Work report
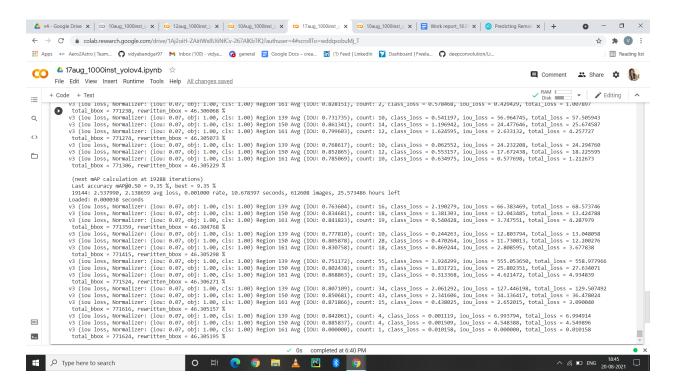
yolov4 for 1000 instances.
Epochs 19144

Map
1.train

```
calculation mAP (mean average precision)...
Detection layer: 139 - type = 28
Detection layer: 150 - type = 28
Detection layer: 161 - type = 28
1192
detections_count = 22300, unique_truth_count = 9852
class_id = 0, name = bird, ap = 79.13%        (TP = 326, FP = 103)
class_id = 1, name = book, ap = 70.36%        (TP = 712, FP = 284)
class_id = 2, name = bottle, ap = 92.46%      (TP = 919, FP = 117)
class_id = 3, name = car, ap = 86.96%         (TP = 4646, FP = 694)
class_id = 4, name = person, ap = 97.15%      (TP = 961, FP = 58)
class_id = 5, name = chair, ap = 95.14%       (TP = 938, FP = 73)

 for conf_thresh = 0.25, precision = 0.86, recall = 0.86, F1-score = 0.86
 for conf_thresh = 0.25, TP = 8502, FP = 1329, FN = 1350, average IoU = 71.00 %

 IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.50) = 0.868669, or 86.87 %
Total Detection Time: 691 Seconds
```

2. Test

```
 calculation mAP (mean average precision)...
 Detection layer: 139 - type = 28
 Detection layer: 150 - type = 28
 Detection layer: 161 - type = 28
180
 detections_count = 2914, unique_truth_count = 1995
class_id = 0, name = bird, ap = 16.91%          (TP = 40, FP = 27)
class_id = 1, name = book, ap = 0.18%           (TP = 3, FP = 75)
class_id = 2, name = bottle, ap = 15.75%        (TP = 49, FP = 60)
class_id = 3, name = car, ap = 6.15%      (TP = 151, FP = 315)
class_id = 4, name = chair, ap = 9.74%          (TP = 26, FP = 61)
class_id = 5, name = person, ap = 7.07%         (TP = 19, FP = 63)

 for conf_thresh = 0.25, precision = 0.32, recall = 0.14, F1-score = 0.20
 for conf_thresh = 0.25, TP = 288, FP = 601, FN = 1707, average IoU = 25.34 %

 IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.50) = 0.092996, or 9.30 %
Total Detection Time: 104 Seconds
```

MAP(19.08.2021)

1. train :

```
 calculation mAP (mean average precision)...
 Detection layer: 139 - type = 28
 Detection layer: 150 - type = 28
 Detection layer: 161 - type = 28
1192
 detections_count = 37022, unique_truth_count = 9852
class_id = 0, name = bird, ap = 72.63%          (TP = 334, FP = 368)
class_id = 1, name = book, ap = 68.23%          (TP = 719, FP = 457)
class_id = 2, name = bottle, ap = 91.58%        (TP = 913, FP = 233)
class_id = 3, name = car, ap = 85.28%           (TP = 4643, FP = 1518)
class_id = 4, name = person, ap = 94.63%        (TP = 943, FP = 162)
class_id = 5, name = chair, ap = 94.71%         (TP = 945, FP = 166)

 for conf_thresh = 0.25, precision = 0.75, recall = 0.86, F1-score = 0.80
 for conf_thresh = 0.25, TP = 8497, FP = 2904, FN = 1355, average IoU = 59.87 %

 IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.50) = 0.845090, or 84.51 %
Total Detection Time: 418 Seconds
```

2. test

```
calculation mAP (mean average precision)...
Detection layer: 139 - type = 28
Detection layer: 150 - type = 28
Detection layer: 161 - type = 28
180
detections_count = 5069, unique_truth_count = 1995
class_id = 0, name = bird, ap = 10.72%          (TP = 35, FP = 45)
class_id = 1, name = book, ap = 0.32%           (TP = 3, FP = 102)
class_id = 2, name = bottle, ap = 13.38%        (TP = 45, FP = 75)
class_id = 3, name = car, ap = 5.34%      (TP = 149, FP = 461)
class_id = 4, name = chair, ap = 11.71%         (TP = 30, FP = 68)
class_id = 5, name = person, ap = 5.07%         (TP = 15, FP = 89)

for conf_thresh = 0.25, precision = 0.25, recall = 0.14, F1-score = 0.18
for conf_thresh = 0.25, TP = 277, FP = 840, FN = 1718, average IoU = 19.25 %

IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
mean average precision (mAP@0.50) = 0.077600, or 7.76 %
Total Detection Time: 70 Seconds
```

Pp-yolo for 1000 instances

```
DONE (t=0.973)
creating index...
index created!
Running per image evaluation...
Evaluate annotation type *bbox*
DONE (t=7.72s).
Accumulating evaluation results...
DONE (t=1.40s).
 Average Precision  (AP) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.039
 Average Precision  (AP) @[ IoU=0.50      | area=   all | maxDets=100 ] = 0.111
 Average Precision  (AP) @[ IoU=0.75      | area=   all | maxDets=100 ] = 0.017
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.037
 Average Precision  (AP) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.051
 Average Precision  (AP) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.031
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=  1 ] = 0.047
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets= 10 ] = 0.147
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=100 ] = 0.210
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= small | maxDets=100 ] = 0.160
 Average Recall     (AR) @[ IoU=0.50:0.95 | area=medium | maxDets=100 ] = 0.260
 Average Recall     (AR) @[ IoU=0.50:0.95 | area= large | maxDets=100 ] = 0.243
[08/14 05:42:22] ppdet.metrics.coco_utils INFO: Per-category of bbox AP:
+----------+-------+----------+-------+----------+-------+
| category | AP    | category | AP    | category | AP    |
+----------+-------+----------+-------+----------+-------+
| bird     | 0.011 | book     | 0.015 | bottle   | 0.124 |
| car      | 0.002 | chair    | 0.016 | person   | 0.064 |
+----------+-------+----------+-------+----------+-------+
[08/14 05:42:22] ppdet.metrics.coco_utils INFO: per-category PR curve has output to bbox_pr_curve folder.
[08/14 05:42:23] ppdet.engine INFO: Total sample number: 1093, averge FPS: 13.546782759184328
```