

Bacteria colonies counting

By

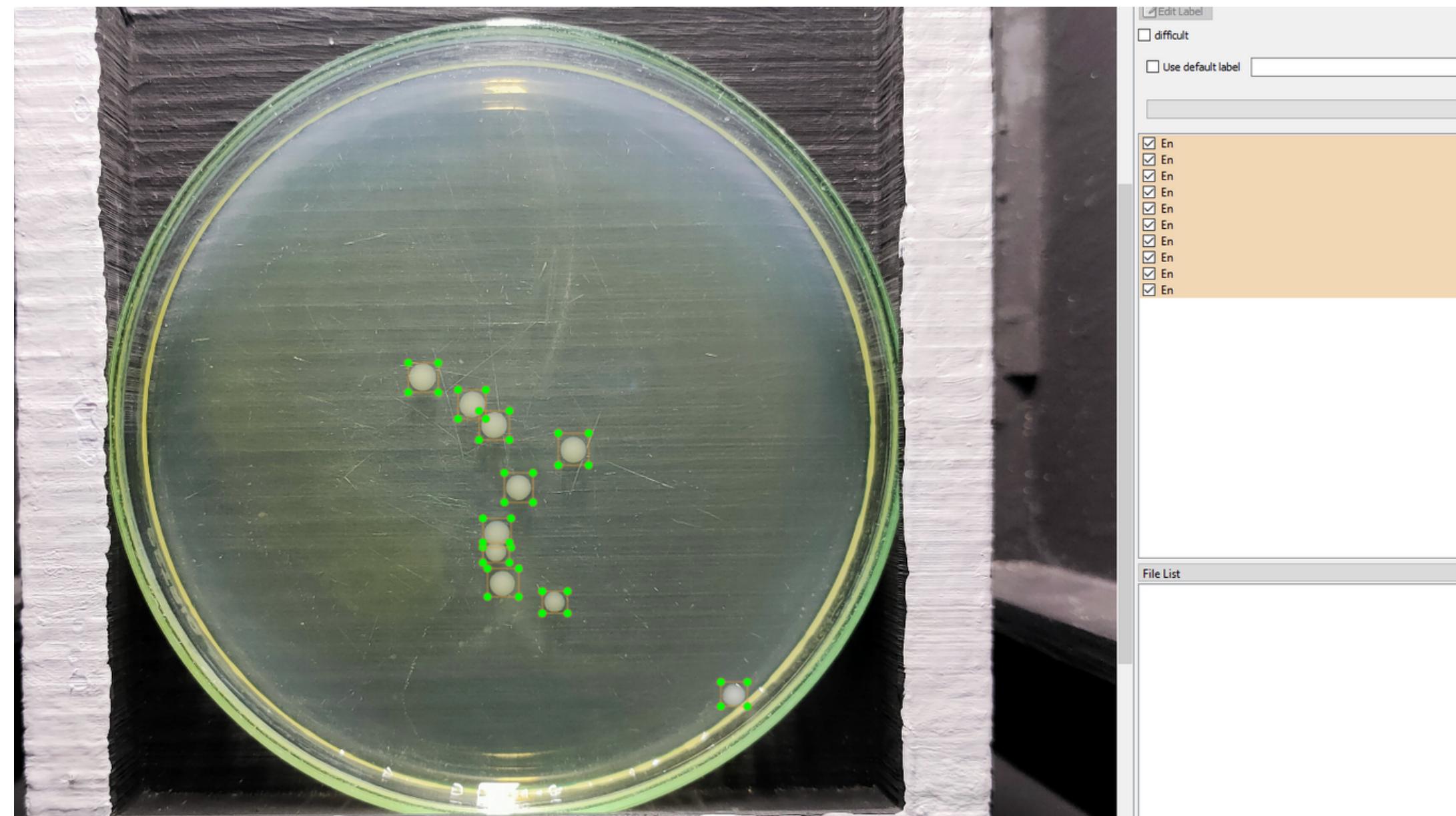
62361000 JATUPAT THAEEKASIKUM

62361321 JEDSADA NUMPARWAT

Medthod

► 01.

Labeling

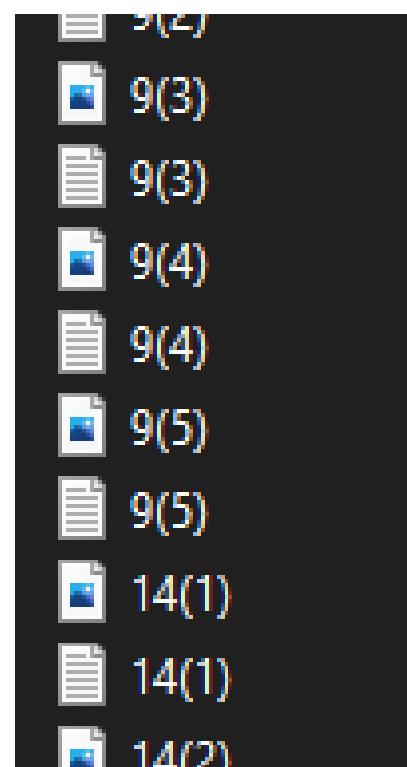


Medthod

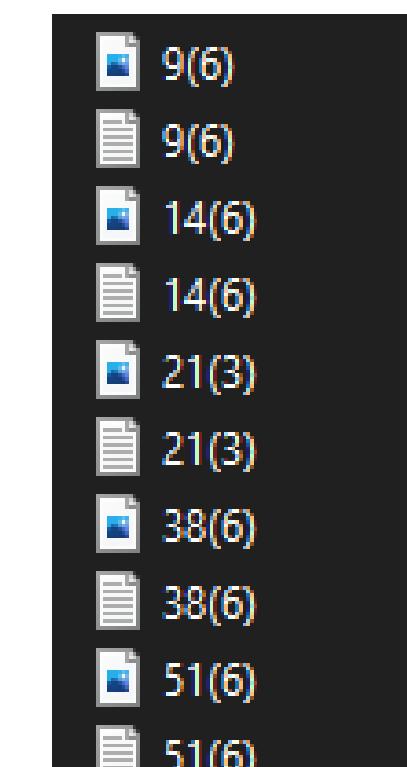
Dataset

Name	Date modified	Type	Size
train	11/2/2022 5:22 AM	File folder	
valid	11/2/2022 5:18 AM	File folder	
classes	11/1/2022 11:55 PM	Text Document	1 KB
data	11/2/2022 12:04 AM	Yaml Source File	1 KB

train



valid



Medthod

► 02.

Training

		all	12	661	0.948	0.909	0.932	0.603
Epoch	gpu_mem	box	obj	cls	total	labels	img_size	
297/299	10.8G	0.03708	0.01873	0	0.05581	601	640: 100% 4/4 [00:42<00:00, 10.63s/it]	
	Class	Images	Labels		P	R	mAP@.5	mAP@.5:.95: 100% 1/1 [00:00<00:00, 2.49it/s]
	all	12	661	0.946	0.908	0.927	0.602	
Epoch	gpu_mem	box	obj	cls	total	labels	img_size	
298/299	10.8G	0.02432	0.02026	0	0.04458	695	640: 100% 4/4 [00:49<00:00, 12.26s/it]	
	Class	Images	Labels		P	R	mAP@.5	mAP@.5:.95: 100% 1/1 [00:00<00:00, 2.47it/s]
	all	12	661	0.942	0.909	0.927	0.601	
Epoch	gpu_mem	box	obj	cls	total	labels	img_size	
299/299	10.8G	0.008786	0.01938	0	0.02817	515	640: 100% 4/4 [00:35<00:00, 8.99s/it]	
	Class	Images	Labels		P	R	mAP@.5	mAP@.5:.95: 100% 1/1 [00:01<00:00, 1.05s/it]
	all	12	661	0.948	0.911	0.93	0.595	

Medthod

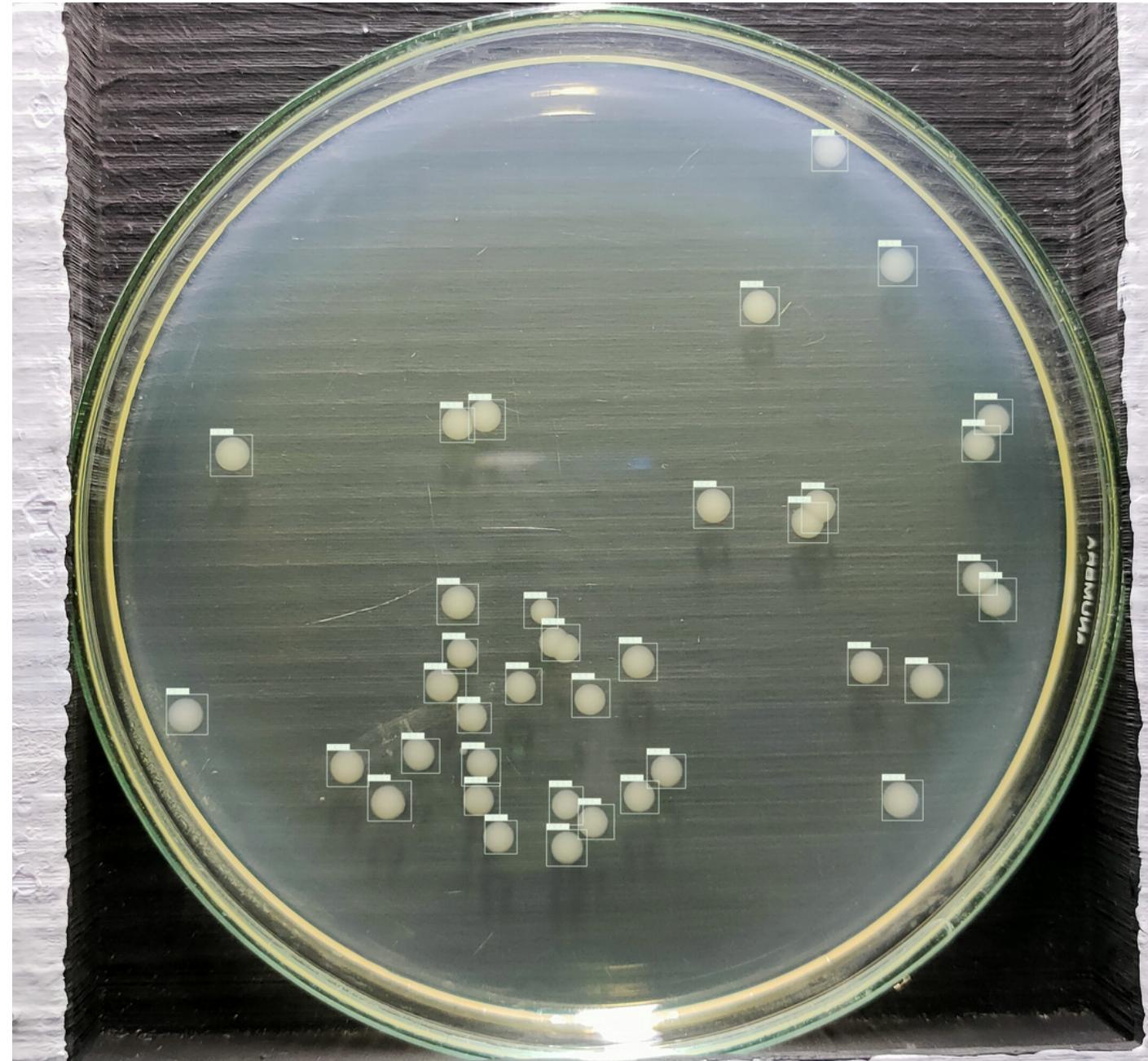
► 03.

Counting

```
(A4venv3_9) D:\305518\codes\Assignment4>yolov7>python En_count.py --regression --source ../All_Data
```

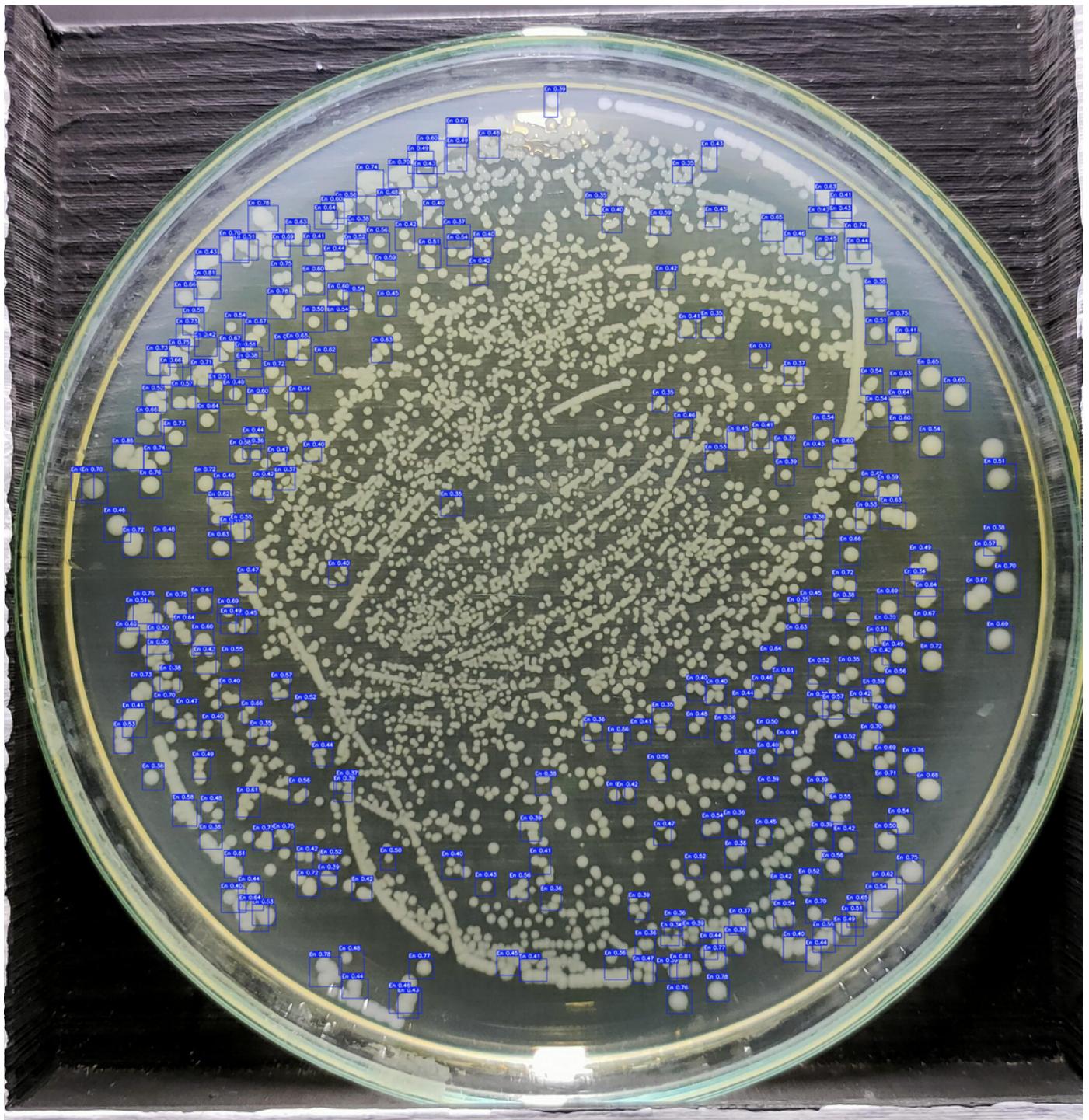
```
optional arguments:
  -h, --help            show this help message and exit
  --weights WEIGHTS [WEIGHTS ...]
                        model.pt path(s)
  --source SOURCE        source
  --img-size IMG_SIZE    inference size (pixels)
  --conf-thres CONF_THRES
                        object confidence threshold(default = 0.5)
  --iou-thres IOU_THRES
                        IOU threshold for NMS(default = 0.45)
  --regression          display regression
  --view-img             display results
  --no-trace              don't trace model
```

Counting Result



```
Name = 38  
38 Ens, Done. (966.9ms) Inference, (2.0ms) NMS
```

Test with 300 colonies

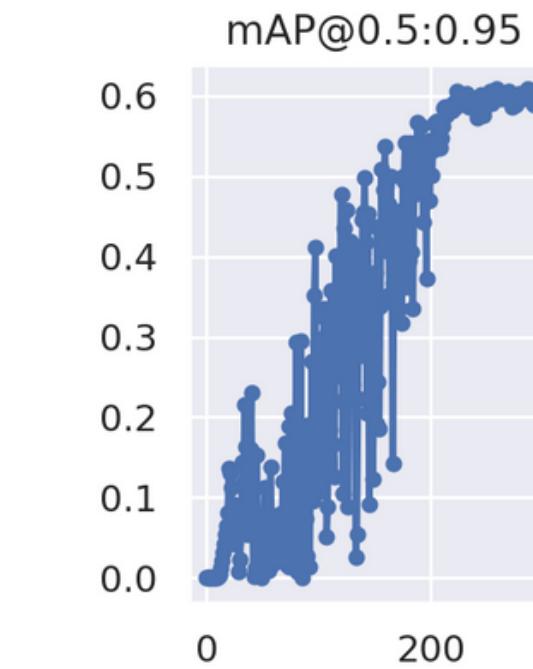
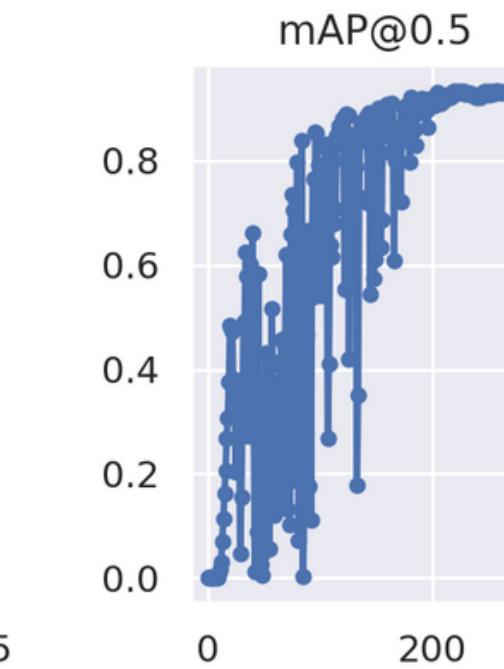
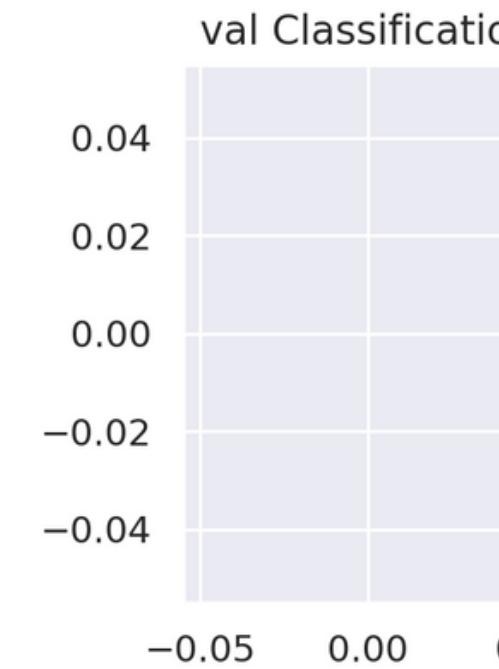
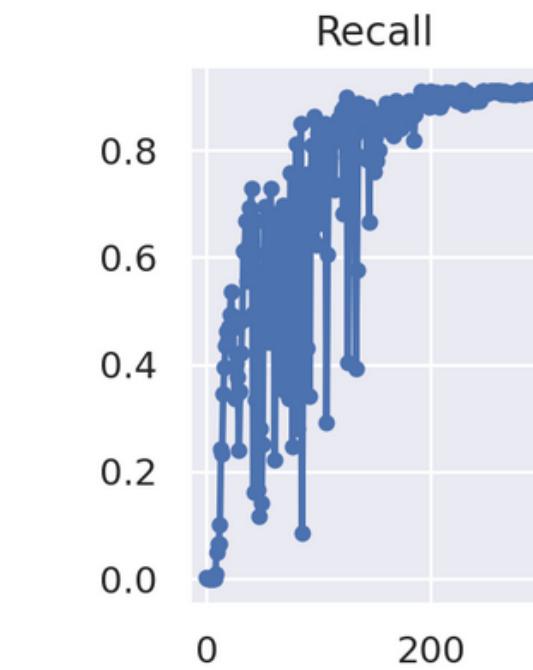
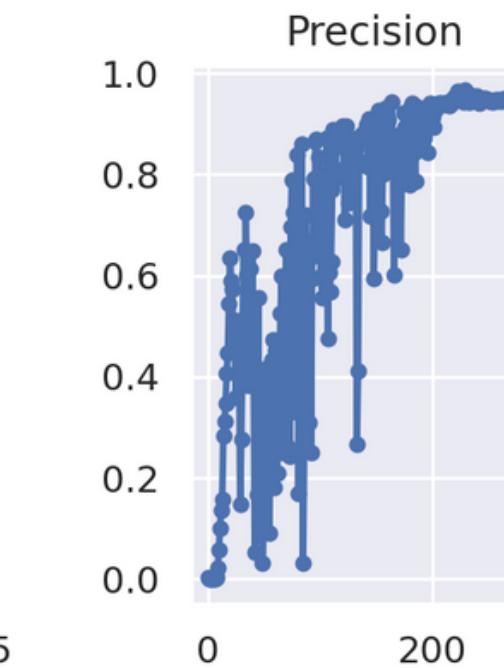
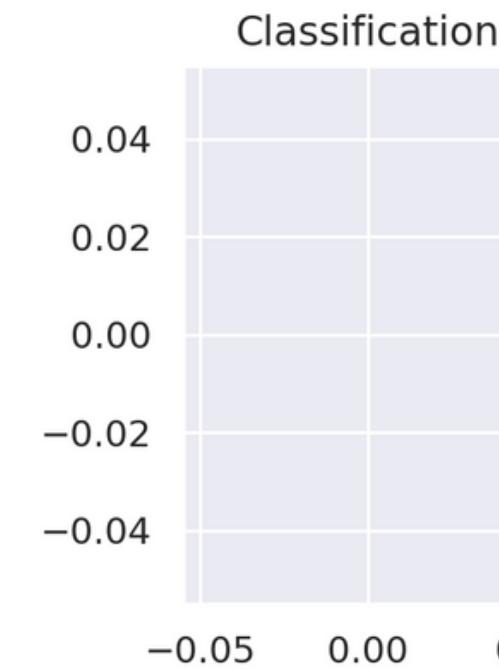
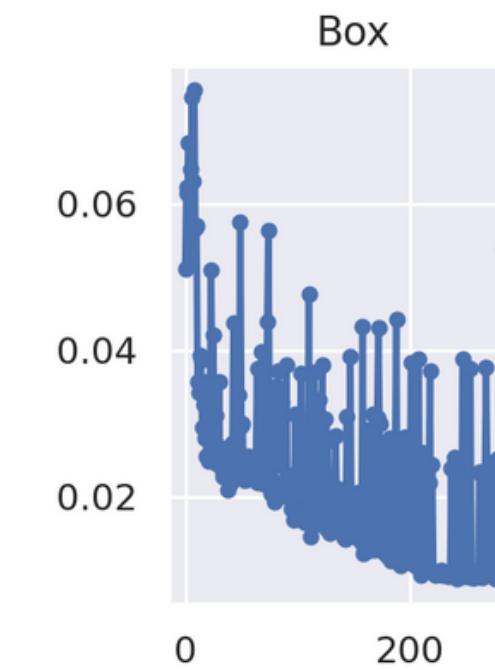


Name = 300

300 Ens, Done. (992.0ms) Inference, (2.0ms) NMS

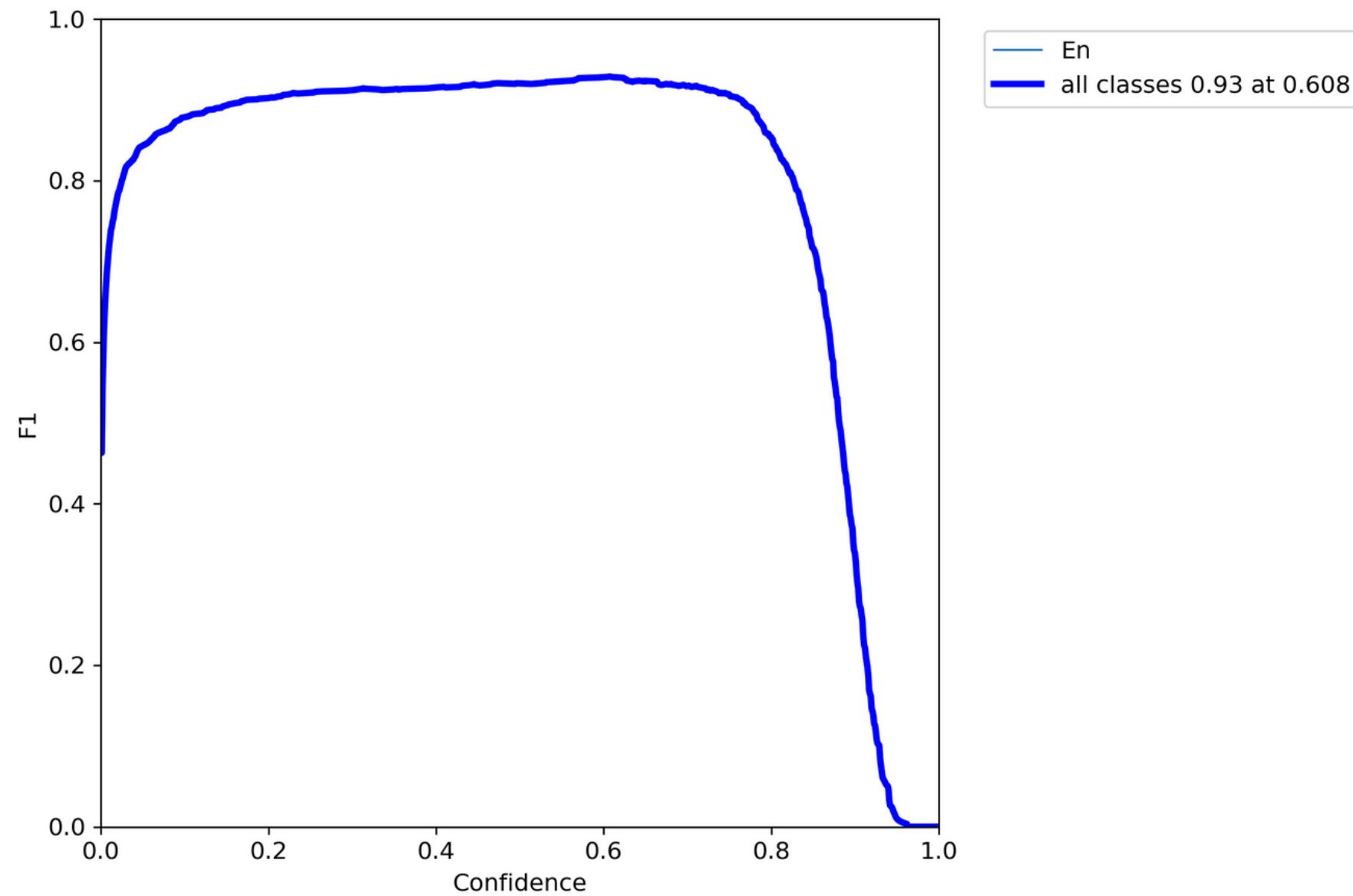
Model Evaluations

Training result



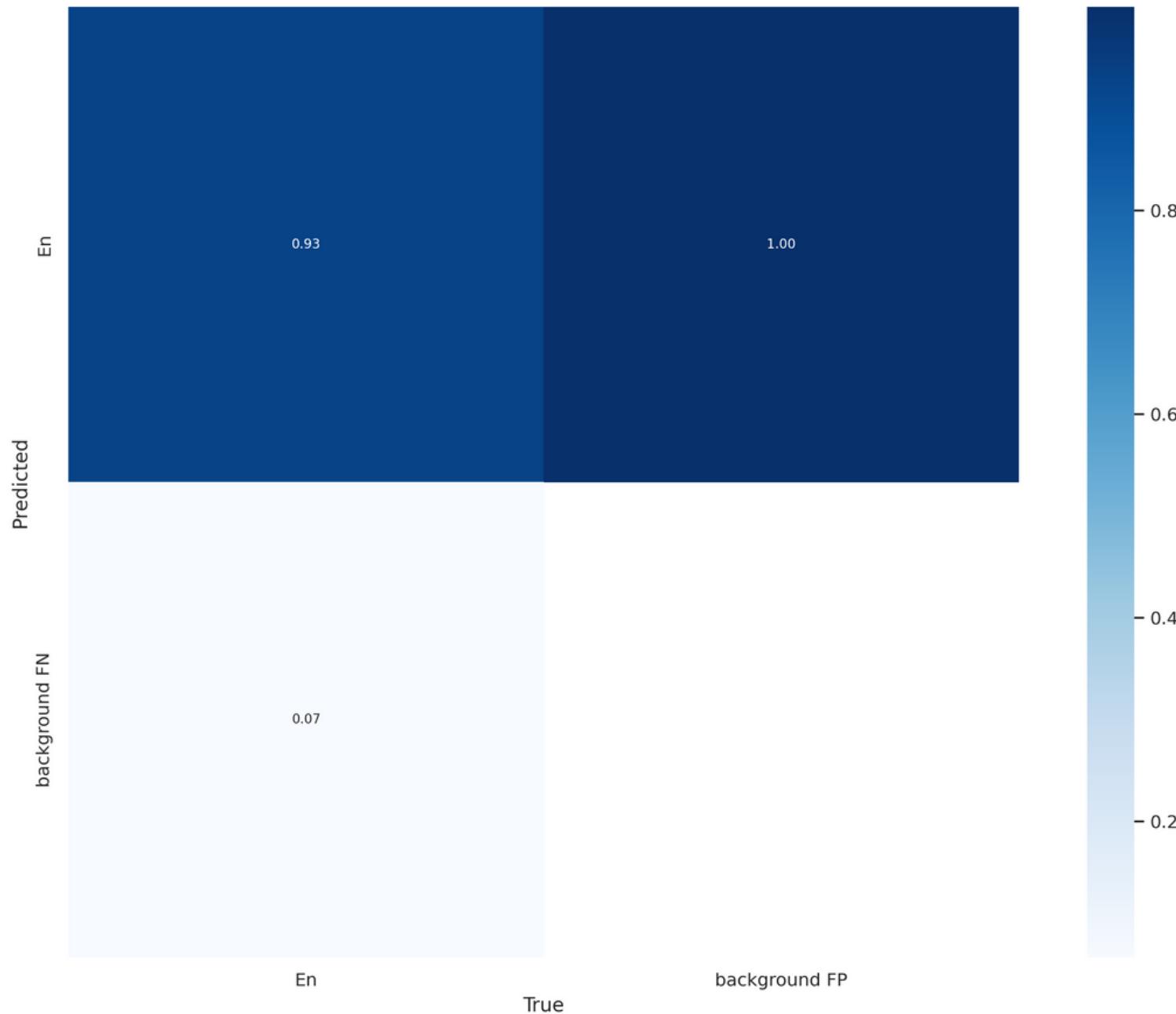
Model Evaluations

F1



Model Evaluations

Confusion Matrix



Counter Evaluations

```
RMSE tested by ../All_Data/ = 20.94822085498545  
Correlation tested by ../All_Data/ = 0.9918886223046026  
MAE = 10.161290322580646
```

test with 9-265 colonies



End