

Aero2Astro

Panneerselvam N

(07/09/2021)

I had trained Faster Rcn model upto 133000 iterations. And also evaluated with both train and test dataset.

Model:(Faster Rcn)

Backbone = Faster_rcnn_X_101_32x8d_FPN_3x

bs = 4

lr = 0.001

ins = 500

Previous checkpoints : 120000 itr

Threshold : 0.65

Test :

```
[09/07 00:59:34 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 ] = 0.385
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.572
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.410
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.235
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.502
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.585
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.225
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.542
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.586
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.422
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 ] = 0.822
[09/07 00:59:34 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 38.474 | 57.228 | 41.044 | 23.479 | 50.171 | 58.548 |
[09/07 00:59:34 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 65.017 | car | 26.816 | chair | 30.921 |
| cow | 58.209 | person | 20.015 | traffic light | 29.863 |
```

```
Inference done 185/190. Dataloading: 0.0024 s/iter. Inference: 0.7946 s/iter. Eval: 0.0003
Total inference time: 0:02:27.706251 (0.798412 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:27 (0.794987 s / iter per device, on 1 devices)
Final: Preparing results for COCO format
```

train :

```
[09/07 01:10:43 d2.evaluation.fast_eval_api]: COCOeval opt.accumulate() finished in 0.04 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.649
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.858
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.725
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.561
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.739
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.816
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 ] = 0.715
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 ] = 0.669
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.824
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.909
[09/07 01:10:43 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 64.948 | 85.845 | 72.526 | 56.066 | 73.929 | 81.588 |
[09/07 01:10:43 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 87.622 | car | 56.786 | chair | 67.822 |
| cow | 73.893 | person | 54.311 | traffic_light | 49.256 |
OrderedDict([('bbox',
```



```

Inference done 687/687. Data loading: 0.0025 s/iter. Inference: 0.0025 s/iter. Eval: 0.000
Total inference time: 0:09:01.895398 (0.792245 s / iter per device, on 1 devices)
Total inference pure compute time: 0:08:59 (0.789189 s / iter per device, on 1 devices)

```

Threshold : 0.85

Test :

```

Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.385
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.572
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.410
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.235
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.502
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.585
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.225
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.542
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.586
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.422
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 ] = 0.822
[09/07 01:13:58 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 38.474 | 57.228 | 41.044 | 23.479 | 50.171 | 58.548 |
[09/07 01:13:58 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 65.017 | car | 26.816 | chair | 30.921 |
| cow | 58.209 | person | 20.015 | traffic_light | 29.863 |
OrderedDict([('bbox'

```

```

Inference done 189/190. Data loading: 0.0025 s/iter. Inference: 0.0025 s/iter. Eval: 0.000
Total inference time: 0:02:27.606294 (0.797872 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:26 (0.794421 s / iter per device, on 1 devices)

```

Train :

```

09/07 01:23:56 d2.evaluation.fast_eval_api]: COCOeval opt.accumulate() finished in 0.0
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.649
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.858
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.725
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.561
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.739
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.816
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 ] = 0.715
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 ] = 0.669
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.824
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.909
09/07 01:23:56 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 64.948 | 85.845 | 72.526 | 56.066 | 73.929 | 81.588 |
09/07 01:23:56 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 87.622 | car | 56.786 | chair | 67.822 |
| cow | 73.893 | person | 54.311 | traffic_light | 49.256 |

```

```

Total inference time: 0:09:02.484650 (0.793106 s / iter per device, on 1 devices)
Total inference pure compute time: 0:09:00 (0.789906 s / iter per device, on 1 devices)

```

Last checkpoints : 133000 iterations

Threshold : 0.85

Test :

```
[09/07 15:31:29 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 ] = 0.383
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.572
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.413
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.231
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.507
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.549
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.220
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.539
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 ] = 0.404
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.690
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.818
[09/07 15:31:29 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 38.342 | 57.207 | 41.317 | 23.096 | 50.697 | 54.941 |
[09/07 15:31:29 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 63.835 | car | 27.038 | chair | 30.515 |
| cow | 58.656 | person | 19.817 | traffic_light | 30.193 |
OrderedDict([('bbox',
```

```
Total inference time: 0:02:24.123274 (0.779045 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:23 (0.775464 s / iter per device, on 1 devices)
```

Train :

```
[09/07 15:40:59 d2.evaluation.fast_eval_api]: COCOeval opt.accumulate() finished in 0.04 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.654
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.863
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.732
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.564
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 ] = 0.821
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.305
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.715
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 ] = 0.668
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 ] = 0.908
[09/07 15:40:59 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|-----|-----|-----|-----|-----|-----|
| 65.352 | 86.342 | 73.188 | 56.374 | 74.272 | 82.082 |
[09/07 15:40:59 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|-----|-----|-----|-----|-----|-----|
| aeroplane | 87.729 | car | 57.480 | chair | 67.568 |
| cow | 74.394 | person | 55.177 | traffic_light | 49.763 |
OrderedDict([('bbox',
```

```
Total inference time: 0:08:48.286809 (0.772349 s / iter per device, on 1 devices)
Total inference pure compute time: 0:08:46 (0.769015 s / iter per device, on 1 devices)
```


Threshold : 0.65

Test :

```
[09/07 15:44:05 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 ] = 0.383
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.572
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.413
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.231
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.507
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.549
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.220
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.539
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 ] = 0.404
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.690
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.818
[09/07 15:44:05 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| 38.342 | 57.207 | 41.317 | 23.096 | 50.697 | 54.941 |
[09/07 15:44:05 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| aeroplane | 63.835 | car | 27.038 | chair | 30.515 |
| cow | 58.656 | person | 19.817 | traffic_light | 30.193 |
```

```
Total inference time: 0:02:23.774966 (0.777162 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:23 (0.773549 s / iter per device, on 1 devices)
```

Train :

```
[09/07 15:54:45 d2.evaluation.fast_eval_api]: COCOeval opt.accumulate() finished in 0.04 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.654
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.863
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.732
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.564
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 ] = 0.821
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.305
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.715
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 ] = 0.668
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 ] = 0.908
[09/07 15:54:45 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
| AP | AP50 | AP75 | APs | APm | APl |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| 65.352 | 86.342 | 73.188 | 56.374 | 74.272 | 82.082 |
[09/07 15:54:45 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category | AP | category | AP | category | AP |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| aeroplane | 87.729 | car | 57.480 | chair | 67.568 |
| cow | 74.394 | person | 55.177 | traffic_light | 49.763 |
```