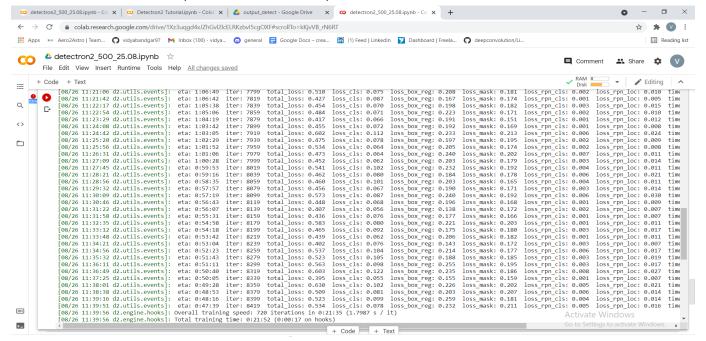# Work report

26 Aug 2021

Detectron2 for 500 instances
Deformable convolution (3x and 42.7 box AP)

yolov4 for 1000 instances.
Epochs 32303
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 = 17173, unique_truth_count = 9852
class_id = 0, name = bird, ap = 85.69%          (TP = 359, FP = 106)
class_id = 1, name = book, ap = 78.50%          (TP = 788, FP = 199)
class_id = 2, name = bottle, ap = 95.00%        (TP = 946, FP = 80)
class_id = 3, name = car, ap = 90.15%           (TP = 4847, FP = 512)
class_id = 4, name = person, ap = 98.29%        (TP = 976, FP = 40)
class_id = 5, name = chair, ap = 96.68%         (TP = 960, FP = 50)

 for conf_thresh = 0.25, precision = 0.90, recall = 0.90, F1-score = 0.90
 for conf_thresh = 0.25, TP = 8876, FP = 987, FN = 976, average IoU = 77.70 %

 IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.50) = 0.907192, or 90.72 %
Total Detection Time: 683 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 = 2164, unique_truth_count = 1995
class_id = 0, name = bird, ap = 12.87%            (TP = 31, FP = 25)
class_id = 1, name = book, ap = 0.09%             (TP = 1, FP = 72)
class_id = 2, name = bottle, ap = 12.56%          (TP = 39, FP = 50)
class_id = 3, name = car, ap = 4.83%       (TP = 126, FP = 294)
class_id = 4, name = chair, ap = 11.40%           (TP = 27, FP = 59)
class_id = 5, name = person, ap = 4.13%           (TP = 12, FP = 63)

 for conf_thresh = 0.25, precision = 0.30, recall = 0.12, F1-score = 0.17
 for conf_thresh = 0.25, TP = 236, FP = 563, FN = 1759, average IoU = 24.12 %

 IoU threshold = 50 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.50) = 0.076448, or 7.64 %
Total Detection Time: 103 Seconds
```

Pp-yolo for 1000 instances

```
DONE (t=0.97s)
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
```