

# AERO2ASTRO

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Today i had trained PP yolo v2 model upto 1327 epochs. The minimum loss is 18.

## Previous Model Evaluation:(PP yolo v1 1000 ins):

```
Accumulating evaluation results...
DONE (t=0.15s).
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.056
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.113
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.049
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.044
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.066
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.130
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.051
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.134
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.179
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.144
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.231
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.201
[08/13 14:25:45] ppydet.metrics.coco_utils INFO: Per-category of bbox AP:
+-----+-----+-----+-----+-----+
| category | AP | category | AP | category | AP |
+-----+-----+-----+-----+-----+
| bird     | 0.146 | book     | 0.007 | bottle   | 0.175 |
| car      | 0.007 | person   | 0.000 | chair    | 0.000 |
+-----+-----+-----+-----+-----+
[08/13 14:25:45] ppydet.metrics.coco_utils INFO: per-category PR curve has output to bbox_pr_curve folder.
[08/13 14:25:45] ppydet.engine INFO: Total sample number: 177, average FPS: 18.61171957113853
```

## Model Evaluation : (Training data):

```
Accumulating evaluation results...
DONE (t=0.67s).
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.552
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.914
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.616
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.459
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.658
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.695
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.245
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.614
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.697
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.605
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.777
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.828
[08/13 14:38:33] ppydet.metrics.coco_utils INFO: Per-category of bbox AP:
+-----+-----+-----+-----+-----+
| category | AP | category | AP | category | AP |
+-----+-----+-----+-----+-----+
| aeroplane | 0.623 | car      | 0.527 | chair    | 0.558 |
| cow      | 0.626 | person   | 0.519 | traffic_light | 0.457 |
+-----+-----+-----+-----+-----+
[08/13 14:38:33] ppydet.metrics.coco_utils INFO: per-category PR curve has output to bbox_pr_curve folder.
[08/13 14:38:33] ppydet.engine INFO: Total sample number: 689, average FPS: 11.811991601876088
```

## Model Evaluation: (Test data)

```
Accumulating evaluation results...
DONE (t=0.22s).
Average Precision  (AP) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.185
Average Precision  (AP) @[ IoU=0.50      | area=   all | maxDets=100 ] = 0.363
Average Precision  (AP) @[ IoU=0.75      | area=   all | maxDets=100 ] = 0.158
Average Precision  (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.107
Average Precision  (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.254
Average Precision  (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.294
Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=  1 ] = 0.134
Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets= 10 ] = 0.337
Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.422
Average Recall     (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.269
Average Recall     (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.494
Average Recall     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.678
[08/13 14:48:14] ppydet.metrics.coco_utils INFO: Per-category of bbox AP:
+-----+-----+-----+-----+-----+-----+
| category | AP   | category | AP   | category | AP   |
+-----+-----+-----+-----+-----+-----+
| aeroplane | 0.313 | car       | 0.102 | chair     | 0.103 |
| cow       | 0.352 | person    | 0.070 | traffic_light | 0.167 |
+-----+-----+-----+-----+-----+-----+
[08/13 14:48:14] ppydet.metrics.coco_utils INFO: per-category PR curve has output to bbox_pr_c
[08/13 14:48:14] ppydet.engine INFO: Total sample number: 190, average FPS: 4.535772829972766
```

## Inference speed:

```
save result to: output/images/COCO_val2014_000000188798.jpg
class_id:5, confidence:0.8013, left_top:[530.91,136.12],right_bottom:[555.37,193.71]
class_id:5, confidence:0.7616, left_top:[478.97,343.94],right_bottom:[486.77,352.58]
class_id:5, confidence:0.5461, left_top:[579.80,347.99],right_bottom:[599.55,373.87]
save result to: output/images/COCO_val2014_000000410712.jpg
save result to: output/images/0000000511076.jpg
----- Inference Time Info -----
total_time(ms): 668398.1, img_num: 229
average latency time(ms): 2918.77, QPS: 0.342610
preprocess_time(ms): 93.60, inference_time(ms): 2825.10, postprocess_time(ms): 0.00
```