

EXECUTION OF Train_YOLO.py

FREEZE ALL LAYERS -TRAIN ON 267 SAMPLES, VAL ON 29 SAMPLES, WITH BATCH SIZE 32

```
Anaconda Prompt (Anaconda) + v
rs/aruna/OneDrive/Desktop/yolo_structure/Data/Source_Images/Training_Images/vott-csv-export/rosacea%20(9).jpg 36,14,162,129,2 185,52,
292,207,2']
Train on 267 samples, val on 29 samples, with batch size 32.
Epoch 1/51
8/8 [=====] - 784s 98s/step - loss: 3534.0778 - val_loss: 1707.9758
Epoch 2/51
8/8 [=====] - 642s 80s/step - loss: 1258.3348 - val_loss: 716.3694
Epoch 3/51
8/8 [=====] - 640s 80s/step - loss: 562.1788 - val_loss: 383.5188
Epoch 4/51
8/8 [=====] - 647s 81s/step - loss: 320.8186 - val_loss: 221.6605
Epoch 5/51
8/8 [=====] - 563s 70s/step - loss: 228.0539 - val_loss: 180.6038
Epoch 6/51
8/8 [=====] - 341s 43s/step - loss: 178.3158 - val_loss: 135.9518
Epoch 7/51
8/8 [=====] - 344s 43s/step - loss: 156.2087 - val_loss: 125.4325
Epoch 8/51
8/8 [=====] - 343s 43s/step - loss: 133.4365 - val_loss: 113.7222
Epoch 9/51
8/8 [=====] - 350s 44s/step - loss: 121.9265 - val_loss: 108.7280
Epoch 10/51
8/8 [=====] - 351s 44s/step - loss: 110.5155 - val_loss: 94.2858
Epoch 11/51
8/8 [=====] - 327s 41s/step - loss: 105.9204 - val_loss: 86.8203
Epoch 12/51
8/8 [=====] - 325s 41s/step - loss: 98.8876 - val_loss: 85.5290
Epoch 13/51
8/8 [=====] - 390s 49s/step - loss: 89.5216 - val_loss: 77.7659
Epoch 14/51
8/8 [=====] - 704s 88s/step - loss: 86.9913 - val_loss: 77.0447
Epoch 15/51
```

UNFREE ALL LAYERS -TRAIN ON 267 SAMPLES, VAL ON 29 SAMPLES, WITH BATCH SIZE 4

```
Anaconda Prompt (Anaconda) x + v
8/8 [=====] - 300s 37s/step - loss: 41.0226 - val_loss: 37.7333
Epoch 49/51
8/8 [=====] - 296s 37s/step - loss: 41.4534 - val_loss: 38.4730
Epoch 50/51
8/8 [=====] - 296s 37s/step - loss: 40.5281 - val_loss: 38.2317
Epoch 51/51
8/8 [=====] - 296s 37s/step - loss: 40.8272 - val_loss: 37.0127
Unfreeze all layers.
Train on 267 samples, val on 29 samples, with batch size 4.
Epoch 52/102
66/66 [=====] - 813s 12s/step - loss: 31.2485 - val_loss: 27.3707
Epoch 53/102
66/66 [=====] - 5033s 76s/step - loss: 28.1337 - val_loss: 26.9772
Epoch 54/102
66/66 [=====] - 1893s 29s/step - loss: 27.4507 - val_loss: 26.6687
Epoch 55/102
66/66 [=====] - 1011s 15s/step - loss: 26.9931 - val_loss: 27.0795
Epoch 56/102
66/66 [=====] - 800s 12s/step - loss: 26.1664 - val_loss: 25.3490
Epoch 57/102
66/66 [=====] - 788s 12s/step - loss: 26.1986 - val_loss: 26.5729
Epoch 58/102
66/66 [=====] - 784s 12s/step - loss: 25.1017 - val_loss: 23.6815
Epoch 59/102
66/66 [=====] - 786s 12s/step - loss: 25.2507 - val_loss: 26.8350
Epoch 60/102
66/66 [=====] - 786s 12s/step - loss: 25.0014 - val_loss: 22.4921
Epoch 61/102
66/66 [=====] - 810s 12s/step - loss: 25.8355 - val_loss: 27.2361
Epoch 62/102
66/66 [=====] - 1723s 26s/step - loss: 24.7002 - val_loss: 25.1475
Epoch 63/102
```

REDUCE LR ON PLATEAU REDUCING LEARNING RATE

```
Anaconda Prompt (Anaconda) x + v
Epoch 63/102
66/66 [=====] - 1976s 30s/step - loss: 24.7589 - val_loss: 22.8320

Epoch 00063: ReduceLR0nPlateau reducing learning rate to 9.999999747378752e-06.
Epoch 64/102
66/66 [=====] - 1844s 28s/step - loss: 23.6700 - val_loss: 24.9610
Epoch 65/102
66/66 [=====] - 913s 14s/step - loss: 23.2147 - val_loss: 22.7190
Epoch 66/102
66/66 [=====] - 958s 15s/step - loss: 23.0483 - val_loss: 22.7492

Epoch 00066: ReduceLR0nPlateau reducing learning rate to 9.999999747378752e-07.
Epoch 67/102
66/66 [=====] - 890s 13s/step - loss: 22.7483 - val_loss: 21.3276
Epoch 68/102
66/66 [=====] - 846s 13s/step - loss: 22.2019 - val_loss: 24.1597
Epoch 69/102
66/66 [=====] - 847s 13s/step - loss: 23.7420 - val_loss: 22.7781
Epoch 70/102
66/66 [=====] - 853s 13s/step - loss: 23.4943 - val_loss: 22.8019

Epoch 00070: ReduceLR0nPlateau reducing learning rate to 9.99999974752428e-08.
Epoch 71/102
66/66 [=====] - 1828s 28s/step - loss: 22.4388 - val_loss: 21.3289
Epoch 72/102
66/66 [=====] - 1942s 29s/step - loss: 23.5541 - val_loss: 23.5981
Epoch 73/102
66/66 [=====] - 1785s 27s/step - loss: 23.2195 - val_loss: 24.8595

Epoch 00073: ReduceLR0nPlateau reducing learning rate to 1.0000000116860975e-08.
Epoch 74/102
66/66 [=====] - 882s 13s/step - loss: 22.0395 - val_loss: 23.3263
```

EARLY STOPPING AT EPOCH 77

```
Anaconda Prompt (Anaconda) x + -
Epoch 00066: ReduceLROnPlateau reducing learning rate to 9.999999747378752e-07.
Epoch 67/102
66/66 [=====] - 890s 13s/step - loss: 22.7483 - val_loss: 21.3276
Epoch 68/102
66/66 [=====] - 846s 13s/step - loss: 22.2019 - val_loss: 24.1597
Epoch 69/102
66/66 [=====] - 847s 13s/step - loss: 23.7420 - val_loss: 22.7781
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Epoch 00070: ReduceLROnPlateau reducing learning rate to 9.999999974752428e-08.
Epoch 71/102
66/66 [=====] - 1828s 28s/step - loss: 22.4388 - val_loss: 21.3289
Epoch 72/102
66/66 [=====] - 1942s 29s/step - loss: 23.5541 - val_loss: 23.5981
Epoch 73/102
66/66 [=====] - 1785s 27s/step - loss: 23.2195 - val_loss: 24.8595

Epoch 00073: ReduceLROnPlateau reducing learning rate to 1.0000000116860975e-08.
Epoch 74/102
66/66 [=====] - 882s 13s/step - loss: 22.0395 - val_loss: 23.3263
Epoch 75/102
66/66 [=====] - 839s 13s/step - loss: 23.4128 - val_loss: 22.6440
Epoch 76/102
66/66 [=====] - 853s 13s/step - loss: 21.7689 - val_loss: 23.1392

Epoch 00076: ReduceLROnPlateau reducing learning rate to 9.99999939225292e-10.
Epoch 77/102
66/66 [=====] - 7450s 113s/step - loss: 24.0544 - val_loss: 23.1019
Epoch 00077: early stopping
```

RECEIVED MODEL WEIGHTS

