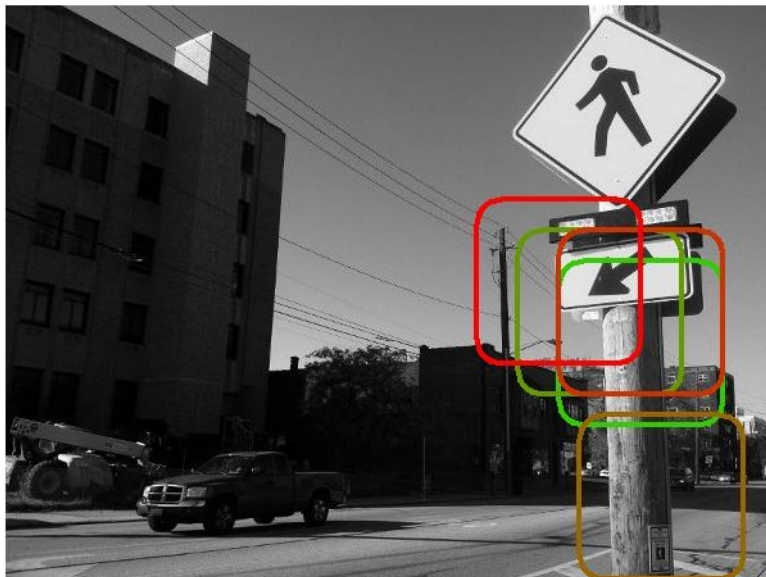


Figure 2: Detector Output with 5 positive templates

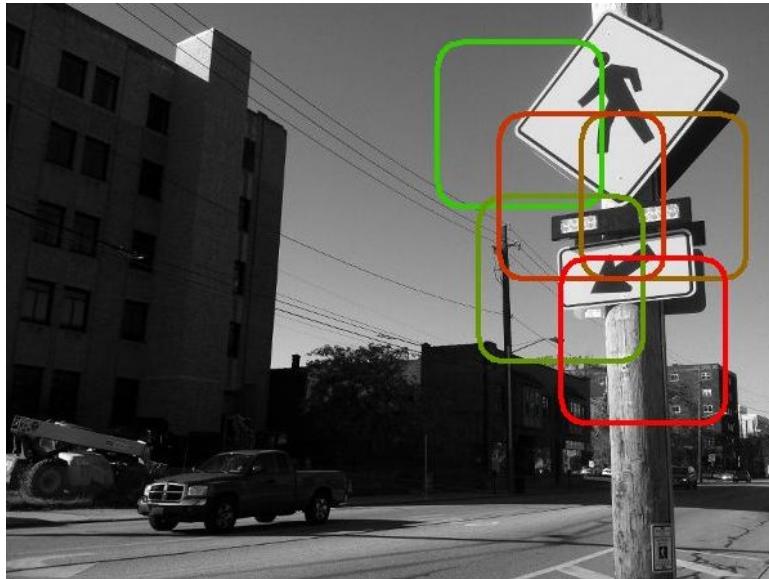


Figure 3: Detector Output with 5 positive templates and 100 negative templates

Output for test4.jpg

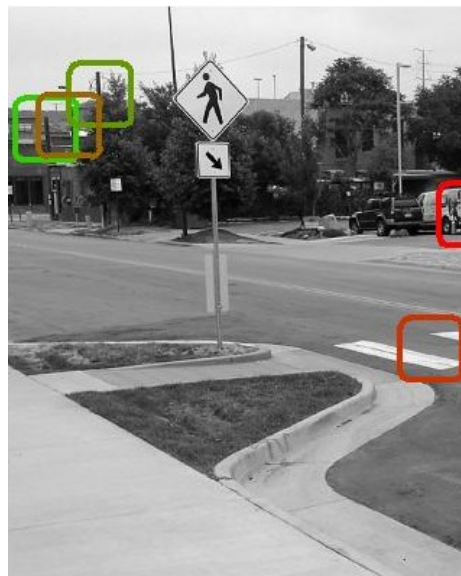


Figure 4: Detector Output with single positive template

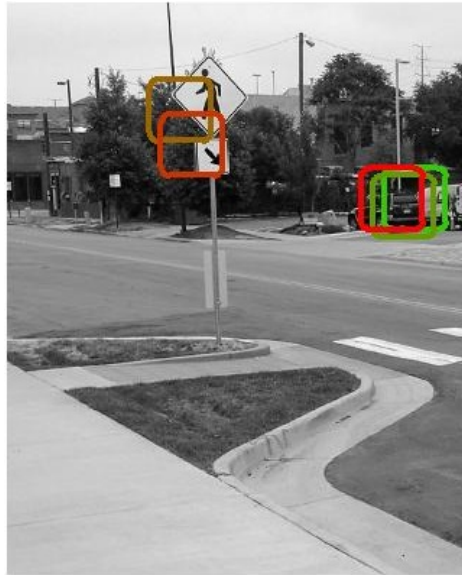


Figure 5: Detector Output with 5 positive templates

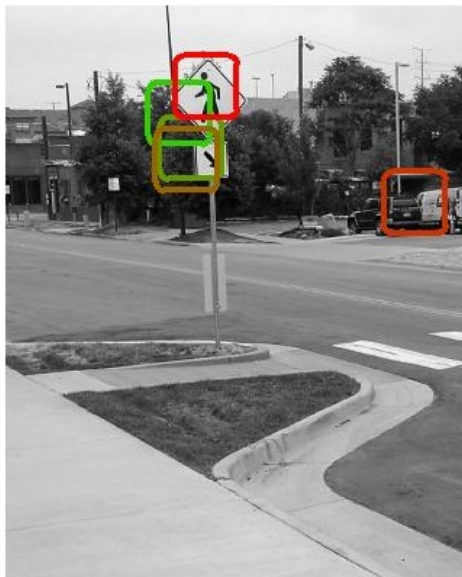


Figure 6: Detector Output with 5 positive templates and 100 negative templates

Multiscale Detector Output

Final Output for test images

I used 0.7 as a scale factor. The best results ended up being at the first level in the image pyramid, so in the next section are the detected results at each of the other levels of the pyramid.

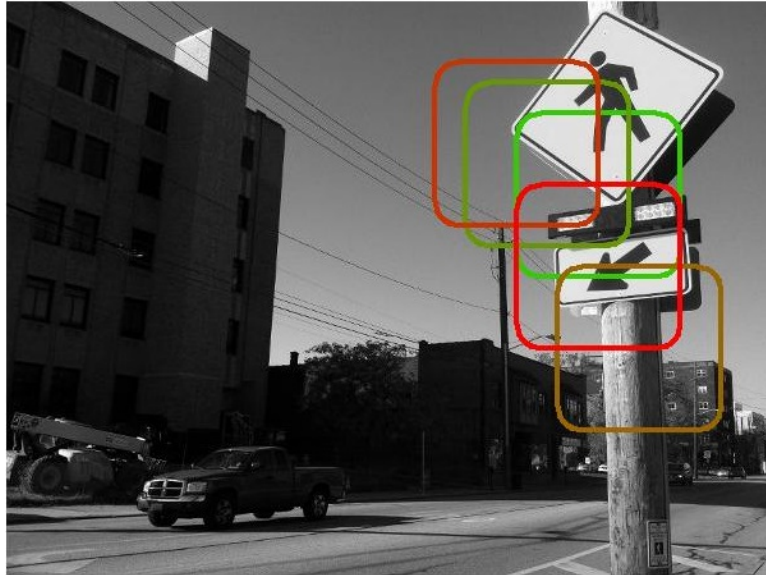


Figure 7: Final multi scale detector output for test1.jpg

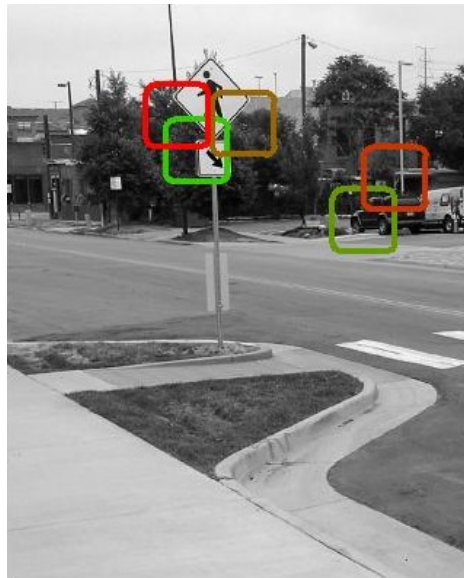


Figure 8: Final multi scale detector output for test4.jpg

Output at multiple scales for test1.jpg

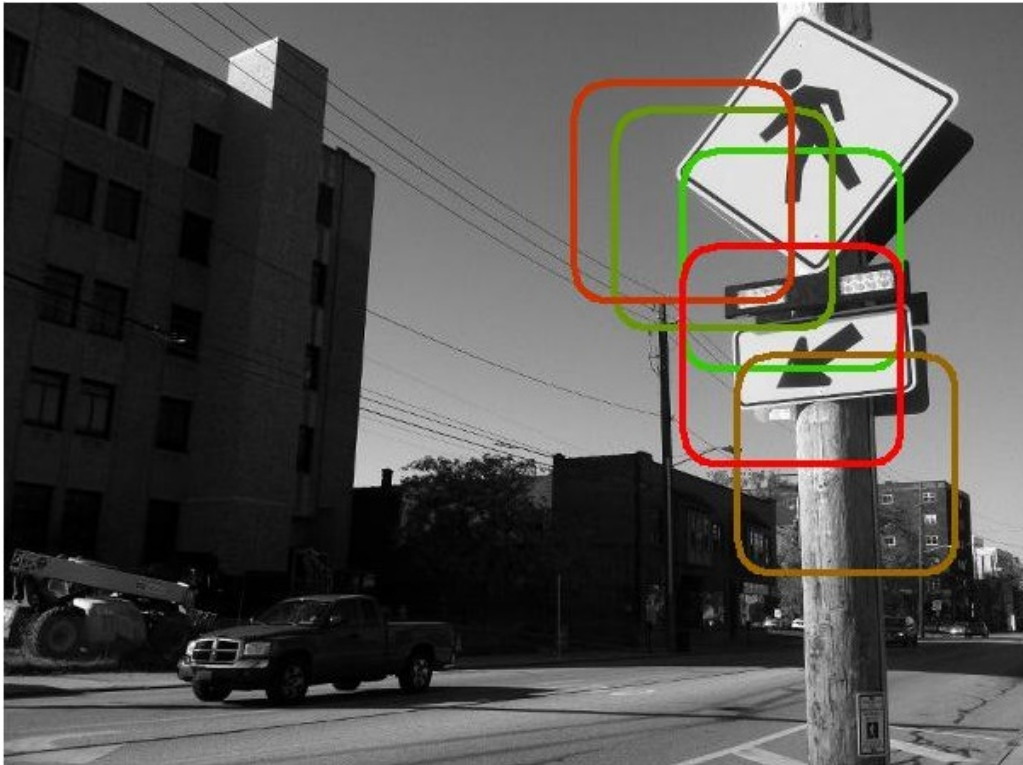


Figure 9: Detector output for test1.jpg at level 1 in image pyramid

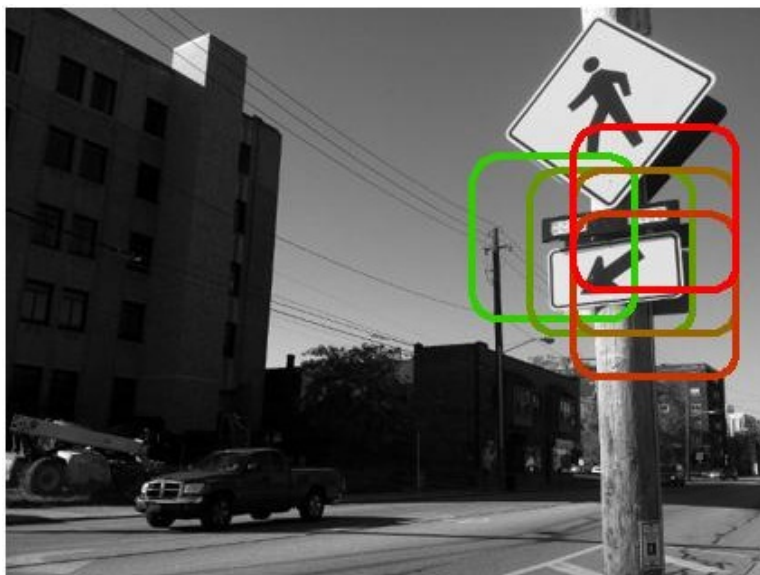


Figure 10: Detector output for test1.jpg at level 2 in image pyramid

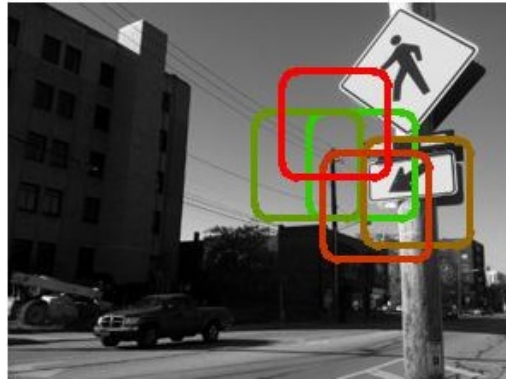


Figure 11: Detector output for test1.jpg at level 3 in image pyramid

Output at multiple scales for test4.jpg

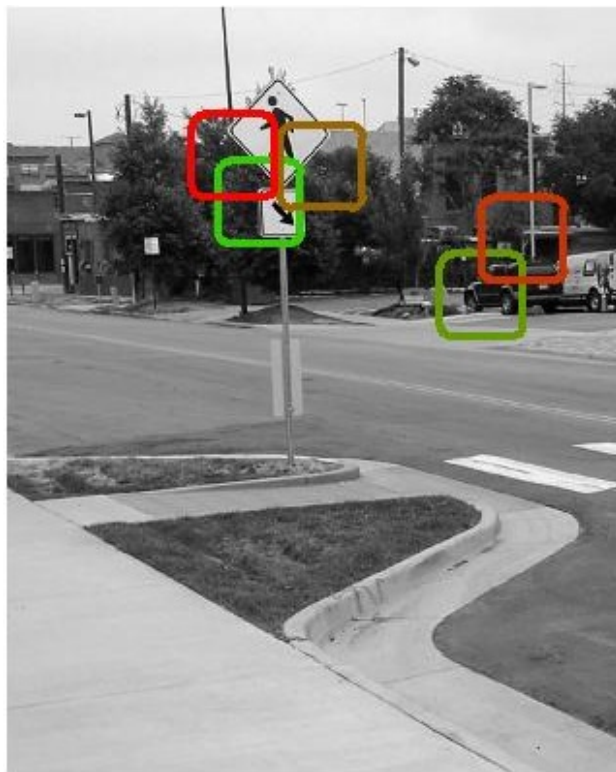


Figure 12: Detector output for test4.jpg at level 1 in image pyramid

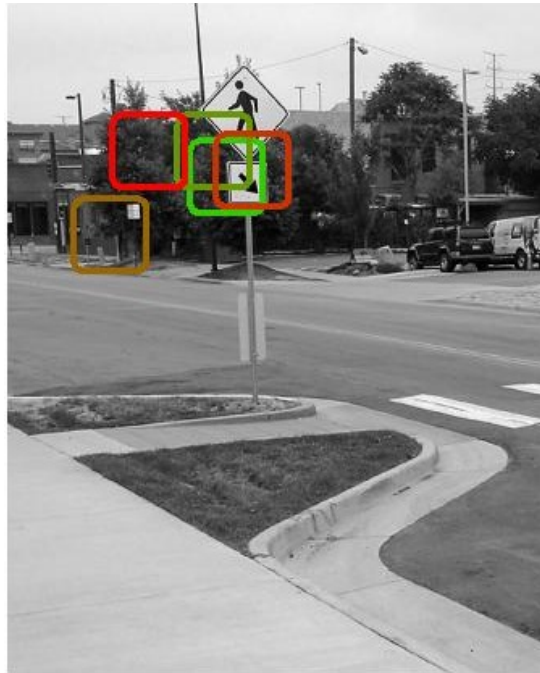


Figure 13: Detector output for test4.jpg at level 2 in image pyramid

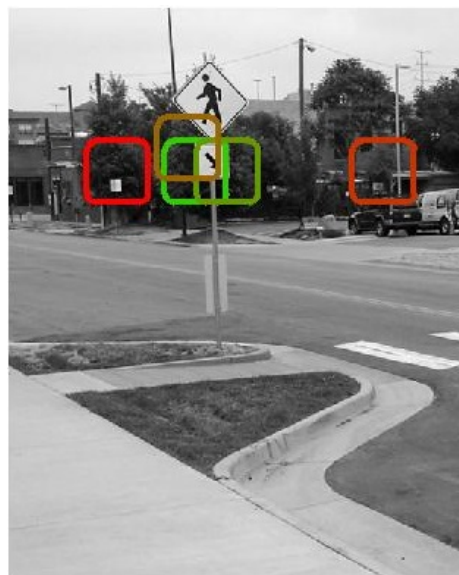


Figure 14: Detector output for test4.jpg at level 3 in image pyramid

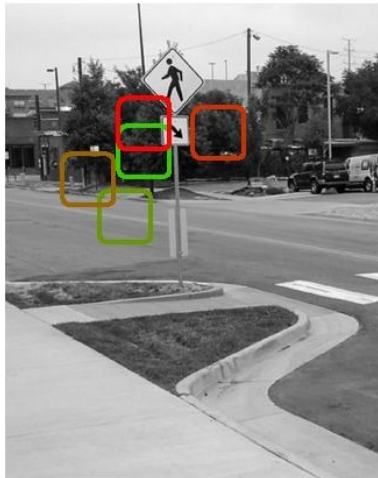


Figure 15: Detector output for test4.jpg at level 4 in image pyramid

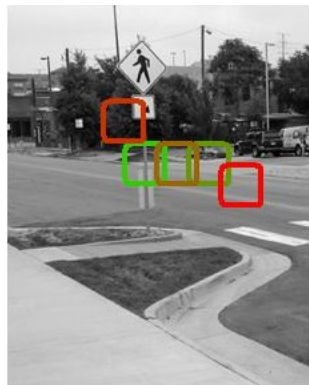


Figure 16: Detector output for test4.jpg at level 5 in image pyramid

Templates Used for Detection

The Five Positive Templates



Figure 17: Pedestrian sign image from internet



Figure 18: Pedestrian sign image from test3.jpg



Figure 19: Pedestrian sign image from test4.jpg



Figure 20: Pedestrian sign image from test5.jpg



Figure 21: Pedestrian sign image from test6.jpg

The 100 negative examples

These are in the zip file containing the code inside a folder entitled prob4negTrain.