**MSBA 503 Take Home Assignment**

*By Pamela Castillejos A.*

PART I

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Image Name | Model | Detection Time | Objects Detected | Avg Confidence | Image |
| 3f71fb47.jpg | Faster R-CNN | 6.96s | 7 | 0.29 | A screenshot of dogs in a car  Description automatically generated |
| 3f71fb47.jpg | Yolov8 | 0.30s | 4 | 0.44 | A screenshot of dogs lying in a car  Description automatically generated |
| IMG\_1113.jpeg | Faster R-CNN | 6.02s | 19 | 0.33 | A group of books on a bed  Description automatically generated |
| IMG\_1113.jpeg | Yolov8 | 0.42s | 2 | 0.43 | A group of books on a bed  Description automatically generated |
| IMG\_1352.jpeg | Faster R-CNN | 6.14s | 9 | 0.28 | A screenshot of a food box  Description automatically generated |
| IMG\_1352.jpeg | Yolov8 | 0.41s | 10 | 0.40 | A screenshot of a food tray  Description automatically generated |
| IMG\_4897.jpeg | Faster R-CNN | 6.86s | 1 | 0.23 | A painting on the wall  Description automatically generated |
| IMG\_4897.jpeg | Yolov8 | 0.37s | 1 | 0.72 | A framed picture of a person  Description automatically generated |
| IMG\_7973.jpeg | Faster R-CNN | 7.42s | 9 | 0.20 | A screenshot of a fruit stand  Description automatically generated |
| IMG\_7973.jpeg | Yolov8 | 0.43s | 4 | 0.32 |  |

The Faster R-CNN model, even though it was able to predict a higher number of objects in most images, often mislabeled the items or detected non-existent objects. On the other hand, YOLOv8 had a substantially higher average confidence and a much lower detection time. In my opinion, I would choose YOLOv8 over Faster R-CNN, not only because it performs better, but also because the only advantage of Faster R-CNN—detecting more objects—is negated in cases where both models detect almost the same number of objects.

PART II

For further analysis of these images, I decided to extract the dominant colors or color palette. This approach is useful for understanding the aesthetic properties or identifying the environment depicted in the images. The results show the dominant colors detected in each image, represented as RGB (Red, Green, Blue) color values:

* **3f71fb47.jpg**: [63, 65, 64]: Dark gray
* **IMG\_1113.jpeg**: [226, 223, 218]: Light beige/off-white
* **IMG\_1352.jpeg**: [120, 119, 117]: Medium gray
* **IMG\_4897.jpeg**: [164, 169, 168]: Soft light grayish blue
* **IMG\_7973.jpeg**: [29, 33, 33]: Very dark gray/black

These extracted colors provide insights into the overall tone and visual characteristics of the images.