Aero2Astro
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Today i had trained Yolo v4 model upto 18200 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 = 1357, unique_truth_count = 663
class_id = 0, name = tower_lattice, ap = 99.95%          (TP = 273, FP = 12)
class_id = 1, name = tower_tucohy, ap = 98.53%           (TP = 163, FP = 7)
class_id = 2, name = tower_wooden, ap = 99.50%           (TP = 213, FP = 14)

 for conf_thresh = 0.25, precision = 0.95, recall = 0.98, F1-score = 0.97
 for conf_thresh = 0.25, TP = 649, FP = 33, FN = 14, average IoU = 81.94 %

 IoU threshold = 20 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.20) = 0.993236, or 99.32 %
Total Detection Time: 51 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 = 493, unique_truth_count = 202
  class_id = 0, name = tower_lattice, ap = 88.45%          (TP = 75, FP = 8)
  class_id = 1, name = tower_tucohy, ap = 80.83%           (TP = 39, FP = 9)
  class_id = 2, name = tower_wooden, ap = 65.22%           (TP = 39, FP = 10)

   for conf_thresh = 0.25, precision = 0.85, recall = 0.76, F1-score = 0.80
   for conf_thresh = 0.25, TP = 153, FP = 27, FN = 49, average IoU = 66.86 %

   IoU threshold = 20 %, used Area-Under-Curve for each unique Recall
   mean average precision (mAP@0.20) = 0.781683, or 78.17 %
  Total Detection Time: 15 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 = 225, unique_truth_count = 103
  class_id = 0, name = tower_lattice, ap = 87.12%          (TP = 35, FP = 3)
  class_id = 1, name = tower_tucohy, ap = 79.51%           (TP = 13, FP = 6)
  class_id = 2, name = tower_wooden, ap = 62.24%           (TP = 28, FP = 7)

   for conf_thresh = 0.25, precision = 0.83, recall = 0.74, F1-score = 0.78
   for conf_thresh = 0.25, TP = 76, FP = 16, FN = 27, average IoU = 65.59 %

   IoU threshold = 20 %, used Area-Under-Curve for each unique Recall
   mean average precision (mAP@0.20) = 0.762918, or 76.29 %
  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 = 1357, unique_truth_count = 663
class_id = 0, name = tower_lattice, ap = 98.35%         (TP = 271, FP = 14)
class_id = 1, name = tower_tucohy, ap = 96.16%          (TP = 161, FP = 9)
class_id = 2, name = tower_wooden, ap = 97.46%          (TP = 207, FP = 20)

 for conf_thresh = 0.25, precision = 0.94, recall = 0.96, F1-score = 0.95
 for conf_thresh = 0.25, TP = 639, FP = 43, FN = 24, average IoU = 81.18 %

 IoU threshold = 60 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.60) = 0.973225, or 97.32 %
Total Detection Time: 50 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 = 493, unique_truth_count = 202
class_id = 0, name = tower_lattice, ap = 73.32%         (TP = 66, FP = 17)
class_id = 1, name = tower_tucohy, ap = 75.45%          (TP = 36, FP = 12)
class_id = 2, name = tower_wooden, ap = 45.65%          (TP = 31, FP = 18)

 for conf_thresh = 0.25, precision = 0.74, recall = 0.66, F1-score = 0.70
 for conf_thresh = 0.25, TP = 133, FP = 47, FN = 69, average IoU = 62.09 %

 IoU threshold = 60 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.60) = 0.648076, or 64.81 %
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 = 225, unique_truth_count = 103
class_id = 0, name = tower_lattice, ap = 81.31%         (TP = 33, FP = 5)
class_id = 1, name = tower_tucohy, ap = 71.88%          (TP = 12, FP = 7)
class_id = 2, name = tower_wooden, ap = 45.13%          (TP = 21, FP = 14)

 for conf_thresh = 0.25, precision = 0.72, recall = 0.64, F1-score = 0.68
 for conf_thresh = 0.25, TP = 66, FP = 26, FN = 37, average IoU = 60.72 %

 IoU threshold = 60 %, used Area-Under-Curve for each unique Recall
 mean average precision (mAP@0.60) = 0.661071, or 66.11 %
Total Detection Time: 7 Seconds
```