### Comparative Analysis of Object Detection Models

Dataset Used: COCO and Pascal VOC 2007

GITHUB REPO: https://github.com/naman065/Inter-IIT-PrepCamp

**Fast RCNN**

* 1. **Qualitative Observation:** Very Slow to Train(>3hr on T4 GPU) so I stopped it in between.

**Faster RCNN**

* 1. **Qualitative Observation:** Faster to Train than Fast RCNN, took around 1hr to train on Pascal VOC 2007 with 5000 iterations.
  2. **Quantitative Metrics:** mAP-46.077 mAP50-71.06

**YOLO**

* 1. **Qualitative Observation:** Extremely fast to train took around 15 mins.
  2. **Quantitative Metrics: mAP-73.05 (YOLOv5 on COCO)**

**Mask R-CNN**

* 1. **Qualitative Observation: Took around 1.2 hr to train on PascalVOC and masked objects accurately.**
  2. **Quantitative Metrics:** mAP-56.23, slightly slower than Faster RCNN due to mask prediction.

**DeepSORT**

1. **QUALITATIVE:** Used On Top of YOLO7, inputed a 30s video which took 20 mins for detection and tracking
2. **QUANTITATIVE:** The tracking and detection was very accurate and precise.

FOR FULL METRICS VIE THE NOTEBOOK ON REPO!