

Q2.1:

Total CPU time:

Bottle: 1611.96912 ms

Coral: 1611.41 ms

Orange: 1525.39868 ms

City: 1641.6519 ms

Total CUDA time:

Bottle 1611.93921 ms

Coral: 1611.31714 ms

Orange: 1525.036 ms

City: 1641.70605 ms

DetectNet took around 1.6 seconds to detect the images we had given the software. Both the CPU and CUDA took around the same time to complete the whole process, they took different times in different areas of the whole process. This is because CUDA had to process images and then visualize it, while the CPU's runtime was mainly taken up by network and post processing.

Q2.2

The highest confidence detected was the bottle at 99.3% certainty and the lowest confidence was a car at 52.7%. Technically the oranges were the lowest confidence level because it failed to detect anything.

Q2.3

The file that took the longest was City_5.jpg because DetectNet had the most objects to detect (at least it thought so). It detected 3 out of several objects found in a city (pedestrians, cars, buildings, etc.) but only detected three.

Q2.4

For the most part, CPU took longer than CUDA except for City.jpg, we believe this is because CUDA runs sub-processes in parallel but it works on identifying each object individually. The CPU is better at jumping and preprocessing objects while CUDA has to actually take time to preprocess each image and its visualizing speed is not fast enough to make up for the loss in time.