

Aero2Astro

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Model Summary:

Model - 1: PP-Yolo v1

ins = 1000

bs = 8

lr = 0.0002

epochs = 1983

model : ppyolo_r50vd_dcn_1x_coco

Training Data:

```
Accumulating evaluation results...
DONE (t=0.85s).
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.454
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.751
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.499
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.359
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.588
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.579
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.173
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.479
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.580
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.498
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.699
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.710
[08/15 07:11:53] ppdet.metrics.coco_utils INFO: Per-category of bbox AP:
+-----+-----+-----+-----+-----+
| category | AP | category | AP | category | AP |
+-----+-----+-----+-----+-----+
| bird | 0.451 | book | 0.315 | bottle | 0.601 |
| car | 0.173 | chair | 0.616 | person | 0.567 |
+-----+-----+-----+-----+-----+
[08/15 07:11:53] ppdet.metrics.coco_utils INFO: per-category PR curve has output to bbox
[08/15 07:11:53] ppdet.engine INFO: Total sample number: 1093, average FPS: 18.4354342262
```

Test Data:

```
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] ppdet.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] ppdet.metrics.coco_utils INFO: per-category PR curve has output to bbox_pr_curve folder.
[08/13 14:25:45] ppdet.engine INFO: Total sample number: 177, average FPS: 18.61171957113853
```

Model – 2 :(PP-Yolo v2)

ins = 500

bs = 8

lr = 0.0002

e[ochs = 1711

model : ppyolov2_r101vd_dcn_365e_coco

Training Data :

```
Accumulating evaluation results...
DONE (t=0.64s).
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.622
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.944
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.730
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.538
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.724
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.738
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.260
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.670
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.739
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.662
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.820
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.848
[08/17 12:37:24] ppdet.metrics.coco_utils INFO: Per-category of bbox AP:
+-----+-----+-----+-----+-----+-----+
| category | AP   | category | AP   | category | AP   |
+-----+-----+-----+-----+-----+-----+
| aeroplane | 0.704 | car      | 0.584 | chair    | 0.644 |
| cow       | 0.676 | person   | 0.601 | traffic_light | 0.522 |
+-----+-----+-----+-----+-----+-----+
[08/17 12:37:24] ppdet.metrics.coco_utils INFO: per-category PR curve has output to bbox_pr_curve
[08/17 12:37:24] ppdet.engine INFO: Total sample number: 689, average FPS: 11.880296439736922
```

Test data :

```
Accumulating evaluation results...
DONE (t=0.20s).
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.191
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.362
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.167
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.117
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.257
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.307
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.137
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.334
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.409
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.259
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.490
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.643
[08/17 12:34:19] ppdet.metrics.coco_utils INFO: Per-category of bbox AP:
+-----+-----+-----+-----+-----+-----+
| category | AP   | category | AP   | category | AP   |
+-----+-----+-----+-----+-----+-----+
| aeroplane | 0.343 | car      | 0.100 | chair    | 0.132 |
| cow       | 0.352 | person   | 0.055 | traffic_light | 0.164 |
+-----+-----+-----+-----+-----+-----+
[08/17 12:34:19] ppdet.metrics.coco_utils INFO: per-category PR curve has output to bbox_pr_curve
[08/17 12:34:19] ppdet.engine INFO: Total sample number: 190, average FPS: 5.877382970685596
```


Model - 3:(Faster Rcnnc)

Backbone = Faster_rcnn_X_101_32x8d_FPN_3x

bs = 4

lr = 0.001

ins = 500

itrations : 83500

Test :

```
[09/01 11:00:32 d2.evaluation.fast_eval_api]: COCOeval_opt.accumulate() finished in 0.05 second
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.388
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.563
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.416
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.234
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.506
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.555
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.222
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.547
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.590
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.417
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.698
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.834
[09/01 11:00:32 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 38.774 | 56.323 | 41.635 | 23.398 | 50.569 | 55.524 |
[09/01 11:00:32 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 66.686 | car | 25.895 | chair | 31.846 |
| cow | 57.283 | person | 20.700 | traffic light | 30.234 |
```

```
Total inference time: 0:02:15.337548 (0.731554 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:14 (0.728070 s / iter per device, on 1 devices)
```

Train :

```
[09/01 11:13:20 d2.evaluation.fast_eval_api]: COCOeval_opt.accumulate() finished in 0.05 second
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.641
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.845
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.709
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.548
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.737
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.822
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.309
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.714
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.755
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.665
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.827
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.915
[09/01 11:13:20 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 64.101 | 84.488 | 70.862 | 54.822 | 73.704 | 82.153 |
[09/01 11:13:20 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 88.188 | car | 55.989 | chair | 67.044 |
| cow | 73.846 | person | 51.198 | traffic_light | 48.340 |
```

```
Total inference time: 0:08:20.223715 (0.731321 s / iter per device, on 1 devices)
Total inference pure compute time: 0:08:18 (0.728191 s / iter per device, on 1 devices)
tionl: Preparing results for COCO format
```

Model – 4 (Faster Rcnnc – with augmentation)

Augmentation : Resize (1024), Horizontal Flip

iterations - 149500

Test:

```
[09/09 03:58:44 d2.evaluation.fast_eval_api]: COCOeval_opt.accumulate() finished in 0.02 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.384
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.565
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.415
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.232
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.503
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.552
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.221
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.541
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.581
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.404
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.688
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.819
[09/09 03:58:44 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 38.352 | 56.507 | 41.474 | 23.209 | 50.253 | 55.211 |
[09/09 03:58:44 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 64.450 | car | 26.561 | chair | 30.293 |
| cow | 58.988 | person | 20.008 | traffic_light | 29.813 |
```

```
Total inference time: 0:02:17.554629 (0.743539 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:16 (0.740199 s / iter per device, on 1 devices)
```

Train :

```
[09/09 04:08:01 d2.evaluation.fast_eval_api]: COCOeval_opt.accumulate() finished in 0.05 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.656
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.865
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.733
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.565
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.743
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.825
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.306
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.717
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.756
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.667
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.827
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.912
[09/09 04:08:01 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 65.610 | 86.528 | 73.318 | 56.502 | 74.312 | 82.524 |
[09/09 04:08:01 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 88.144 | car | 57.644 | chair | 67.827 |
| cow | 74.917 | person | 55.569 | traffic_light | 49.560 |
OrderedDict([('bbox',
```

```
Total inference time: 0:08:27.085180 (0.741353 s / iter per device, on 1 devices)
Total inference pure compute time: 0:08:24 (0.738200 s / iter per device, on 1 devices)
```


Model – 5:(Faster Rcnr with Augmentation)

Augmentation : Resize(1024),Hflip ,Random brightness , Random Rotation ,
Random crop

Iterations : 159500

Test:

```
[09/12 02:03:09 d2.evaluation.fast_eval_api]: COCOeval opt.accumulate() finished in 0.02 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.180
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.509
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.062
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.143
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.258
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.255
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.115
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.312
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.348
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.271
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.397
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.475
[09/12 02:03:09 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| 17.967 | 50.904 | 6.185 | 14.321 | 25.769 | 25.460 |
[09/12 02:03:09 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| aeroplane | 22.703 | car | 16.018 | chair | 14.871 |
| cow | 21.525 | person | 11.191 | traffic_light | 21.497 |
OrderedDict([('bbox',
```

```
Total inference time: 0:02:22.004286 (0.767591 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:21 (0.764274 s / iter per device, on 1 devices)
```

Train :

```
[09/12 02:11:59 d2.evaluation.fast_eval_api]: COCOeval opt.accumulate() finished in 0.07 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.282
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.785
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.064
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.278
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.332
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.347
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.146
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.372
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.408
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.377
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.438
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.470
[09/12 02:11:59 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| 28.240 | 78.504 | 6.387 | 27.821 | 33.190 | 34.669 |
[09/12 02:11:59 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| aeroplane | 24.856 | car | 28.422 | chair | 32.137 |
| cow | 32.960 | person | 20.032 | traffic_light | 31.035 |
OrderedDict([('bbox',
```

```
Inference done 600/600: Data loading: 0:00:21 s/iter; Inference: 0:00:01 s/iter; Eval: 0:00:00 s/iter
Total inference time: 0:08:42.158078 (0.763389 s / iter per device, on 1 devices)
Total inference pure compute time: 0:08:39 (0.760207 s / iter per device, on 1 devices)
[09/12 02:11:59 d2.evaluation.coco_evaluation]: Preparing results for COCO format
```

Model – 6 (Faster Rcnnc with augmentation)

Augmentation : Resize(1024) ,Random brightness , Random Rotation ,
Random crop

Iterations : 201499

Test :

```
[09/19 13:05:34 d2.evaluation.fast_eval_api]: COCOeval_opt.accumulate() finished in 0.03 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.126
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.431
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.033
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.108
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.187
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.182
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.092
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.245
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.277
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.218
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.308
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.384
[09/19 13:05:34 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| 12.629 | 43.109 | 3.275 | 10.796 | 18.709 | 18.232 |
[09/19 13:05:34 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| aeroplane | 13.065 | car | 12.960 | chair | 10.551 |
| cow | 14.728 | person | 9.049 | traffic_light | 15.424 |
OrderedDict([('bbox',
```

Train :

```
[09/19 13:14:04 d2.evaluation.fast_eval_api]: COCOeval_opt.accumulate() finished in 0.06 s
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.195
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.688
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.021
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.201
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.223
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.244
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.109
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.289
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.318
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.287
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.329
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.367
[09/19 13:14:04 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| 19.536 | 68.847 | 2.144 | 20.098 | 22.271 | 24.356 |
[09/19 13:14:04 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| aeroplane | 13.225 | car | 21.054 | chair | 22.362 |
| cow | 23.129 | person | 14.660 | traffic_light | 22.782 |
OrderedDict([('bbox',
```

Best model :

PP – Yolo v2 : ppyolov2_r101vd_dcn_365e_coco

Average Precision : 0.307

Average Recall : 0.643

FPS : 11.88

Faster RcNN :(Backbone = Faster_rcnn_X_101_32x8d_FPN_3x without any augmentation)

Average Precision : 0.555

Average Recall : 0.834

Inference Time : 0.731 s / per image

Faster Rcn gives good accuracy with compared to other models but one disadvantage is , it gives less FPS.

PP-Yolo v2 gives Moderate accuracy and FPS . So, PP-Yolo v2 is the winner of above models.