In [1]:

```
import sys
import warnings

if not sys.warnoptions:
    warnings.simplefilter("ignore")
```

In [2]:

```
from imageai.Detection.Custom import DetectionModelTrainer
trainer = DetectionModelTrainer()
trainer.setModelTypeAsYOLOv3()
trainer.setDataDirectory(data_directory="armas")
trainer.setTrainConfig(object_names_array=["arma"], batch_size=4, num_experiments=200,
train_from_pretrained_model="pretrained-yolov3.h5")
trainer.trainModel()
```

```
Using TensorFlow backend.
```

```
Generating anchor boxes for training images and annotation...
Average IOU for 9 anchors: 0.74
Anchor Boxes generated.
Detection configuration saved in  armas\json\detection_config.json
Training on:    ['arma']
Training with Batch Size:  4
Number of Experiments:  200
WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\tensorflow_core\python\ops\resource_variable_ops.py:1630: calling BaseRes
ourceVariable.__init__ (from tensorflow.python.ops.resource_variable_ops)
with constraint is deprecated and will be removed in a future version.
Instructions for updating:
If using Keras pass *_constraint arguments to layers.
WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\imageai\Detection\Custom\yolo.py:24: to_float (from tensorflow.python.op
s.math_ops) is deprecated and will be removed in a future version.
Instructions for updating:
Use `tf.cast` instead.
WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\imageai\Detection\Custom\yolo.py:149: The name tf.assign_add is deprecate
d. Please use tf.compat.v1.assign_add instead.

Training with transfer learning from pretrained Model
WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\backend\tensorflow_backend.py:422: The name tf.global_variables is
deprecated. Please use tf.compat.v1.global_variables instead.

WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\backend\tensorflow_backend.py:431: The name tf.is_variable_initiali
zed is deprecated. Please use tf.compat.v1.is_variable_initialized instea
d.

WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\backend\tensorflow_backend.py:438: The name tf.variables_initialize
r is deprecated. Please use tf.compat.v1.variables_initializer instead.

WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\callbacks\tensorboard_v1.py:200: The name tf.summary.merge_all is d
eprecated. Please use tf.compat.v1.summary.merge_all instead.

WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\callbacks\tensorboard_v1.py:203: The name tf.summary.FileWriter is
deprecated. Please use tf.compat.v1.summary.FileWriter instead.

Epoch 1/200
800/800 [==============================] - 789s 986ms/step - loss: 25.4256
- yolo_layer_1_loss: 2.9597 - yolo_layer_2_loss: 8.6178 - yolo_layer_3_los
s: 13.8481 - val_loss: 12.6050 - val_yolo_layer_1_loss: 1.3726 - val_yolo_
layer_2_loss: 3.2961 - val_yolo_layer_3_loss: 5.9153
WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\callbacks\tensorboard_v1.py:343: The name tf.Summary is deprecated.
Please use tf.compat.v1.Summary instead.

Epoch 2/200
800/800 [==============================] - 723s 904ms/step - loss: 9.8724
- yolo_layer_1_loss: 1.1644 - yolo_layer_2_loss: 3.2514 - yolo_layer_3_los
s: 5.4566 - val_loss: 14.5275 - val_yolo_layer_1_loss: 1.4355 - val_yolo_l
ayer_2_loss: 3.4053 - val_yolo_layer_3_loss: 5.7241
Epoch 3/200
800/800 [==============================] - 728s 910ms/step - loss: 8.2236
- yolo_layer_1_loss: 1.2227 - yolo_layer_2_loss: 2.5774 - yolo_layer_3_los
```

```
s: 4.4235 - val_loss: 5.5530 - val_yolo_layer_1_loss: 1.1037 - val_yolo_la
yer_2_loss: 3.2378 - val_yolo_layer_3_loss: 5.3416
Epoch 4/200
800/800 [==============================] - 725s 906ms/step - loss: 7.2776
- yolo_layer_1_loss: 0.9205 - yolo_layer_2_loss: 2.2021 - yolo_layer_3_los
s: 4.1550 - val_loss: 7.3741 - val_yolo_layer_1_loss: 1.3714 - val_yolo_la
yer_2_loss: 2.9657 - val_yolo_layer_3_loss: 5.3852
Epoch 5/200
800/800 [==============================] - 725s 907ms/step - loss: 6.9586
- yolo_layer_1_loss: 0.9387 - yolo_layer_2_loss: 2.1742 - yolo_layer_3_los
s: 3.8457 - val_loss: 9.0451 - val_yolo_layer_1_loss: 0.9014 - val_yolo_la
yer_2_loss: 2.7052 - val_yolo_layer_3_loss: 5.3816
Epoch 6/200
800/800 [==============================] - 712s 891ms/step - loss: 6.3437
- yolo_layer_1_loss: 0.8043 - yolo_layer_2_loss: 1.9513 - yolo_layer_3_los
s: 3.5882 - val_loss: 16.3799 - val_yolo_layer_1_loss: 0.7954 - val_yolo_l
ayer_2_loss: 2.5829 - val_yolo_layer_3_loss: 5.1744
Epoch 7/200
800/800 [==============================] - 729s 912ms/step - loss: 6.1879
- yolo_layer_1_loss: 0.8782 - yolo_layer_2_loss: 1.9109 - yolo_layer_3_los
s: 3.3989 - val_loss: 7.1064 - val_yolo_layer_1_loss: 0.9862 - val_yolo_la
yer_2_loss: 2.7209 - val_yolo_layer_3_loss: 5.0740
Epoch 8/200
800/800 [==============================] - 732s 915ms/step - loss: 5.9990
- yolo_layer_1_loss: 0.8765 - yolo_layer_2_loss: 1.7986 - yolo_layer_3_los
s: 3.3238 - val_loss: 13.9382 - val_yolo_layer_1_loss: 1.2044 - val_yolo_l
ayer_2_loss: 2.4763 - val_yolo_layer_3_loss: 5.6055
Epoch 9/200
800/800 [==============================] - 718s 898ms/step - loss: 5.5924
- yolo_layer_1_loss: 0.7208 - yolo_layer_2_loss: 1.6503 - yolo_layer_3_los
s: 3.2212 - val_loss: 6.2237 - val_yolo_layer_1_loss: 0.8785 - val_yolo_la
yer_2_loss: 2.7149 - val_yolo_layer_3_loss: 5.5560
Epoch 10/200
800/800 [==============================] - 715s 893ms/step - loss: 5.1235
- yolo_layer_1_loss: 0.6018 - yolo_layer_2_loss: 1.5076 - yolo_layer_3_los
s: 3.0141 - val_loss: 11.8638 - val_yolo_layer_1_loss: 0.7903 - val_yolo_l
ayer_2_loss: 2.5029 - val_yolo_layer_3_loss: 5.2573
Epoch 11/200
800/800 [==============================] - 726s 908ms/step - loss: 5.0971
- yolo_layer_1_loss: 0.6563 - yolo_layer_2_loss: 1.4735 - yolo_layer_3_los
s: 2.9672 - val_loss: 6.6313 - val_yolo_layer_1_loss: 0.9406 - val_yolo_la
yer_2_loss: 2.4687 - val_yolo_layer_3_loss: 4.9193
Epoch 12/200
800/800 [==============================] - 719s 898ms/step - loss: 4.6958
- yolo_layer_1_loss: 0.6079 - yolo_layer_2_loss: 1.4175 - yolo_layer_3_los
s: 2.6704 - val_loss: 7.2747 - val_yolo_layer_1_loss: 0.8461 - val_yolo_la
yer_2_loss: 2.2590 - val_yolo_layer_3_loss: 5.0262
Epoch 13/200
800/800 [==============================] - 722s 902ms/step - loss: 4.8118
- yolo_layer_1_loss: 0.6163 - yolo_layer_2_loss: 1.4979 - yolo_layer_3_los
s: 2.6976 - val_loss: 7.7937 - val_yolo_layer_1_loss: 0.9757 - val_yolo_la
yer_2_loss: 2.3420 - val_yolo_layer_3_loss: 5.2472
Epoch 14/200
800/800 [==============================] - 712s 890ms/step - loss: 4.7090
- yolo_layer_1_loss: 0.5282 - yolo_layer_2_loss: 1.4910 - yolo_layer_3_los
s: 2.6899 - val_loss: 1.7982 - val_yolo_layer_1_loss: 0.7821 - val_yolo_la
yer_2_loss: 2.1674 - val_yolo_layer_3_loss: 4.8068
Epoch 15/200
800/800 [==============================] - 722s 903ms/step - loss: 3.8399
- yolo_layer_1_loss: 0.4422 - yolo_layer_2_loss: 1.1718 - yolo_layer_3_los
s: 2.2259 - val_loss: 7.9223 - val_yolo_layer_1_loss: 0.8917 - val_yolo_la
```

```
yer_2_loss: 2.2879 - val_yolo_layer_3_loss: 4.5579
Epoch 16/200
800/800 [==============================] - 733s 916ms/step - loss: 3.4332
- yolo_layer_1_loss: 0.3936 - yolo_layer_2_loss: 0.9938 - yolo_layer_3_los
s: 2.0458 - val_loss: 6.2945 - val_yolo_layer_1_loss: 0.7759 - val_yolo_la
yer_2_loss: 2.2378 - val_yolo_layer_3_loss: 4.5195
Epoch 17/200
800/800 [==============================] - 714s 892ms/step - loss: 3.1205
- yolo_layer_1_loss: 0.3319 - yolo_layer_2_loss: 0.8107 - yolo_layer_3_los
s: 1.9779 - val_loss: 2.2569 - val_yolo_layer_1_loss: 0.6749 - val_yolo_la
yer_2_loss: 2.0595 - val_yolo_layer_3_loss: 4.7982
Epoch 18/200
800/800 [==============================] - 723s 904ms/step - loss: 3.1464
- yolo_layer_1_loss: 0.3064 - yolo_layer_2_loss: 0.8998 - yolo_layer_3_los
s: 1.9401 - val_loss: 1.9457 - val_yolo_layer_1_loss: 0.7121 - val_yolo_la
yer_2_loss: 1.9620 - val_yolo_layer_3_loss: 4.8125
Epoch 19/200
800/800 [==============================] - 727s 909ms/step - loss: 2.9562
- yolo_layer_1_loss: 0.2779 - yolo_layer_2_loss: 0.8479 - yolo_layer_3_los
s: 1.8304 - val_loss: 10.1904 - val_yolo_layer_1_loss: 0.7883 - val_yolo_l
ayer_2_loss: 2.0041 - val_yolo_layer_3_loss: 4.7833
Epoch 20/200
800/800 [==============================] - 724s 905ms/step - loss: 3.1153
- yolo_layer_1_loss: 0.3098 - yolo_layer_2_loss: 0.8951 - yolo_layer_3_los
s: 1.9104 - val_loss: 10.8987 - val_yolo_layer_1_loss: 0.7566 - val_yolo_l
ayer_2_loss: 2.1848 - val_yolo_layer_3_loss: 4.6041
Epoch 21/200
800/800 [==============================] - 720s 900ms/step - loss: 2.9412
- yolo_layer_1_loss: 0.2860 - yolo_layer_2_loss: 0.8410 - yolo_layer_3_los
s: 1.8142 - val_loss: 7.2793 - val_yolo_layer_1_loss: 0.7636 - val_yolo_la
yer_2_loss: 2.1800 - val_yolo_layer_3_loss: 4.6095
Epoch 22/200
800/800 [==============================] - 724s 905ms/step - loss: 2.7972
- yolo_layer_1_loss: 0.2530 - yolo_layer_2_loss: 0.7757 - yolo_layer_3_los
s: 1.7685 - val_loss: 4.6569 - val_yolo_layer_1_loss: 0.6797 - val_yolo_la
yer_2_loss: 2.1257 - val_yolo_layer_3_loss: 4.5504
Epoch 23/200
800/800 [==============================] - 720s 900ms/step - loss: 2.8198
- yolo_layer_1_loss: 0.2461 - yolo_layer_2_loss: 0.7680 - yolo_layer_3_los
s: 1.8057 - val_loss: 7.2133 - val_yolo_layer_1_loss: 0.6206 - val_yolo_la
yer_2_loss: 2.1140 - val_yolo_layer_3_loss: 4.6897
Epoch 24/200
800/800 [==============================] - 724s 905ms/step - loss: 2.7250
- yolo_layer_1_loss: 0.2691 - yolo_layer_2_loss: 0.7967 - yolo_layer_3_los
s: 1.6591 - val_loss: 1.4855 - val_yolo_layer_1_loss: 0.5819 - val_yolo_la
yer_2_loss: 2.1003 - val_yolo_layer_3_loss: 4.8933
Epoch 25/200
800/800 [==============================] - 722s 903ms/step - loss: 2.8408
- yolo_layer_1_loss: 0.2635 - yolo_layer_2_loss: 0.8249 - yolo_layer_3_los
s: 1.7524 - val_loss: 4.3740 - val_yolo_layer_1_loss: 0.7121 - val_yolo_la
yer_2_loss: 1.7982 - val_yolo_layer_3_loss: 4.9128
Epoch 26/200
800/800 [==============================] - 725s 906ms/step - loss: 2.7816
- yolo_layer_1_loss: 0.2603 - yolo_layer_2_loss: 0.8371 - yolo_layer_3_los
s: 1.6842 - val_loss: 3.2861 - val_yolo_layer_1_loss: 0.6956 - val_yolo_la
yer_2_loss: 2.1612 - val_yolo_layer_3_loss: 4.7426
Epoch 27/200
800/800 [==============================] - 719s 899ms/step - loss: 2.7073
- yolo_layer_1_loss: 0.2329 - yolo_layer_2_loss: 0.7874 - yolo_layer_3_los
s: 1.6870 - val_loss: 8.5177 - val_yolo_layer_1_loss: 0.5242 - val_yolo_la
yer_2_loss: 1.9138 - val_yolo_layer_3_loss: 4.9109
```

```
Epoch 28/200
800/800 [==============================] - 729s 912ms/step - loss: 2.5913
- yolo_layer_1_loss: 0.2594 - yolo_layer_2_loss: 0.7731 - yolo_layer_3_los
s: 1.5588 - val_loss: 7.9599 - val_yolo_layer_1_loss: 0.5473 - val_yolo_la
yer_2_loss: 1.9562 - val_yolo_layer_3_loss: 4.7551
Epoch 29/200
800/800 [==============================] - 720s 900ms/step - loss: 2.6026
- yolo_layer_1_loss: 0.2443 - yolo_layer_2_loss: 0.7534 - yolo_layer_3_los
s: 1.6050 - val_loss: 6.7918 - val_yolo_layer_1_loss: 0.6955 - val_yolo_la
yer_2_loss: 1.9771 - val_yolo_layer_3_loss: 4.6763
Epoch 30/200
800/800 [==============================] - 725s 906ms/step - loss: 2.7519
- yolo_layer_1_loss: 0.2649 - yolo_layer_2_loss: 0.8527 - yolo_layer_3_los
s: 1.6343 - val_loss: 10.4155 - val_yolo_layer_1_loss: 0.6201 - val_yolo_l
ayer_2_loss: 1.9624 - val_yolo_layer_3_loss: 4.7432
Epoch 31/200
800/800 [==============================] - 715s 894ms/step - loss: 2.5437
- yolo_layer_1_loss: 0.1767 - yolo_layer_2_loss: 0.7872 - yolo_layer_3_los
s: 1.5798 - val_loss: 5.9141 - val_yolo_layer_1_loss: 0.6128 - val_yolo_la
yer_2_loss: 2.1036 - val_yolo_layer_3_loss: 4.6936
Epoch 32/200
800/800 [==============================] - 722s 902ms/step - loss: 2.4950
- yolo_layer_1_loss: 0.1922 - yolo_layer_2_loss: 0.6572 - yolo_layer_3_los
s: 1.6456 - val_loss: 1.0315 - val_yolo_layer_1_loss: 0.6078 - val_yolo_la
yer_2_loss: 1.9847 - val_yolo_layer_3_loss: 4.6589
Epoch 33/200
800/800 [==============================] - 730s 913ms/step - loss: 2.6517
- yolo_layer_1_loss: 0.2847 - yolo_layer_2_loss: 0.6958 - yolo_layer_3_los
s: 1.6712 - val_loss: 9.2790 - val_yolo_layer_1_loss: 0.7340 - val_yolo_la
yer_2_loss: 2.0723 - val_yolo_layer_3_loss: 4.7247
Epoch 34/200
800/800 [==============================] - 722s 902ms/step - loss: 2.6714
- yolo_layer_1_loss: 0.2584 - yolo_layer_2_loss: 0.7798 - yolo_layer_3_los
s: 1.6332 - val_loss: 2.8830 - val_yolo_layer_1_loss: 0.7060 - val_yolo_la
yer_2_loss: 1.9653 - val_yolo_layer_3_loss: 4.6713
Epoch 35/200
800/800 [==============================] - 724s 905ms/step - loss: 2.6256
- yolo_layer_1_loss: 0.2694 - yolo_layer_2_loss: 0.8251 - yolo_layer_3_los
s: 1.5310 - val_loss: 1.7930 - val_yolo_layer_1_loss: 0.6362 - val_yolo_la
yer_2_loss: 1.9060 - val_yolo_layer_3_loss: 4.7807
Epoch 36/200
800/800 [==============================] - 729s 911ms/step - loss: 2.7998
- yolo_layer_1_loss: 0.2568 - yolo_layer_2_loss: 0.8437 - yolo_layer_3_los
s: 1.6992 - val_loss: 4.0841 - val_yolo_layer_1_loss: 0.6325 - val_yolo_la
yer_2_loss: 1.9846 - val_yolo_layer_3_loss: 4.7778
Epoch 37/200
800/800 [==============================] - 715s 894ms/step - loss: 2.6492
- yolo_layer_1_loss: 0.2521 - yolo_layer_2_loss: 0.7538 - yolo_layer_3_los
s: 1.6432 - val_loss: 2.4298 - val_yolo_layer_1_loss: 0.6901 - val_yolo_la
yer_2_loss: 2.0044 - val_yolo_layer_3_loss: 4.7250
Epoch 38/200
800/800 [==============================] - 724s 905ms/step - loss: 2.5904
- yolo_layer_1_loss: 0.2368 - yolo_layer_2_loss: 0.7354 - yolo_layer_3_los
s: 1.6182 - val_loss: 13.2850 - val_yolo_layer_1_loss: 0.5952 - val_yolo_l
ayer_2_loss: 2.0151 - val_yolo_layer_3_loss: 4.7590
Epoch 39/200
800/800 [==============================] - 720s 900ms/step - loss: 2.5782
- yolo_layer_1_loss: 0.2713 - yolo_layer_2_loss: 0.7479 - yolo_layer_3_los
s: 1.5590 - val_loss: 13.5480 - val_yolo_layer_1_loss: 0.5801 - val_yolo_l
ayer_2_loss: 1.8833 - val_yolo_layer_3_loss: 4.7781
Epoch 40/200
```

```
800/800 [==============================] - 723s 903ms/step - loss: 2.6442
- yolo_layer_1_loss: 0.2722 - yolo_layer_2_loss: 0.7141 - yolo_layer_3_los
s: 1.6579 - val_loss: 1.9730 - val_yolo_layer_1_loss: 0.6077 - val_yolo_la
yer_2_loss: 1.8433 - val_yolo_layer_3_loss: 4.6822
Epoch 41/200
800/800 [==============================] - 720s 900ms/step - loss: 2.6080
- yolo_layer_1_loss: 0.2362 - yolo_layer_2_loss: 0.7108 - yolo_layer_3_los
s: 1.6609 - val_loss: 5.9958 - val_yolo_layer_1_loss: 0.6470 - val_yolo_la
yer_2_loss: 2.0101 - val_yolo_layer_3_loss: 4.6507
Epoch 42/200
800/800 [==============================] - 724s 905ms/step - loss: 2.5681
- yolo_layer_1_loss: 0.2041 - yolo_layer_2_loss: 0.7385 - yolo_layer_3_los
s: 1.6255 - val_loss: 11.1617 - val_yolo_layer_1_loss: 0.6582 - val_yolo_l
ayer_2_loss: 1.9505 - val_yolo_layer_3_loss: 4.7502
Epoch 43/200
800/800 [==============================] - 722s 902ms/step - loss: 2.6913
- yolo_layer_1_loss: 0.2215 - yolo_layer_2_loss: 0.7349 - yolo_layer_3_los
s: 1.7348 - val_loss: 1.5754 - val_yolo_layer_1_loss: 0.6115 - val_yolo_la
yer_2_loss: 2.0074 - val_yolo_layer_3_loss: 4.6266
Epoch 44/200
800/800 [==============================] - 724s 905ms/step - loss: 2.6145
- yolo_layer_1_loss: 0.2608 - yolo_layer_2_loss: 0.7879 - yolo_layer_3_los
s: 1.5658 - val_loss: 10.1259 - val_yolo_layer_1_loss: 0.6884 - val_yolo_l
ayer_2_loss: 1.9737 - val_yolo_layer_3_loss: 4.6233
Epoch 45/200
800/800 [==============================] - 718s 898ms/step - loss: 2.6013
- yolo_layer_1_loss: 0.2305 - yolo_layer_2_loss: 0.6665 - yolo_layer_3_los
s: 1.7043 - val_loss: 1.8582 - val_yolo_layer_1_loss: 0.6919 - val_yolo_la
yer_2_loss: 1.9545 - val_yolo_layer_3_loss: 4.6556
Epoch 46/200
800/800 [==============================] - 724s 905ms/step - loss: 2.5596
- yolo_layer_1_loss: 0.2516 - yolo_layer_2_loss: 0.7268 - yolo_layer_3_los
s: 1.5812 - val_loss: 8.0287 - val_yolo_layer_1_loss: 0.5926 - val_yolo_la
yer_2_loss: 2.0150 - val_yolo_layer_3_loss: 4.8044
Epoch 47/200
800/800 [==============================] - 721s 901ms/step - loss: 2.5393
- yolo_layer_1_loss: 0.2051 - yolo_layer_2_loss: 0.7135 - yolo_layer_3_los
s: 1.6207 - val_loss: 11.1247 - val_yolo_layer_1_loss: 0.6604 - val_yolo_l
ayer_2_loss: 1.9549 - val_yolo_layer_3_loss: 4.7350
Epoch 48/200
800/800 [==============================] - 721s 902ms/step - loss: 2.6775
- yolo_layer_1_loss: 0.2312 - yolo_layer_2_loss: 0.7354 - yolo_layer_3_los
s: 1.7110 - val_loss: 13.6214 - val_yolo_layer_1_loss: 0.6083 - val_yolo_l
ayer_2_loss: 2.0447 - val_yolo_layer_3_loss: 4.7052
Epoch 49/200
800/800 [==============================] - 733s 916ms/step - loss: 2.7130
- yolo_layer_1_loss: 0.2515 - yolo_layer_2_loss: 0.8131 - yolo_layer_3_los
s: 1.6484 - val_loss: 14.0589 - val_yolo_layer_1_loss: 0.6926 - val_yolo_l
ayer_2_loss: 2.0274 - val_yolo_layer_3_loss: 4.7415
Epoch 50/200
800/800 [==============================] - 723s 903ms/step - loss: 2.6327
- yolo_layer_1_loss: 0.2702 - yolo_layer_2_loss: 0.7416 - yolo_layer_3_los
s: 1.6210 - val_loss: 5.3703 - val_yolo_layer_1_loss: 0.7208 - val_yolo_la
yer_2_loss: 2.0496 - val_yolo_layer_3_loss: 4.6376
Epoch 51/200
800/800 [==============================] - 718s 897ms/step - loss: 2.6172
- yolo_layer_1_loss: 0.2307 - yolo_layer_2_loss: 0.6470 - yolo_layer_3_los
s: 1.7396 - val_loss: 6.5258 - val_yolo_layer_1_loss: 0.5189 - val_yolo_la
yer_2_loss: 1.9914 - val_yolo_layer_3_loss: 4.7562
Epoch 52/200
800/800 [==============================] - 726s 908ms/step - loss: 2.7447
```

```
- yolo_layer_1_loss: 0.3004 - yolo_layer_2_loss: 0.8385 - yolo_layer_3_los
s: 1.6059 - val_loss: 8.0527 - val_yolo_layer_1_loss: 0.6177 - val_yolo_la
yer_2_loss: 2.1144 - val_yolo_layer_3_loss: 4.7600
Epoch 53/200
800/800 [==============================] - 721s 901ms/step - loss: 2.6726
- yolo_layer_1_loss: 0.2572 - yolo_layer_2_loss: 0.7475 - yolo_layer_3_los
s: 1.6679 - val_loss: 7.3639 - val_yolo_layer_1_loss: 0.5847 - val_yolo_la
yer_2_loss: 1.8985 - val_yolo_layer_3_loss: 4.7543
Epoch 54/200
800/800 [==============================] - 724s 904ms/step - loss: 2.7243
- yolo_layer_1_loss: 0.2826 - yolo_layer_2_loss: 0.7880 - yolo_layer_3_los
s: 1.6537 - val_loss: 5.8475 - val_yolo_layer_1_loss: 0.7534 - val_yolo_la
yer_2_loss: 1.9447 - val_yolo_layer_3_loss: 4.7170
Epoch 55/200
800/800 [==============================] - 725s 907ms/step - loss: 2.7584
- yolo_layer_1_loss: 0.2542 - yolo_layer_2_loss: 0.8025 - yolo_layer_3_los
s: 1.7016 - val_loss: 3.5165 - val_yolo_layer_1_loss: 0.7423 - val_yolo_la
yer_2_loss: 2.1087 - val_yolo_layer_3_loss: 4.5960
Epoch 56/200
800/800 [==============================] - 721s 901ms/step - loss: 2.6313
- yolo_layer_1_loss: 0.2547 - yolo_layer_2_loss: 0.7591 - yolo_layer_3_los
s: 1.6174 - val_loss: 4.2252 - val_yolo_layer_1_loss: 0.6122 - val_yolo_la
yer_2_loss: 1.9998 - val_yolo_layer_3_loss: 4.6745
Epoch 57/200
800/800 [==============================] - 721s 902ms/step - loss: 2.4961
- yolo_layer_1_loss: 0.2549 - yolo_layer_2_loss: 0.6758 - yolo_layer_3_los
s: 1.5655 - val_loss: 7.0776 - val_yolo_layer_1_loss: 0.6266 - val_yolo_la
yer_2_loss: 1.9895 - val_yolo_layer_3_loss: 4.7499
Epoch 58/200
800/800 [==============================] - 717s 896ms/step - loss: 2.5510
- yolo_layer_1_loss: 0.2489 - yolo_layer_2_loss: 0.7042 - yolo_layer_3_los
s: 1.5979 - val_loss: 7.0194 - val_yolo_layer_1_loss: 0.6777 - val_yolo_la
yer_2_loss: 2.0708 - val_yolo_layer_3_loss: 4.6205
Epoch 59/200
800/800 [==============================] - 721s 901ms/step - loss: 2.6962
- yolo_layer_1_loss: 0.2574 - yolo_layer_2_loss: 0.7412 - yolo_layer_3_los
s: 1.6976 - val_loss: 6.2917 - val_yolo_layer_1_loss: 0.6248 - val_yolo_la
yer_2_loss: 2.0356 - val_yolo_layer_3_loss: 4.6321
Epoch 60/200
800/800 [==============================] - 732s 915ms/step - loss: 2.6898
- yolo_layer_1_loss: 0.2920 - yolo_layer_2_loss: 0.7706 - yolo_layer_3_los
s: 1.6272 - val_loss: 17.4225 - val_yolo_layer_1_loss: 0.7633 - val_yolo_l
ayer_2_loss: 2.1137 - val_yolo_layer_3_loss: 4.8132
Epoch 61/200
800/800 [==============================] - 723s 904ms/step - loss: 2.5998
- yolo_layer_1_loss: 0.2608 - yolo_layer_2_loss: 0.7596 - yolo_layer_3_los
s: 1.5794 - val_loss: 12.7292 - val_yolo_layer_1_loss: 0.7565 - val_yolo_l
ayer_2_loss: 2.1411 - val_yolo_layer_3_loss: 4.6485
Epoch 62/200
800/800 [==============================] - 729s 911ms/step - loss: 2.5306
- yolo_layer_1_loss: 0.2844 - yolo_layer_2_loss: 0.7434 - yolo_layer_3_los
s: 1.5028 - val_loss: 6.2747 - val_yolo_layer_1_loss: 0.5354 - val_yolo_la
yer_2_loss: 1.7723 - val_yolo_layer_3_loss: 4.6362
Epoch 63/200
800/800 [==============================] - 724s 905ms/step - loss: 2.6502
- yolo_layer_1_loss: 0.2680 - yolo_layer_2_loss: 0.7516 - yolo_layer_3_los
s: 1.6306 - val_loss: 14.4682 - val_yolo_layer_1_loss: 0.5878 - val_yolo_l
ayer_2_loss: 1.8850 - val_yolo_layer_3_loss: 4.6867
Epoch 64/200
800/800 [==============================] - 721s 901ms/step - loss: 2.6658
- yolo_layer_1_loss: 0.2320 - yolo_layer_2_loss: 0.7749 - yolo_layer_3_los
```

```
s: 1.6590 - val_loss: 4.6929 - val_yolo_layer_1_loss: 0.6424 - val_yolo_la
yer_2_loss: 1.8946 - val_yolo_layer_3_loss: 4.7248
Epoch 65/200
800/800 [==============================] - 720s 901ms/step - loss: 2.5444
- yolo_layer_1_loss: 0.2234 - yolo_layer_2_loss: 0.7542 - yolo_layer_3_los
s: 1.5667 - val_loss: 6.3554 - val_yolo_layer_1_loss: 0.6312 - val_yolo_la
yer_2_loss: 2.1719 - val_yolo_layer_3_loss: 4.6201
Epoch 66/200
800/800 [==============================] - 722s 902ms/step - loss: 2.6378
- yolo_layer_1_loss: 0.2499 - yolo_layer_2_loss: 0.7550 - yolo_layer_3_los
s: 1.6328 - val_loss: 12.1418 - val_yolo_layer_1_loss: 0.6642 - val_yolo_l
ayer_2_loss: 1.9205 - val_yolo_layer_3_loss: 4.7470
Epoch 67/200
800/800 [==============================] - 728s 910ms/step - loss: 2.6314
- yolo_layer_1_loss: 0.2669 - yolo_layer_2_loss: 0.7024 - yolo_layer_3_los
s: 1.6621 - val_loss: 7.3789 - val_yolo_layer_1_loss: 0.6803 - val_yolo_la
yer_2_loss: 1.7394 - val_yolo_layer_3_loss: 4.7943
Epoch 68/200
800/800 [==============================] - 721s 902ms/step - loss: 2.5377
- yolo_layer_1_loss: 0.2560 - yolo_layer_2_loss: 0.7843 - yolo_layer_3_los
s: 1.4974 - val_loss: 3.5099 - val_yolo_layer_1_loss: 0.6036 - val_yolo_la
yer_2_loss: 1.8257 - val_yolo_layer_3_loss: 4.7327
Epoch 69/200
800/800 [==============================] - 730s 912ms/step - loss: 2.6704
- yolo_layer_1_loss: 0.2731 - yolo_layer_2_loss: 0.7728 - yolo_layer_3_los
s: 1.6245 - val_loss: 12.5755 - val_yolo_layer_1_loss: 0.7220 - val_yolo_l
ayer_2_loss: 2.0077 - val_yolo_layer_3_loss: 4.7297
Epoch 70/200
800/800 [==============================] - 726s 908ms/step - loss: 2.5478
- yolo_layer_1_loss: 0.2326 - yolo_layer_2_loss: 0.7537 - yolo_layer_3_los
s: 1.5615 - val_loss: 8.3600 - val_yolo_layer_1_loss: 0.6348 - val_yolo_la
yer_2_loss: 1.9069 - val_yolo_layer_3_loss: 4.6821
Epoch 71/200
800/800 [==============================] - 716s 895ms/step - loss: 2.6388
- yolo_layer_1_loss: 0.2843 - yolo_layer_2_loss: 0.7109 - yolo_layer_3_los
s: 1.6435 - val_loss: 10.3250 - val_yolo_layer_1_loss: 0.6369 - val_yolo_l
ayer_2_loss: 2.0324 - val_yolo_layer_3_loss: 4.8297
Epoch 72/200
800/800 [==============================] - 726s 908ms/step - loss: 2.6866
- yolo_layer_1_loss: 0.2462 - yolo_layer_2_loss: 0.8096 - yolo_layer_3_los
s: 1.6308 - val_loss: 3.1905 - val_yolo_layer_1_loss: 0.7322 - val_yolo_la
yer_2_loss: 2.0701 - val_yolo_layer_3_loss: 4.7407
Epoch 73/200
800/800 [==============================] - 726s 908ms/step - loss: 2.6545
- yolo_layer_1_loss: 0.2843 - yolo_layer_2_loss: 0.7117 - yolo_layer_3_los
s: 1.6586 - val_loss: 6.0364 - val_yolo_layer_1_loss: 0.5349 - val_yolo_la
yer_2_loss: 1.8349 - val_yolo_layer_3_loss: 4.8227
Epoch 74/200
800/800 [==============================] - 716s 895ms/step - loss: 2.6124
- yolo_layer_1_loss: 0.2211 - yolo_layer_2_loss: 0.7639 - yolo_layer_3_los
s: 1.6275 - val_loss: 6.1346 - val_yolo_layer_1_loss: 0.6903 - val_yolo_la
yer_2_loss: 2.0369 - val_yolo_layer_3_loss: 4.8025
Epoch 75/200
800/800 [==============================] - 720s 900ms/step - loss: 2.5393
- yolo_layer_1_loss: 0.2308 - yolo_layer_2_loss: 0.7100 - yolo_layer_3_los
s: 1.5985 - val_loss: 4.8206 - val_yolo_layer_1_loss: 0.7433 - val_yolo_la
yer_2_loss: 2.0379 - val_yolo_layer_3_loss: 4.5997
Epoch 76/200
800/800 [==============================] - 712s 890ms/step - loss: 2.3826
- yolo_layer_1_loss: 0.1961 - yolo_layer_2_loss: 0.6533 - yolo_layer_3_los
s: 1.5332 - val_loss: 4.6429 - val_yolo_layer_1_loss: 0.6703 - val_yolo_la
```

```
yer_2_loss: 1.8921 - val_yolo_layer_3_loss: 4.7914
Epoch 77/200
800/800 [==============================] - 712s 890ms/step - loss: 2.4032
- yolo_layer_1_loss: 0.1939 - yolo_layer_2_loss: 0.6304 - yolo_layer_3_los
s: 1.5789 - val_loss: 5.7189 - val_yolo_layer_1_loss: 0.6916 - val_yolo_la
yer_2_loss: 2.0857 - val_yolo_layer_3_loss: 4.5983
Epoch 78/200
800/800 [==============================] - 736s 921ms/step - loss: 2.7088
- yolo_layer_1_loss: 0.2854 - yolo_layer_2_loss: 0.7683 - yolo_layer_3_los
s: 1.6552 - val_loss: 5.7526 - val_yolo_layer_1_loss: 0.6164 - val_yolo_la
yer_2_loss: 1.8634 - val_yolo_layer_3_loss: 4.7748
Epoch 79/200
800/800 [==============================] - 741s 927ms/step - loss: 2.6217
- yolo_layer_1_loss: 0.2416 - yolo_layer_2_loss: 0.7983 - yolo_layer_3_los
s: 1.5818 - val_loss: 2.6058 - val_yolo_layer_1_loss: 0.7465 - val_yolo_la
yer_2_loss: 1.9610 - val_yolo_layer_3_loss: 4.6619
Epoch 80/200
800/800 [==============================] - 732s 915ms/step - loss: 2.4967
- yolo_layer_1_loss: 0.2087 - yolo_layer_2_loss: 0.6713 - yolo_layer_3_los
s: 1.6167 - val_loss: 7.1349 - val_yolo_layer_1_loss: 0.6903 - val_yolo_la
yer_2_loss: 2.0839 - val_yolo_layer_3_loss: 4.7056
Epoch 81/200
800/800 [==============================] - 730s 913ms/step - loss: 2.6524
- yolo_layer_1_loss: 0.2478 - yolo_layer_2_loss: 0.7476 - yolo_layer_3_los
s: 1.6570 - val_loss: 11.8443 - val_yolo_layer_1_loss: 0.4429 - val_yolo_l
ayer_2_loss: 1.6926 - val_yolo_layer_3_loss: 4.8694
Epoch 82/200
800/800 [==============================] - 744s 930ms/step - loss: 2.6693
- yolo_layer_1_loss: 0.2110 - yolo_layer_2_loss: 0.8455 - yolo_layer_3_los
s: 1.6127 - val_loss: 1.4776 - val_yolo_layer_1_loss: 0.6617 - val_yolo_la
yer_2_loss: 1.9789 - val_yolo_layer_3_loss: 4.6765
Epoch 83/200
800/800 [==============================] - 736s 920ms/step - loss: 2.5483
- yolo_layer_1_loss: 0.2651 - yolo_layer_2_loss: 0.7053 - yolo_layer_3_los
s: 1.5778 - val_loss: 3.7089 - val_yolo_layer_1_loss: 0.6897 - val_yolo_la
yer_2_loss: 1.9542 - val_yolo_layer_3_loss: 4.6713
Epoch 84/200
800/800 [==============================] - 739s 924ms/step - loss: 2.5927
- yolo_layer_1_loss: 0.2494 - yolo_layer_2_loss: 0.7690 - yolo_layer_3_los
s: 1.5744 - val_loss: 9.8887 - val_yolo_layer_1_loss: 0.6321 - val_yolo_la
yer_2_loss: 1.9962 - val_yolo_layer_3_loss: 4.6206
Epoch 85/200
800/800 [==============================] - 736s 920ms/step - loss: 2.6612
- yolo_layer_1_loss: 0.2527 - yolo_layer_2_loss: 0.7296 - yolo_layer_3_los
s: 1.6790 - val_loss: 11.9201 - val_yolo_layer_1_loss: 0.6348 - val_yolo_l
ayer_2_loss: 1.9310 - val_yolo_layer_3_loss: 4.7262
Epoch 86/200
800/800 [==============================] - 734s 918ms/step - loss: 2.6557
- yolo_layer_1_loss: 0.2428 - yolo_layer_2_loss: 0.7880 - yolo_layer_3_los
s: 1.6249 - val_loss: 9.5895 - val_yolo_layer_1_loss: 0.5779 - val_yolo_la
yer_2_loss: 1.7358 - val_yolo_layer_3_loss: 4.6946
Epoch 87/200
800/800 [==============================] - 732s 915ms/step - loss: 2.5719
- yolo_layer_1_loss: 0.2391 - yolo_layer_2_loss: 0.7581 - yolo_layer_3_los
s: 1.5747 - val_loss: 10.7734 - val_yolo_layer_1_loss: 0.5912 - val_yolo_l
ayer_2_loss: 2.0771 - val_yolo_layer_3_loss: 4.8853
Epoch 88/200
800/800 [==============================] - 754s 942ms/step - loss: 2.6370
- yolo_layer_1_loss: 0.2496 - yolo_layer_2_loss: 0.8158 - yolo_layer_3_los
s: 1.5717 - val_loss: 18.8502 - val_yolo_layer_1_loss: 0.7049 - val_yolo_l
ayer_2_loss: 2.0414 - val_yolo_layer_3_loss: 4.6836
```

```
Epoch 89/200
800/800 [==============================] - 734s 917ms/step - loss: 2.6409
- yolo_layer_1_loss: 0.2439 - yolo_layer_2_loss: 0.7417 - yolo_layer_3_los
s: 1.6553 - val_loss: 6.3732 - val_yolo_layer_1_loss: 0.6131 - val_yolo_la
yer_2_loss: 2.0033 - val_yolo_layer_3_loss: 4.6612
Epoch 90/200
800/800 [==============================] - 725s 907ms/step - loss: 2.7378
- yolo_layer_1_loss: 0.2450 - yolo_layer_2_loss: 0.7570 - yolo_layer_3_los
s: 1.7358 - val_loss: 11.1593 - val_yolo_layer_1_loss: 0.7339 - val_yolo_l
ayer_2_loss: 2.0574 - val_yolo_layer_3_loss: 4.5708
Epoch 91/200
800/800 [==============================] - 726s 907ms/step - loss: 2.6355
- yolo_layer_1_loss: 0.2269 - yolo_layer_2_loss: 0.7156 - yolo_layer_3_los
s: 1.6930 - val_loss: 6.8767 - val_yolo_layer_1_loss: 0.4975 - val_yolo_la
yer_2_loss: 1.9513 - val_yolo_layer_3_loss: 4.8283
Epoch 92/200
800/800 [==============================] - 741s 926ms/step - loss: 2.6261
- yolo_layer_1_loss: 0.2786 - yolo_layer_2_loss: 0.7368 - yolo_layer_3_los
s: 1.6106 - val_loss: 7.4386 - val_yolo_layer_1_loss: 0.6740 - val_yolo_la
yer_2_loss: 1.9543 - val_yolo_layer_3_loss: 4.7155
Epoch 93/200
800/800 [==============================] - 732s 916ms/step - loss: 2.5702
- yolo_layer_1_loss: 0.2350 - yolo_layer_2_loss: 0.6962 - yolo_layer_3_los
s: 1.6390 - val_loss: 6.3887 - val_yolo_layer_1_loss: 0.7009 - val_yolo_la
yer_2_loss: 2.0789 - val_yolo_layer_3_loss: 4.5989
Epoch 94/200
800/800 [==============================] - 738s 923ms/step - loss: 2.5867
- yolo_layer_1_loss: 0.1990 - yolo_layer_2_loss: 0.7690 - yolo_layer_3_los
s: 1.6186 - val_loss: 6.6508 - val_yolo_layer_1_loss: 0.7851 - val_yolo_la
yer_2_loss: 1.9739 - val_yolo_layer_3_loss: 4.7247
Epoch 95/200
800/800 [==============================] - 742s 928ms/step - loss: 2.7606
- yolo_layer_1_loss: 0.2947 - yolo_layer_2_loss: 0.7473 - yolo_layer_3_los
s: 1.7185 - val_loss: 2.2275 - val_yolo_layer_1_loss: 0.5716 - val_yolo_la
yer_2_loss: 2.0264 - val_yolo_layer_3_loss: 4.8373
Epoch 96/200
800/800 [==============================] - 741s 926ms/step - loss: 2.6585
- yolo_layer_1_loss: 0.2378 - yolo_layer_2_loss: 0.7506 - yolo_layer_3_los
s: 1.6700 - val_loss: 9.3440 - val_yolo_layer_1_loss: 0.7628 - val_yolo_la
yer_2_loss: 2.0097 - val_yolo_layer_3_loss: 4.6989
Epoch 97/200
800/800 [==============================] - 724s 905ms/step - loss: 2.5559
- yolo_layer_1_loss: 0.1870 - yolo_layer_2_loss: 0.6819 - yolo_layer_3_los
s: 1.6870 - val_loss: 5.8416 - val_yolo_layer_1_loss: 0.6209 - val_yolo_la
yer_2_loss: 1.9108 - val_yolo_layer_3_loss: 4.7019
Epoch 98/200
800/800 [==============================] - 742s 927ms/step - loss: 2.6289
- yolo_layer_1_loss: 0.2583 - yolo_layer_2_loss: 0.7341 - yolo_layer_3_los
s: 1.6365 - val_loss: 8.0529 - val_yolo_layer_1_loss: 0.5666 - val_yolo_la
yer_2_loss: 2.0140 - val_yolo_layer_3_loss: 4.7270
Epoch 99/200
800/800 [==============================] - 734s 918ms/step - loss: 2.7025
- yolo_layer_1_loss: 0.2390 - yolo_layer_2_loss: 0.7722 - yolo_layer_3_los
s: 1.6913 - val_loss: 2.9183 - val_yolo_layer_1_loss: 0.7067 - val_yolo_la
yer_2_loss: 1.9890 - val_yolo_layer_3_loss: 4.6842
Epoch 100/200
800/800 [==============================] - 726s 908ms/step - loss: 2.3999
- yolo_layer_1_loss: 0.2091 - yolo_layer_2_loss: 0.5918 - yolo_layer_3_los
s: 1.5991 - val_loss: 2.5698 - val_yolo_layer_1_loss: 0.6609 - val_yolo_la
yer_2_loss: 1.7973 - val_yolo_layer_3_loss: 4.6625
Epoch 101/200
```

```
  7/800 [..............................] - ETA: 10:39 - loss: 2.6529 - yol
o_layer_1_loss: 0.1967 - yolo_layer_2_loss: 0.2189 - yolo_layer_3_loss: 2.
2373
```

```
---------------------------------------------------------------------------
KeyboardInterrupt                         Traceback (most recent call last)
<ipython-input-2-5974ebd6e3b0> in <module>
      4 trainer.setDataDirectory(data_directory="armas")
      5 trainer.setTrainConfig(object_names_array=["arma"], batch_size=4, num_experiments=200, train_from_pretrained_model="pretrained-yolov3.h5")
----> 6 trainer.trainModel()

~\Anaconda3\lib\site-packages\imageai\Detection\Custom\__init__.py in trainModel(self)
    289                 callbacks=callbacks,
    290                 workers=4,
--> 291                 max_queue_size=8
    292             )
    293

~\Anaconda3\lib\site-packages\keras\legacy\interfaces.py in wrapper(*args, **kwargs)
     89                 warnings.warn('Update your `' + object_name + '` call to the ' +
     90                               'Keras 2 API: ' + signature, stacklevel=2)
---> 91             return func(*args, **kwargs)
     92         wrapper._original_function = func
     93         return wrapper

~\Anaconda3\lib\site-packages\keras\engine\training.py in fit_generator(self, generator, steps_per_epoch, epochs, verbose, callbacks, validation_data, validation_steps, validation_freq, class_weight, max_queue_size, workers, use_multiprocessing, shuffle, initial_epoch)
   1730             use_multiprocessing=use_multiprocessing,
   1731             shuffle=shuffle,
-> 1732             initial_epoch=initial_epoch)
   1733
   1734     @interfaces.legacy_generator_methods_support

~\Anaconda3\lib\site-packages\keras\engine\training_generator.py in fit_generator(model, generator, steps_per_epoch, epochs, verbose, callbacks, validation_data, validation_steps, validation_freq, class_weight, max_queue_size, workers, use_multiprocessing, shuffle, initial_epoch)
    218                                             sample_weight=sample_weight,
    219                                             class_weight=class_weight,
--> 220                                             reset_metrics=False)
    221
    222                 outs = to_list(outs)

~\Anaconda3\lib\site-packages\keras\engine\training.py in train_on_batch(self, x, y, sample_weight, class_weight, reset_metrics)
   1512             ins = x + y + sample_weights
   1513         self._make_train_function()
-> 1514         outputs = self.train_function(ins)
   1515
   1516         if reset_metrics:

~\Anaconda3\lib\site-packages\tensorflow_core\python\keras\backend.py in __call__(self, inputs)
   3474
```

```
   3475     fetched = self._callable_fn(*array_vals,
-> 3476                                 run_metadata=self.run_metadata)
   3477     self._call_fetch_callbacks(fetched[-len(self._fetches):])
   3478     output_structure = nest.pack_sequence_as(

~\Anaconda3\lib\site-packages\tensorflow_core\python\client\session.py in
__call__(self, *args, **kwargs)
   1470         ret = tf_session.TF_SessionRunCallable(self._session._sess
ion,
   1471                                                self._handle, args,
-> 1472                                                run_metadata_ptr)
   1473         if run_metadata:
   1474           proto_data = tf_session.TF_GetBuffer(run_metadata_ptr)

KeyboardInterrupt:
```

In [3]:

```
from imageai.Detection.Custom import DetectionModelTrainer

trainer = DetectionModelTrainer()
trainer.setModelTypeAsYOLOv3()
trainer.setDataDirectory(data_directory="armas")
metrics = trainer.evaluateModel(model_path="armas\models1", json_path="armas\json\detec
tion_config.json", iou_threshold=0.5, object_threshold=0.3, nms_threshold=0.5)
```

```
Starting Model evaluation....
WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\backend\tensorflow_backend.py:422: The name tf.global_variables is
deprecated. Please use tf.compat.v1.global_variables instead.

WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\backend\tensorflow_backend.py:431: The name tf.is_variable_initiali
zed is deprecated. Please use tf.compat.v1.is_variable_initialized instea
d.

WARNING:tensorflow:From D:\Usuarios\spi112884\Anaconda3\lib\site-packages
\keras\backend\tensorflow_backend.py:438: The name tf.variables_initialize
r is deprecated. Please use tf.compat.v1.variables_initializer instead.

Model File:  armas\models1\detection_model-ex-001--loss-0025.426.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.5960
mAP: 0.5960
==============================
Model File:  armas\models1\detection_model-ex-002--loss-0009.872.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.6496
mAP: 0.6496
==============================
Model File:  armas\models1\detection_model-ex-003--loss-0008.224.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.7713
mAP: 0.7713
==============================
Model File:  armas\models1\detection_model-ex-004--loss-0007.278.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.5435
mAP: 0.5435
==============================
Model File:  armas\models1\detection_model-ex-005--loss-0006.959.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.7343
mAP: 0.7343
==============================
Model File:  armas\models1\detection_model-ex-006--loss-0006.344.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.7734
mAP: 0.7734
```

```
================================
Model File:  armas\models1\detection_model-ex-007--loss-0006.188.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.6938
mAP: 0.6938
================================
Model File:  armas\models1\detection_model-ex-008--loss-0005.999.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.7241
mAP: 0.7241
================================
Model File:  armas\models1\detection_model-ex-009--loss-0005.592.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.6540
mAP: 0.6540
================================
Model File:  armas\models1\detection_model-ex-010--loss-0005.124.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.7630
mAP: 0.7630
================================
Model File:  armas\models1\detection_model-ex-011--loss-0005.097.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8054
mAP: 0.8054
================================
Model File:  armas\models1\detection_model-ex-012--loss-0004.696.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8151
mAP: 0.8151
================================
Model File:  armas\models1\detection_model-ex-015--loss-0003.840.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8287
mAP: 0.8287
================================
Model File:  armas\models1\detection_model-ex-016--loss-0003.433.h5

Using IoU :  0.5
Using Object Threshold :  0.3
```

```
Using Non-Maximum Suppression :  0.5
arma: 0.8472
mAP: 0.8472
================================
```

In [4]:

```
from imageai.Detection.Custom import DetectionModelTrainer

trainer = DetectionModelTrainer()
trainer.setModelTypeAsYOLOv3()
trainer.setDataDirectory(data_directory="armas")
metrics = trainer.evaluateModel(model_path="armas\models2", json_path="armas\json\detec
tion_config.json", iou_threshold=0.5, object_threshold=0.3, nms_threshold=0.5)
```

```
Starting Model evaluation....
Model File:  armas\models2\detection_model-ex-017--loss-0003.120.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8398
mAP: 0.8398
================================
Model File:  armas\models2\detection_model-ex-019--loss-0002.956.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8368
mAP: 0.8368
================================
Model File:  armas\models2\detection_model-ex-021--loss-0002.941.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8276
mAP: 0.8276
================================
Model File:  armas\models2\detection_model-ex-022--loss-0002.797.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8348
mAP: 0.8348
================================
Model File:  armas\models2\detection_model-ex-024--loss-0002.725.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8367
mAP: 0.8367
================================
Model File:  armas\models2\detection_model-ex-027--loss-0002.707.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8285
mAP: 0.8285
================================
Model File:  armas\models2\detection_model-ex-028--loss-0002.591.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8257
mAP: 0.8257
================================
Model File:  armas\models2\detection_model-ex-031--loss-0002.544.h5

Using IoU :  0.5
Using Object Threshold :  0.3
```

```
Using Non-Maximum Suppression :  0.5
arma: 0.8132
mAP: 0.8132
==============================
Model File:  armas\models2\detection_model-ex-032--loss-0002.495.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8234
mAP: 0.8234
==============================
Model File:  armas\models2\detection_model-ex-076--loss-0002.383.h5

Using IoU :  0.5
Using Object Threshold :  0.3
Using Non-Maximum Suppression :  0.5
arma: 0.8249
mAP: 0.8249
==============================
```

In [ ]: