Aero2Astro
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Today i had trained Yolo v4 model upto 19000 epochs with jitter = 0.45. And also evaluated with both training and test dataset.
Threshold_iou = 0.2
Train :

```
 calculation mAP (mean average precision)...
 Detection layer: 139 - type = 28
 Detection layer: 150 - type = 28
 Detection layer: 161 - type = 28
396
 detections_count = 1411, unique_truth_count = 663
class_id = 0, name = tower_lattice, ap = 99.95%          (TP = 274, FP = 9)
class_id = 1, name = tower_tucohy, ap = 98.51%          (TP = 166, FP = 12)
class_id = 2, name = tower_wooden, ap = 99.21%          (TP = 216, FP = 8)

 for conf_thresh = 0.25, precision = 0.96, recall = 0.99, F1-score = 0.97
 for conf_thresh = 0.25, TP = 656, FP = 29, FN = 7, average IoU = 81.37 %

 IoU threshold = 20 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.20) = 0.992250, or 99.23 %
Total Detection Time: 52 Seconds
```

Test :

```
     calculation mAP (mean average precision)...
     Detection layer: 139 - type = 28
     Detection layer: 150 - type = 28
     Detection layer: 161 - type = 28
    124
     detections_count = 537, unique_truth_count = 202
     class_id = 0, name = tower_lattice, ap = 89.00%          (TP = 75, FP = 12)
     class_id = 1, name = tower_tucohy, ap = 78.91%          (TP = 35, FP = 10)
     class_id = 2, name = tower_wooden, ap = 61.06%          (TP = 40, FP = 9)

     for conf_thresh = 0.25, precision = 0.83, recall = 0.74, F1-score = 0.78
     for conf_thresh = 0.25, TP = 150, FP = 31, FN = 52, average IoU = 63.60 %

     IoU threshold = 20 %, used Area-Under-Curve for each unique Recall
     mean average precision (mAP@0.20) = 0.763217, or 76.32 %
    Total Detection Time: 16 Seconds
```

Val:

```
 calculation mAP (mean average precision)...
 Detection layer: 139 - type = 28
 Detection layer: 150 - type = 28
 Detection layer: 161 - type = 28
56
 detections_count = 260, unique_truth_count = 103
class_id = 0, name = tower_lattice, ap = 84.16%          (TP = 33, FP = 7)
class_id = 1, name = tower_tucohy, ap = 79.28%          (TP = 12, FP = 10)
class_id = 2, name = tower_wooden, ap = 64.66%          (TP = 27, FP = 4)

 for conf_thresh = 0.25, precision = 0.77, recall = 0.70, F1-score = 0.73
 for conf_thresh = 0.25, TP = 72, FP = 21, FN = 31, average IoU = 60.58 %

 IoU threshold = 20 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.20) = 0.760360, or 76.04 %
Total Detection Time: 7 Seconds
```

Threshold_Iou = 0.6
Train:

```
  calculation mAP (mean average precision)...
 Detection layer: 139 - type = 28
 Detection layer: 150 - type = 28
 Detection layer: 161 - type = 28
396
 detections_count = 1411, unique_truth_count = 663
class_id = 0, name = tower_lattice, ap = 99.22%        (TP = 273, FP = 10)
class_id = 1, name = tower_tucohy, ap = 96.55%         (TP = 163, FP = 15)
class_id = 2, name = tower_wooden, ap = 97.71%         (TP = 211, FP = 13)

 for conf_thresh = 0.25, precision = 0.94, recall = 0.98, F1-score = 0.96
 for conf_thresh = 0.25, TP = 647, FP = 38, FN = 16, average IoU = 80.84 %

 IoU threshold = 60 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.60) = 0.978295, or 97.83 %
Total Detection Time: 52 Seconds
```

Test

```
 calculation mAP (mean average precision)...
 Detection layer: 139 - type = 28
 Detection layer: 150 - type = 28
 Detection layer: 161 - type = 28
124
 detections_count = 537, unique_truth_count = 202
class_id = 0, name = tower_lattice, ap = 74.05%        (TP = 66, FP = 21)
class_id = 1, name = tower_tucohy, ap = 72.91%         (TP = 33, FP = 12)
class_id = 2, name = tower_wooden, ap = 39.16%         (TP = 30, FP = 19)

 for conf_thresh = 0.25, precision = 0.71, recall = 0.64, F1-score = 0.67
 for conf_thresh = 0.25, TP = 129, FP = 52, FN = 73, average IoU = 58.95 %

 IoU threshold = 60 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.60) = 0.620370, or 62.04 %
Total Detection Time: 17 Seconds

Set points flag:
```

Val:

```
  calculation mAP (mean average precision)...
 Detection layer: 139 - type = 28
 Detection layer: 150 - type = 28
 Detection layer: 161 - type = 28
56
 detections_count = 260, unique_truth_count = 103
class_id = 0, name = tower_lattice, ap = 78.16%        (TP = 32, FP = 8)
class_id = 1, name = tower_tucohy, ap = 65.81%         (TP = 10, FP = 12)
class_id = 2, name = tower_wooden, ap = 44.33%         (TP = 22, FP = 9)

 for conf_thresh = 0.25, precision = 0.69, recall = 0.62, F1-score = 0.65
 for conf_thresh = 0.25, TP = 64, FP = 29, FN = 39, average IoU = 56.37 %

 IoU threshold = 60 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.60) = 0.627668, or 62.77 %
Total Detection Time: 7 Seconds
```