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(15/09/2021)

Today i had trained faster rcnn model upto 189000 iterations with more augmemtation. And also evaluated with both training and test data set.

Previous Checkpoint: 138000
Test :
Augmentation : Resize(1024), HFlip

```
[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)
```

Previous Checkpoints : 159500 itr
Augmentation : Resize(1024),Hflip ,Random brightness , Random Rotation , Random crop

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',
```

```
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)
tion]: Preparing results for COCO format
```

Previous Checkpoints : 169500 itr

Test :

```
 Average Precision  (AP) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.167
 Average Precision  (AP) @[ IoU=0.50       | area=   all | maxDets=100 ] = 0.500
 Average Precision  (AP) @[ IoU=0.75       | area=   all | maxDets=100 ] = 0.055
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.129
 Average Precision  (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.240
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.236
 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 ] = 0.290
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.326
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.251
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.374
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.428
[09/14 02:53:59 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
|   AP   |  AP50  |  AP75  |  APs   |  APm   |  APl   |
|:------:|:------:|:------:|:------:|:------:|:------:|
| 16.709 | 49.991 | 5.477  | 12.857 | 23.986 | 23.576 |
[09/14 02:53:59 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category   | AP     | category   | AP     | category      | AP     |
|:-----------|:-------|:-----------|:-------|:--------------|:-------|
| aeroplane  | 20.112 | car        | 15.217 | chair         | 13.859 |
| cow        | 20.728 | person     | 10.448 | traffic_light | 19.888 |
OrderedDict([('bbox',
```

```
Inference done 180/190. Dataloading: 0.0025 s/iter. Inference: 0.7481 s/iter. Eval: 0.0003
Inference done 187/190. Dataloading: 0.0024 s/iter. Inference: 0.7473 s/iter. Eval: 0.0003
Total inference time: 0:02:18.911336 (0.750872 s / iter per device, on 1 devices)
Total inference pure compute time: 0:02:18 (0.747379 s / iter per device, on 1 devices)
tion]: Preparing results for COCO format
```

Train :

```
[09/14 03:03:23 d2.evaluation.fast_eval_api]: COCOeval_opt.accumulate() finished in 0.08 seconds.
 Average Precision  (AP) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.260
 Average Precision  (AP) @[ IoU=0.50       | area=   all | maxDets=100 ] = 0.768
 Average Precision  (AP) @[ IoU=0.75       | area=   all | maxDets=100 ] = 0.053
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.253
 Average Precision  (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.303
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.331
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=  1 ] = 0.135
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets= 10 ] = 0.351
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.386
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.348
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.415
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.453
[09/14 03:03:23 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
|   AP   |  AP50  |  AP75  |  APs   |  APm   |  APl   |
|:------:|:------:|:------:|:------:|:------:|:------:|
| 25.977 | 76.821 | 5.261  | 25.308 | 30.270 | 33.084 |
[09/14 03:03:23 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category   | AP     | category   | AP     | category      | AP     |
|:-----------|:-------|:-----------|:-------|:--------------|:-------|
| aeroplane  | 20.833 | car        | 26.889 | chair         | 30.052 |
| cow        | 30.904 | person     | 18.081 | traffic_light | 29.104 |
OrderedDict([('bbox',
```

```
Inference done 685/689. Dataloading: 0.0025 s/iter. Inference: 0.7452 s/iter. Eval: 0.0003 s/
Total inference time: 0:08:31.961533 (0.748482 s / iter per device, on 1 devices)
Total inference pure compute time: 0:08:29 (0.745104 s / iter per device, on 1 devices)
tion]: Preparing results for COCO format
```

Current Checkpoint : 189000 itr

Test :

```
[09/15 15:28:57 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 ] = 0.146
 Average Precision  (AP) @[ IoU=0.50      | area=   all | maxDets=100 ] = 0.469
 Average Precision  (AP) @[ IoU=0.75      | area=   all | maxDets=100 ] = 0.044
 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 ] = 0.211
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.195
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=  1 ] = 0.099
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets= 10 ] = 0.264
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.297
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.236
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.335
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.401
[09/15 15:28:57 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
|   AP   |  AP50  |  AP75  |  APs   |  APm   |  APl   |
|:------:|:------:|:------:|:------:|:------:|:------:|
| 14.576 | 46.879 | 4.448  | 11.671 | 21.131 | 19.482 |
[09/15 15:28:57 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category   | AP     | category   | AP     | category      | AP     |
|:-----------|:-------|:-----------|:-------|:--------------|:-------|
| aeroplane  | 15.734 | car        | 13.776 | chair         | 12.803 |
| cow        | 17.307 | person     | 9.465  | traffic_light | 18.373 |
OrderedDict([('bbox',
```

Train :

```
[09/15 15:38:27 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 ] = 0.226
 Average Precision  (AP) @[ IoU=0.50      | area=   all | maxDets=100 ] = 0.712
 Average Precision  (AP) @[ IoU=0.75      | area=   all | maxDets=100 ] = 0.033
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.222
 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 ] = 0.291
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=  1 ] = 0.123
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets= 10 ] = 0.318
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.349
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.312
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.368
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.418
[09/15 15:38:27 d2.evaluation.coco_evaluation]: Evaluation results for bbox:
|   AP   |  AP50  |  AP75  |  APs   |  APm   |  APl   |
|:------:|:------:|:------:|:------:|:------:|:------:|
| 22.633 | 71.220 | 3.317  | 22.239 | 25.789 | 29.114 |
[09/15 15:38:27 d2.evaluation.coco_evaluation]: Per-category bbox AP:
| category   | AP     | category   | AP     | category      | AP     |
|:-----------|:-------|:-----------|:-------|:--------------|:-------|
| aeroplane  | 15.861 | car        | 24.004 | chair         | 27.587 |
| cow        | 26.799 | person     | 16.404 | traffic_light | 25.144 |
OrderedDict([('bbox',
```