Aero2Astro Panneerselvam N (27/08/2021)

I had trained Faster Rcnn model upto 46000 iterations. And also evaluated with both train and test dataset.

Model:(Faster Rcnn)

```
Backbone = Faster_rcnn_X_101_32x8d_FPN_3x
bs = 4
lr = 0.001
ins = 500
```

Previous Checkpoint: 36500 its

Threshold: 0.65

Test:

```
08/25 15:11:05 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 ] = 0.392
Average Precision (AP) @[ IoU=0.50
                                              | area=
                                                         all
                                                             | maxDets=100 ]
                                                                               = 0.569
                                                             | maxDets=100 ] = 0.426
Average Precision (AP) @[ IoU=0.75
                                               area=
                                                        all
Average Precision (AP) @[ IoU=0.50:0.95
Average Precision (AP) @[ IoU=0.50:0.95
                                              area= small
                                                             | maxDets=100
                                                                               = 0.246
                                                                               = 0.511
                                              area=medium | maxDets=100 ]
                                                        arge | maxDets=100
all | maxDets= 1
all | maxDets= 10
Average Precision (AP) @[ IoU=0.50:0.95
                                              area= large
                                                                              = 0.593
Average Recall
                     (AR) @[ IoU=0.50:0.95
                                                                              = 0.224
                                              area=
Average Recall
                     (AR) @[ IoU=0.50:0.95
                                                                               = 0.554
                                              area=
Average Recall
                     (AR) @[ IoU=0.50:0.95
                                                        all | maxDets=100 ]
                                                                              = 0.600
                                              area=
Average Recall
                     (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100
                                                                             ] = 0.438
Average Recall
                    (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100
                                                                             1 = 0.701
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0. 
08/25 15:11:05 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
                     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847
AP | AP50 | AP75 | APs | APm | APl
:----:|:----:|:----:
 39.228 | 56.910 | 42.639 | 24.581 | 51.138 |
                                                  59.315
08/25 15:11:05 d2.evaluation.coco evaluation]: Per-category bbox AP:
                                       AP
 category
                       category
                                                  category
 aeroplane
                                        26.778
                         car
                                                  chair
                                                                    32,140
               57.641
                         person
                                        22.527
                                                  traffic light
                                                                    29.573
```

```
finished in 0.04 seconds.
                                               oi]: COCOeval opt.accumulate()
Average Precision
                      (AP) @[ IoU=0.50:0.95
                                                 area=
                                                          all
                                                                 maxDets=100
                                                                                  = 0.604
Average Precision
                               IoU=0.50
                                                                                  = 0.814
                                                 area=
                                                          all
                                                                 maxDets=100
Average Precision
                              IoU=0.75
IoU=0.50:0.95
                                                 area=
                                                          all
                                                                 maxDets=100
                                                                                  = 0.667
Average Precision
                                                                                  = 0.506
                                                 area= small
                                                                 maxDets=100
                      (AP) @[
(AP) @[
Average Precision
                              IoU=0.50:0.95
IoU=0.50:0.95
                                                                 maxDets=100
                                                 area=medium
                                                                                  = 0.702
Average Precision
                                                                 maxDets=100
                                                 area= large
                                                                                    0.783
Average Recall
                               IoU=0.50:0.95
IoU=0.50:0.95
                                                                 maxDets= 1
maxDets= 10
                      (AR)
                                                 area=
                                                          all
                                                                                    0.300
                      (AR)
Average Recall
                                                 area=
                                                          all
                                                                                    0.691
Average Recall
                                                                 maxDets=100
                      (AR)
                           @[
                               IoU=0.50:0.95
                                                 area=
                                                          all
                                                                                  = 0.734
                               IoU=0.50:0.95
                                                 area= small
Average Recall
                      (AR) @[
                                                                 maxDets=100
                                                                                 = 0.640
                      (AR) @[ IoU=0.50:0.95
(AR) @[ IoU=0.50:0.95
Average Recall
                                                 area=medium
                                                               | maxDets=100
| maxDets=100
                                                                                 = 0.809
                                               area= large
Average Recall
08/25 15:15:10 d2.evaluation.coco_evaluation]: Evaluation results for bbox:

AP | AP50 | AP75 | APs | APm | AP1 |
                                                                                    0.893
 60.351 | 81.365 | 66.654 | 50.648 | 70.243 |
                                                    78.320
08/25 15:15:10 d2.evaluation.coco_evaluation]: Per-category bbox AP:
              | AP
                                       | AP
 category
                                                                     I AP
                          category
                                                   category
               85.878
                                         51.500
 aeroplane
                                                   chair
                         car
                71.936
                          person
                                         45.568
                                                   traffic light
                                                                      44.495
```

Threshold: 0.85

Test:

```
_api]: COCOeval_opt.accumulate() finished in 0.02 seconds.
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.392
Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.569
 Average Precision (AP) @[ IoU=0.75
                                                                                                                                                          area= all | maxDets=100 | = 0.426
 Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.426
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.246
Average Precision (AP) @[ IoU=0.50:0.95 |
Average Precision (AP) @[ IoU=0.50:0.95 |
Average Recall (AR) @[ IoU=0.50:0.95 |
Average Recall (AR) @[ IoU=0.50:0.95 |
Average Recall (AR) @[ IoU=0.50:0.95 |
                                                                                                                                                           area=medium | maxDets=100 ] = 0.511
                                                                                                                                                           area= large | maxDets=100 ] = 0.593
                                                                                                                                                           area= all | maxDets= 1 ] = 0.224
area= all | maxDets= 10 ] = 0.554
                                                          (AR) @[ IoU=0.50:0.95 | area= (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.701 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.456 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.466 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.466 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.466 (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.847 (AR) @[ IoU=0.50:0.95 | area= large | area
 Average Recall
 Average Recall
 Average Recall
[08/25 15:16:40 d2.evaluation.coco evaluation]: Evaluation results for bbox:
    AP | AP50 | AP75 | APs | APm | APl
39.228 | 56.910 | 42.639 | 24.581 | 51.138 | 59.315 | 08/25 | 15:16:40 d2.evaluation.coco_evaluation]: Per-category bbox AP:
                                            | AP
                                                                                                                           | AP
                                                                            category
                                                                                                                                                                                                                       I AP
   category
                                                                                                                                                            category
                                                 66.712 | car
                                                                                                                            26.778
    aeroplane
                                                                                                                                                                chair
                                                                                                                                                                                                                          32.140
                                                   57.641 | person
                                                                                                                           | 22.527 |
                                                                                                                                                                  traffic light | 29.573
    COW
```

```
[08/25 15:20:49 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 ] = 0.604
Average Precision (AP) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.604 Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.814 Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.667 Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.506 Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.702 Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.783 Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.300 Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 10 ] = 0.691 Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.734 Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.640 Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.809 Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.893 [08/25 15:20:49 d2.evaluation.coco evaluation]: Evaluation results for bbox:
[08/25 15:20:49 d2.evaluation.coco evaluation]: Evaluation results for bbox:
       AP | AP50 | AP75 | APs | APm | APl
 :----:|:----:|:----:|:----:|:----:|:----:|
60.351 | 81.365 | 66.654 | 50.648 | 70.243 | 78.320
[08/25 15:20:49 d2.evaluation.coco evaluation]: Per-category bbox AP:
                                         | category | AP | category
   category AP
                             85.878 | car
                                                                                | 51.500 | chair
   aeroplane
                                                                                                                                             62.730
                                                                                | 45.568 | traffic light | 44.495
                              | 71.936 | person
   COW
```

Last checkpoint: 46000 itrs.

Threshold: 0.85

Test:

```
[08/27 14:54:37 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 ] = 0.394
Average Precision (AP) @[ IoU=0.50 | area= all | Average Precision (AP) @[ IoU=0.75 | area= all | Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
                                                                                                                      maxDets=100 ] = 0.568
                                                                                                                       maxDets=100 ] = 0.428
                                                                                                                      maxDets=100 l = 0.246
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.246
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.511
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.590
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.226
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.557
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=100 ] = 0.602
Average Recall (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.440
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.703
Average Recall (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.850
[08/27 14:54:37 d2.evaluation.coco evaluation]: Evaluation results for bbox:
AP | AP50 | AP75 | APs | APm | APl
:----:|:----:|:----:|:----:|:----:|:----:|:----:|:
39.399 | 56.794 | 42.810 | 24.648 | 51.133 | 59.015
[08/27 14:54:37 d2.evaluation.coco evaluation]: Per-category bbox AP:
                                                                        | AP
  category | AP | category
                                                                                             category
                                                                                                                              AP
                             66.907
                                                                           27.094
  aeroplane
                                                                                              chair
                                                                                                                                32.051
                             57.985
                                                person
                                                                           22.072
                                                                                               traffic light
                                                                                                                               30.283
  COW
```

```
[08/27 15:05:29 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 ] = 0.613
                                             area=
Average Precision (AP) @[ IoU=0.50
                                                        all | maxDets=100 ] = 0.820
Average Precision (AP) @[ IoU=0.75 | area= all | maxDets=100 ] = 0.678
Average Precision (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.515
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.711
Average Precision (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.794
                     (AR) @[ IoU=0.50:0.95 | area= all | maxDets= 1 ] = 0.302
Average Recall
Average Recall
                     (AR) @[ IoU=0.50:0.95 | area=
                                                       all | maxDets= 10 ] = 0.696
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 ] = 0.646
Average Recall
                     (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.811
Average Recall
                     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.898
[08/27 15:05:29 d2.evaluation.coco evaluation]: Evaluation results for bbox:
 AP | AP50 | AP75 | APS | APM | APl
 61.289 | 82.036 | 67.792 | 51.464 | 71.061 | 79.403
[08/27 15:05:29 d2.evaluation.coco evaluation]: Per-category bbox AP:
 category
                  category
                                               category
               86.584 | car
 aeroplane
                                       52.557
                                                 chair
                                                                  63.802
                       person
               72.699
                                       46.718
                                                 traffic light
                                                                  45.374
 COW
```

Threshold: 0.65

Test:

```
pij: cocoevat_opt.accumutate() finished in 0.02 seco
Average Precision (AP) @[ IoU=0.50:0.95 | area=
                                                     all | maxDets=100 | = 0.394
Average Precision (AP) @[ IoU=0.50
                                                            maxDets=100 ] = 0.568
                                             area=
Average Precision (AP) @[ IoU=0.75
                                             area= all |
                                                            maxDets=100 ] = 0.428
Average Precision (AP) @[ IoU=0.50:0.95
                                            | area= small | maxDets=100 ] = 0.246
                                             area=medium | maxDets=100 ] = 0.511
Average Precision (AP) @[ IoU=0.50:0.95
                                             area= large | maxDets=100 ] = 0.590
area= all | maxDets= 1 ] = 0.226
area= all | maxDets= 10 ] = 0.557
Average Precision (AP) @[ IoU=0.50:0.95
Average Recall (AR) @[ IoU=0.50:0.95
Average Recall
                    (AR) @[ IoU=0.50:0.95
                  (AR) @[ IoU=0.50:0.95
(AR) @[ IoU=0.50:0.95
                                                      all | maxDets=100
Average Recall
                                                                         ] = 0.602
                                             area=
Average Recall
                                             area= small | maxDets=100 ] = 0.440
Average Recall
                    (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.703
                    (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.850
Average Recall
[08/27 15:09:14 d2.evaluation.coco evaluation]: Evaluation results for bbox:
 AP | AP50 | AP75 | APs | APm
                                              APl
 39.399 | 56.794 | 42.810 | 24.648 | 51.133 | 59.015
08/27 15:09:14 d2.evaluation.coco evaluation]: Per-category bbox AP:
 category
             I AP
                      category
                                    I AP
                                               category
                                                                AP
                                     27.094
 aeroplane
               66.907
                                                                32.051
                        car
                                               chair
                                                                30.283
               57.985
                                      22.072
                                                traffic light
 COW
                        person
```

```
[08/27 15:19:00 d2.evaluation.fast eval api]: Accumulating evaluation results...
[08/27 15:19:00 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 ] = 0.613

Average Precision (AP) @[ IoU=0.50 | area= all | maxDets=100 ] = 0.820
                    (AP) @[ IoU=0.75
                                                                          ] = 0.678
Average Precision
                                              area=
                                                      all
                                                             maxDets=100
Average Precision
                    (AP) @[ IoU=0.50:0.95
                                                             maxDets=100
                                                                          ] = 0.515
                                              area= small
                     (AP) @[
                             IoU=0.50:0.95
Average Precision
                                              area=medium
                                                             maxDets=100
                                                                          ] = 0.711
Average Precision
                                              area= large
                    (AP) @[ IoU=0.50:0.95
                                                             maxDets=100
                                                                          1 = 0.794
Average Recall
                     (AR) @[ IoU=0.50:0.95
                                              area= all
                                                             maxDets= 1
                                                                          ] = 0.302
Average Recall
                                                                          ] = 0.696
                     (AR) @[ IoU=0.50:0.95
                                              area=
                                                      all
                                                            maxDets= 10
                     (AR) @[ IoU=0.50:0.95
                                                             maxDets=100
                                                                          1 = 0.739
Average Recall
                                              area=
                    (AR) @[ IoU=0.50:0.95 |
                                              area= small
Average Recall
                                                           | maxDets=100
                                                                          ] = 0.646
                    (AR) @[ IoU=0.50:0.95
Average Recall
                                              area=medium | maxDets=100
                                                                          ] = 0.811
Average Recall
                    (AR) @[ IoU=0.50:0.95 |
                                              area= large | maxDets=100 ] = 0.898
[08/27 15:19:00 d2.evaluation.coco evaluation]: Evaluation results for bbox:
         | AP50 | AP75 | APs | APm
                                                 APl
[08/27 15:19:00 d2.evaluation.coco evaluation]: Per-category bbox AP:
               AP | category
                                     I AP
 category
                                                category
 aeroplane
               86.584
                                       52.557
                                                                  63.802
                        car
                                                chair
               72.699 | person
                                       46.718
                                                traffic light | 45.374
  COW
```