Mask R-CNN

A screenshot of a computer

Description automatically generated

Faster R-CNN

A screenshot of a computer program

Description automatically generated

YOLO

A screenshot of a computer

Description automatically generated

Based on my results tables, Faster R-CNN detects the highest number of objects, up to 100 in some images as well as a few more than Mask R-CNN in the same images, making it the best when requiring object detection in complex scenes. It is also faster than Mask R-CNN when it comes to processing times. The benefit of Mask R-CNN is that it seems to have slightly higher confidence probabilities than Faster R-CNN.

YOLO is the fastest, processing images much quicker than the other two, but it detects fewer objects and may miss objects in very detailed images. I would choose my model depending on the task at hand, what I was trying to do, and how much time I had accomplish my goal.

YOLO (enhanced)

A screenshot of a computer

Description automatically generated

I was curious to see if I could get the positions of objects so I added a command to the code that would get me the position of the object within the image and that’s how I got the ‘Relative Position’. I was also curious about the pixel size of the objects so I added code that would get me the area of the object in pixels, and that’s how I got ‘Object Area’.