## File - train

D:\Anaconda\python.exe D:/PyTorch\_YOLOv4-u5\_preview/train.py

device='0', epochs=300, evolve=False, img\_size=[640, 640], multi\_scale=False, name="', noautoanchor=False, nosave=False, notest Namespace(adam=False, batch\_size=8, bucket=", cache\_images=False, cfg='models/voc2012.yaml', data='data/voc2012.yaml', =False, rect=False, resume=False, single\_cls=False, weights=")

Using CUDA device0\_CudaDeviceProperties(name='NVIDIA GeForce RTX 3060 Laptop GPU', total\_memory=6143MB)

Start Tensorboard with "tensorboard --logdir=runs", view at http://localhost:6006/

arguments	[3, 16, 3, 1]	[16, 32, 3, 2]	[32, 32]	[32, 64, 3, 2]	[64, 64, 1]	[64, 128, 3, 2]	[128, 128, 3]	[128, 256, 3, 2]	[256, 256, 3]	[256, 512, 3, 2]	[512, 512, 1]	[512, 256, 1]	[256, 128, 1, 1]	imple [None, 2, 'nearest']	[256, 128, 1, 1]	[1]	[256, 128, 1]	[128, 64, 1, 1]	imple [None, 2, 'nearest']
params module argu	464 models.common.Conv	4672 models.common.Conv	5216 models.common.Bottleneck	18560 models.common.Conv	19904 models.common.BottleneckCSP	73984 models.common.Conv	161152 models.common.BottleneckCSP	295424 models.common.Conv	641792 models.common.BottleneckCSP	1180672 models.common.Conv	1248768 models.common.BottleneckCSP	1904640 models.common.SPPCSP	33024 models.common.Conv	0 torch.nn.modules.upsampling.Upsample [None, 2, 'nearest']	33024 models.common.Conv	0 models.common.Concat	247296 models.common.BottleneckCSP2	8320 models.common.Conv	0 torch.nn.modules.upsampling.Upsample [None, 2, 'nearest']
from n param		$\vdash$	1 5216 m	1 18560 r	1 19904 r	1 73984 r	1 161152	1 295424	1 641792	1 1180672	-1 1 1248768	-1 1 1904640	-1 1 33024	-1 1 0 tor	8 1 33024 1		-1 1 247296	-1 1 8320 r	-1 1 0 to
fror	0 -1 1	1 -1	2 -1	3 -1	4 -1	5 -1	6 -1	7 -1	8 -1	9 -1	10 -1	11 -1	12 -1	13 -1	14 8	15 [-1, -2] 1	16 -1	17 -1	18 -1

				1]			1]							[6, [[12, 16, 19, 36, 40, 28], [36, 75, 76, 55, 72, 146], [142, 110, 192, 243, 459	
[128, 64, 1, 1] [1]	[128, 64, 1]	[64, 128, 3, 2]	[1]	[256, 128, 1]	[128, 256, 3, 2]	[1]	[512, 256, 1]	[256, 512, 3, 1]	[512, 33, 1, 1]	[128, 256, 3, 1]	[256, 33, 1, 1]	[64, 128, 3, 1]	[128, 33, 1, 1]	[[12, 16, 19, 36,	
6 1 8320 models.common.Conv [-1, -2] 1 0 models.common.Concat	-1 1 62208 models.common.BottleneckCSP2	-1 1 73984 models.common.Conv	[-1, 16] 1 0 models.common.Concat	-1 1 247296 models.common.BottleneckCSP2	-1 1 295424 models.common.Conv	[-1, 11] 1 0 models.common.Concat	-1 1 986112 models.common.BottleneckCSP2	-1 1 1180672 models.common.Conv	-1 1 16929 torch.nn.modules.conv.Conv2d	-6 1 295424 models.common.Conv	-1 1 8481 torch.nn.modules.conv.Conv2d	-11 1 73984 models.common.Conv	-1 1 4257 torch.nn.modules.conv.Conv2d	34 [-1, 31, 29] 1 0 models.yolo.Detect [6,	
19 20	21	22	23	24	25	26	27	28	29	30	31	32	33	34 [-	, 401]]]

Model Summary: 226 layers, 9.13e+06 parameters, 9.13e+06 gradients

Caching labels data \voc2012\train.txt (538 found, 0 missing, 0 empty, 0 duplicate, for 538 images): 100% | | 0/538 [00:00<?, ?it/s]Optimizer groups: 75 .bias, 79 conv.weight, 72 other [00:00<00:00, 7376.78it/s]

95/95 [00:00 Caching labels data \voc2012 \val.txt (95 found, 0 missing, 0 empty, 0 duplicate, for 95 images): 100%| <00:00, 7811.54it/s]

Analyzing anchors... Best Possible Recall (BPR) = 1.0000 Image sizes 640 train, 640 test Using 8 dataloader workers

Starting training for 300 epochs...

| 0/68 [00:00<?, ?it/s]D:\Anaconda\lib\site-packages\torch\cuda\memory.py:373: FutureWarning: torch.cuda. obj cls total targets img\_size memory\_cached has been renamed to torch.cuda.memory\_reserved Epoch gpu\_mem GloU warnings.warn(

12/12 [00:12<00:00, 1.06s/it] | 68/68 [00:22<00:00, 3.02it/s] R mAP@.5 mAP@.5:.95: 100%|| 0 0 0/299 1.52G 0.07057 0.04446 0.04462 0.1597 3 640: 100%| Images Targets

12/12 [00:11<00:00, 1.09it/s] 68/68 [00:15<00:00, 4.53it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 1/299 3.63G 0.06034 0.04606 0.04354 0.1499 4 640:100%| P R mAP@.5 m 0 0.00107 0.000183 Class Images Targets all 95 95 0

12/12 [00:11<00:00, 1.04it/s] 68/68 [00:15<00:00, 4.45it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100%|| all 95 95 0.0301 0.653 0.0707 0.0188 2/299 3.63G 0.05279 0.04393 0.04267 0.1394 4 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size

12/12 [00:10<00:00, 1.10it/s] [68/68 [00:14<00:00, 4.68it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100%|| all 95 95 0.0911 0.265 0.169 0.0463 3/299 3.63G 0.04817 0.0397 0.04051 0.1284 6 640: 100% Epoch gpu\_mem GloU obj cls total targets img\_size

12/12 [00:10<00:00, 1.11it/s] | 68/68 [00:14<00:00, 4.71it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 4/299 3.63G 0.04422 0.03999 0.04038 0.1246 8 640:100%| Class Images Targets all 95 95 0.163 0.617 0.318 0.134

[12/12 [00:10<00:00, 1.13it/s] 68/68 [00:14<00:00, 4.72it/s] 

12/12 [00:11<00:00, 1.08it/s] | 68/68 [00:14<00:00, 4.73it/s] 

12/12 [00:10<00:00, 1.13it/s] 68/68 [00:14<00:00, 4.72it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100%|| 7/299 3.63G 0.03852 0.03491 0.03717 0.1106 4 640:100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 0.318 0.412 0.182 95 0.116

12/12 [00:10<00:00, 1.12it/s] [68/68 [00:14<00:00, 4.81it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100%| all 95 95 0.263 0.115 0.454 0.195 8/299 3.63G 0.0372 0.03376 0.03519 0.1062 4 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:14<00:00, 4.84it/s] P R mAP@.5 mAP@.5:.95: 100% | 1 0.814 0.402 Epoch gpu\_mem GloU obj cls total targets img\_size 9/299 3.63G 0.03534 0.03011 0.0327 0.09815 6 640: 100%|| 0.814 0.402 95 0.14 Class Images Targets

Epoch gpu\_mem GloU obj cls total targets img\_size

ile - train

12/12 [00:11<00:00, 1.09it/s] [68/68 [00:14<00:00, 4.77it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | all 95 95 0.587 0.495 0.703 0.292 10/299 3.63G 0.03348 0.03197 0.03063 0.09608 5 640:100%|

12/12 [00:10<00:00, 1.12it/s] [68/68 [00:14<00:00, 4.65it/s] 

12/12 [00:10<00:00, 1.12it/s] 68/68 [00:14<00:00, 4.79it/s] 

12/12 [00:10<00:00, 1.14it/s] 68/68 [00:14<00:00, 4.80it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | all 95 95 0.333 0.0258 0.18 0.0656 Epoch gpu\_mem GloU obj cls total targets img\_size 13/299 3.63G 0.03526 0.02881 0.02783 0.09191 6 640: 100% |

12/12 [00:10<00:00, 1.18it/s] [68/68 [00:14<00:00, 4.84it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | all 95 95 0.357 1 0.801 0.481 Epoch gpu\_mem GloU obj cls total targets img\_size 14/299 3.63G 0.03402 0.02807 0.02599 0.08808 3 640: 100%|

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:14<00:00, 4.80it/s] 

total targets img_size 0.07958	total targets img_size 0.07549	total targets img_size 0.07456	cls total targets img_size 304 0.07262 6 640: 100%  68/68 [00:14<00:00, 4.83it/s] P R mAP@.5 mAP@.5:.95: 100%  12/12 [00:10<00:00, 1.13it/s] 0.0111 0.153 0.0288	cls total targets img_size 208 0.07276
			cls tc 2304 0.0 P 0.0111	ds tc 208 0.0 P
Epoch gpu_mem GIoU obj cls 16/299 3.63G 0.03097 0.02558 0.02302 Class Images Targets P all 95 95 0.432 1	Epoch gpu_mem GloU obj cls 17/299 3.63G 0.02834 0.02551 0.02164 Class Images Targets P all 95 95 0.44 1	Epoch gpu_mem GloU obj cls 18/299 3.63G 0.02835 0.02459 0.02162 Class Images Targets P all 95 95 0.507 0.593	Epoch gpu_mem GloU obj cls 19/299 3.63G 0.02578 0.02381 0.02304 Class Images Targets P all 95 95 0.167 0.011	Epoch         gpu_mem         GloU         obj         cls           20/299         3.63G         0.02672         0.02524         0.0208           Class         Images         Targets         P

Epoch gpu\_mem GloU obj cls total targets img\_size 21/299 3.63G 0.02583 0.02444 0.0198 0.07007 2 640:100%|

0.331 0.0993

0.0919

95 0.259

95

[68/68 [00:14<00:00, 4.83it/s]

1.15it/s]	1.15it/s]	1.16it/s]	 1.16it/s]	1.14it/s]	 1.16it/s]
12/12 [00:10<00:00, 1.15it/s]	68/68 [00:14<00:00, 4.82it/s]	68/68 [00:14<00:00, 4.84it/s]	68/68 [00:14<00:00, 4.79it/s]	:14<00:00, 4.83it/s] 12/12 [00:10<00:00, 1.14it/s]	68/68 [00:14<00:00, 4.82it/s]
12/12 [00	[00:14<00:0	[00:14<00:0	[00:14<00:	68/68 [00:14<00:00, 4.83it/s]	[00:14<00:
	89/89	89/89	39/89	89/89	39/89
.95: 100%	6	6	%	.95: 100%	%
mAP@.5 mAP@.5:.95: 100%  0.0096	tal targets img_size 6498 2 640: 100%	argets img_size 3 640: 100%  mAP@.5 mAP@.5:.95: 100%  0.616	tal targets img_size 3 640: 100%	argets img_size 4 640:100%  mAP@.5 mAP@.5:.95:100%	tal targets img_size 36686 6 640: 100%
mAP@.5 6 0.0096	total targets img_size ).06498 2 640: 10 R mAP@.5 mAP@ 0.994 0.772	total targets img_size ).06661 3 640: 10 R mAP@.5 mAP@ 0.99 0.616	total targets img_size 0.06301 3 640: 10 R mAP@.5 mAP@ 0.995 0.643	<del>-</del>	total targets img_size 0.06686 6 640: 10 R mAP@.5 mAP@.
R m 0.0436	to 0.0	$\sim$	to 0.(	0	to 0.0
Ъ	j cls 0.01797 P	i cls 0.01915 P	i cls 0.01595 P	j cls 0.01618 P	i cls 0.01701 ( P 0.775
ırgets 0	GloU obj 21 0.0228 0 Targets 95 0.504	J obj. 0.0231 0.582	J ob .02229 .rrgets 0.609	) ob 0.022 ( rrgets 0	GloU obj 33 0.02292   Targets 95 0.561
Images Targets 95 95 0	GloU 2421 0 es Ta	GloU 2436 0 es Ta	GIOU 2477 0. es Ta	GIoU 2209 C es Tar	GloU 2693 0. es Ta
Imag 95	h gpu_mem GloU ol 9 3.63G 0.02421 0.0228 Class Images Targets all 95 95 0.50	h gpu_mem GloU obj 9 3.63G 0.02436 0.0231 0 Class Images Targets all 95 95 0.582	n gpu_mem GloU obj ) 3.63G 0.02477 0.02229 ( Class Images Targets all 95 95 0.609	n gpu_mem GloU ol 9 3.63G 0.02209 0.022 Class Images Targets all 95 95 0	n gpu_mem GloU ok 3.63G 0.02693 0.02292 Class Images Targets all 95 95 0.56
Class all	Epoch gpu_mem GloU obj cls 22/299 3.63G 0.02421 0.0228 0.01797 Class Images Targets P all 95 95 0.504 1	Epoch gpu_mem GloU obj cls 23/299 3.63G 0.02436 0.0231 0.01915 Class Images Targets P all 95 95 0.582 1	Epoch gpu_mem GloU obj cls 24/299 3.63G 0.02477 0.02229 0.01595 Class Images Targets P all 95 95 0.609 1	Epoch gpu_mem GloU obj cls 25/299 3.63G 0.02209 0.022 0.01618 Class Images Targets P all 95 95 0 0	Epoch gpu_mem GloU obj cls 26/299 3.63G 0.02693 0.02292 0.01701 Class Images Targets P all 95 95 0.561 0.775
	Epoc 22/29	Epoc 23/29	Epoc 24/29	Epoc 25/29	Epoc 26/29

total targets img_size	total targets img_size	total targets img_size	total targets img_size	total targets img_size	total targets img_size
0.06112	0.0633	0.05872	0.05741	0.0584	0.05514
Epoch gpu_mem GloU obj cls to 27/299 3.63G 0.02432 0.02221 0.01459 0. Class Images Targets P all 95 95 0.214 0.0782	Epoch gpu_mem GloU obj cls tc 28/299 3.63G 0.02473 0.02238 0.01619 0 Class Images Targets P all 95 95 0.649 1	Epoch gpu_mem GloU obj cls to 29/299 3.63G 0.02198 0.02228 0.01447 0. Class Images Targets P all 95 95 0.722 1	Epoch gpu_mem GloU obj cls to 30/299 3.63G 0.02115 0.02197 0.01429 0. Class Images Targets P all 95 95 0.676 1	Epoch gpu_mem GloU obj cls tc 31/299 3.63G 0.02245 0.02124 0.01471 0 Class Images Targets P all 95 95 0.703 1	Epoch gpu_mem GloU obj cls tc 32/299 3.63G 0.02024 0.02097 0.01393 0. Class Images Targets P

0.744

0.995

69.0

92

95

all

| 12/12 [00:10<00:00, 1.15it/s] 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.15it/s] 68/68 [00:14<00:00, 4.81it/s] 68/68 [00:14<00:00, 4.86it/s] **68/68** [00:14<00:00, 4.79it/s] Epoch gpu\_mem GloU obj cls total targets img\_size
34/299 3.63G 0.02137 0.02183 0.01391 0.0571 3 640: 100%|

Class Images Targets P R mAP@.5 mAP@.5::95: 100%|
all 95 95 0.787 1 0.995 0.814 Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | all 95 95 0.634 0.854 0.851 0.681 R mAP@.5 mAP@.5::95: 100%|| 35/299 3.63G 0.02044 0.02083 0.01335 0.05463 2 640: 100%|| 33/299 3.63G 0.01915 0.02154 0.01137 0.05206 4 640:100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size total targets img\_size 0.995 0.807 cls Class Images Targets P all 95 95 0.757 1 Epoch gpu\_mem GloU obj

12/12 [00:10<00:00, 1.12it/s] [68/68 [00:14<00:00, 4.83it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | all 95 95 0.834 1 0.995 0.843 36/299 3.63G 0.02128 0.02108 0.01346 0.05582 6 640:100%1, Epoch gpu\_mem GIoU obj cls total targets img\_size

12/12 [00:10<00:00, 1.12it/s] 68/68 [00:14<00:00, 4.66it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 37/299 3.63G 0.02135 0.02226 0.01176 0.05538 3 640:100%| 0.995 0.773 Class Images Targets 95 0.848

Epoch gpu\_mem GloU obj cls total targets img\_size

0.05588 3 640: 100%   R mAP@.5 mAP@.5:.95: 100%   0.995 0.814  total targets img_size	0.05082 3 640: 100%   R mAP@.5 mAP@.5:.95: 100%   R mAP@.5 mAP@.5:.95   R mAP@.5:.95   R mAP@.5:.95   R mAP@.5 mAPW.5 mAPW.	0.01278 P	Epoch gpu_mem GloU obj cls total targets img_size 41/299 3.63G 0.01919 0.01958 0.01295 0.05172 7 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 42/299 3.63G 0.02184 0.02032 0.01181 0.05397 3 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 43/299 3.63G 0.01929 0.01995 0.01137 0.0506 6 640: 100%   68/68 [00:14<00:00, 4.73it/s]  Class Images Targets P R mAP@.5 mAP@.5:.95: 100%   12/12 [00:11<00:00, 1.09it/s]  all 95 95 0.79 1 0.991 0.811
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obj cls total targets img_size 7 0.01298 0.05345 3 640: 100%	obj cls total targets img_size 3 0.01086 0.05044 2 640:100%	obj cls total targets img_size 1 0.01056 0.04895 3 640: 100%	obj cls total targets img_size 4 0.0095 0.04676 4 640: 100%   68/68 [00:14<00:00, 4.57it/s] 5 P R mAP@.5 mAP@.5: 95: 100%   12/12 [00:10<00:00, 1.11it/s] 913 1 0.995 0.825	obj cls total targets img_size 6 0.01122 0.04901 5 640: 100%   68/68 [00:13<00:00, 4.86it/s] s P R mAP@.5 mAP@.5:.95: 100%   12/12 [00:10<00:00, 1.13it/s] 327 1 0.995 0.825	obj cls total targets img_size 2 0.009937 0.04625 3 640:100%
Epoch gpu_mem GIoU obj cls 44/299 3.63G 0.01989 0.02057 0.01298 Class Images Targets P all 95 95 0.827 1	Epoch         gpu_mem         GIoU         obj         cls           45/299         3.63G         0.01945         0.02013         0.01086           Class         Images         Targets         P           all         95         95         0.867         1	Epoch gpu_mem GIoU obj cls 46/299 3.63G 0.01908 0.01931 0.01056 Class Images Targets P all 95 95 0.748 0.652	Epoch         gpu_mem         GIoU         obj         cls           47/299         3.63G         0.01852         0.01874         0.0095           Class         Images         Targets         P           all         95         95         0.913         1	Epoch gpu_mem GIoU obj cls 48/299 3.63G 0.01933 0.01846 0.01122 Class Images Targets P all 95 95 0.827 1	Epoch gpu_mem GIoU obj cls 49/299 3.63G 0.01749 0.01882 0.009937

12/12 [00:11<00:00, 1.06it/s]	00:14<00:00, 4.60it/s] 12/12 [00:10<00:00, 1.11it/s]	00:14<00:00, 4.66it/s] [12/12 [00:11<00:00, 1.06it/s]	00:15<00:00, 4.50it/s]   12/12 [00:10<00:00, 1.15it/s]	0:14<00:00, 4.71it/s]   12/12 [00:10<00:00, 1.15it/s]	00:14<00:00, 4.80it/s]   12/12 [00:10<00:00, 1.11it/s]
1<00:0	, 4.60il 0<00:0	), 4.66i 1<00:0	, 4.50il 0<00:0	4.71it, 0<00:0	, 4.80it 0<00:0
2 [00:1	68/68 [00:14<00:00, 4.60it/s]	68/68 [00:14<00:00, 4.66it/s]	68/68 [00:15<00:00, 4.50it/s]	[68/68 [00:14<00:00, 4.71it/s]	68/68 [00:14<00:00, 4.80it/s]
12/1	§ [00:14	8 [00:1 <sup>,</sup>	\$ [00:15]	[00:14·	\$ [00:14]
	39/89	9/89	39/89	89/89	39/89
		-9			
5: 100%	1.5: 100%	5: 100%	1.5: 100%	5: 100%	5: 100%
mAP@.5 mAP@.5:.95: 100%  5 0.871	targets img_size 52 5 640: 100%   mAP@.5 mAP@.5:.95: 100%	argets img_size 7	tal targets img_size 05182	tal targets img_size 4914	targets img_size 52 6 640: 100%   mAP@.5 mAP@.5:.95: 100%   95 0.864
5 mA 71	img_s 64( 5 mA	img_s 64b 5 mA 5	img_s 64( 5 mA 31	img_s 640 5 mA 96	img_s 64( 5 mA
nAP@.5 0.871	rgets im 5 nAP@.5 0.804	rgets ir 4 nAP@.5 0.836	rgets im 5 nAP@.5 0.831	rgets im 4 nAP@.5 0.706	rgets im 6 nAP@.5 1 0.864
R r 0.995	total targets img_size 0.04652	total t 0.0483' R 0.995	total targets img_size 0.05182	total targets img_size 0.04914	total targets img_size 0.05032 6 640: 10 R mAP@.5 mAP@ 0.995 0.864
Р 1	cls 00912 P	Epoch gpu_mem GIoU obj cls 51/299 3.63G 0.01832 0.02018 0.009869 Class Images Targets P all 95 95 0.9 1	cls 01212 P		cls 01076 P
ets 0.934	Epoch gpu_mem GloU obj cls 50/299 3.63G 0.01763 0.01977 0.00912 Class Images Targets P all 95 95 0.872 1	obj :018 0.( ;ets 0.9	Epoch gpu_mem GloU obj cls 52/299 3.63G 0.01949 0.02021 0.01212 Class Images Targets P all 95 95 0.873 1	Epoch gpu_mem GloU obj cls 53/299 3.63G 0.0177 0.01911 0.01233 Class Images Targets P all 95 95 0.831 1	Epoch gpu_mem GloU obj cls 54/299 3.63G 0.01922 0.02035 0.01076 Class Images Targets P all 95 95 0.891 1
Class Images Targets all 95 95 0.934	Epoch gpu_mem GloU obj 50/299 3.63G 0.01763 0.01977 ( Class Images Targets all 95 95 0.872	h gpu_mem GloU ob 9 3.63G 0.01832 0.02018 Class Images Targets all 95 95 0.9	n gpu_mem GloU obj 9 3.63G 0.01949 0.02021 ( Class Images Targets all 95 95 0.873	n gpu_mem GloU obj 9 3.63G 0.0177 0.01911 C Class Images Targets all 95 95 0.831	n gpu_mem GloU obj n 3.63G 0.01922 0.02035 Class Images Targets all 95 95 0.891
Images 95	m ( 0.0176 nages 15	em ( 0.0183 nages 15	m ( 0.0194 nages 15	m ( 0.017; nages 15	mem (3 0.0192 Images 95
rII ss	эи_me .63G 9	эт_то .63G 9	эи_mc .63G 9	эи_me .63G 9	эи_me .63G 9
Class	och gj 99 3 Clas all	och gj 99 3 Clas all	och gj 99 3 Clas all	och gj 99 3 Clas all	och gpu <sub>.</sub> 99 3.63 Class all
	Epo 50/2	Epo 51/2	Epo 52/2	Epo 53/2	Epo 54/2

total targets img_size 0.04739	total targets img_size 0.04708	total targets img_size 0.04697	cls total targets img_size  86 0.04752 6 640: 100%  68/68 [00:14<00:00, 4.81it/s]  P R mAP@.5 mAP@.5:.95: 100%  12/12 [00:10<00:00, 1.12it/s]  1 0.995 0.838	total targets img_size 0.04803
	_		cls t 186 0.º P	cls t 1013 ( P 0.307
Epoch         gpu_mem         GloU         obj         cls           55/299         3.63G         0.01814         0.01846         0.01079           Class         Images         Targets         P           all         95         95         0.819         1	Epoch gpu_mem GIoU obj cls 56/299 3.63G 0.01811 0.01887 0.0101 Class Images Targets P all 95 95 0.912 1	Epoch gpu_mem GloU obj cls 57/299 3.63G 0.01808 0.01877 0.01012 Class Images Targets P all 95 95 0.674 0.777	Epoch gpu_mem GloU obj cls total targ 58/299 3.63G 0.01666 0.019 0.01186 0.04752 Class Images Targets P R mages Targets 1 0.995	Epoch gpu_mem GloU obj cls total targe 59/299 3.63G 0.01847 0.01943 0.01013 0.04803 Class Images Targets P R mA all 95 95 0.393 0.307 0.44

R mAP@.5 mAP@.5:.95: 100%||

Epoch gpu\_mem GloU obj cls total targets img\_size 60/299 3.63G 0.01615 0.01809 0.00923 0.04346 6 640: 100% |

Class Images Targets

[ 12/12 [00:10<00:00, 1.12it/s]

[68/68 [00:14<00:00, 4.74it/s]

all 95 95 0.783 0.917 0.933 0.728

| 12/12 [00:10<00:00, 1.13it/s] **■** 68/68 [00:14<00:00, 4.61it/s] R mAP@.5 mAP@.5::95: 100%|| 6 640: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.88 61/299 3.63G 0.01682 0.01907 0.009492 0.04538 Class Images Targets all 95 95 0.861

12/12 [00:10<00:00, 1.14it/s] [68/68 [00:14<00:00, 4.85it/s] Epoch gpu\_mem GloU obj cls total targets img\_size 62/299 3.63G 0.01776 0.01843 0.01107 0.04726 2 640: 100% | \_\_\_\_\_\_\_\_ Class Images Targets P R mAP@.5 mAP@.5::95: 100% | 0.995 0.847 Class Images Targets P all 95 95 0.881 1

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95: 100%|| 63/299 3.63G 0.0166 0.01651 0.008295 0.04141 3 640: 100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.858 Class Images Targets P all 95 95 0.826 1

12/12 [00:10<00:00, 1.13it/s] [68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 64/299 3.63G 0.01734 0.0185 0.008667 0.04451 2 640: 100%|| 0.995 0.854 Class Images Targets P all 95 95 0.89 1

12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 65/299 3.63G 0.01581 0.01819 0.009682 0.04369 3 640: 100%| 0.995 0.854 Class Images Targets 95 0.944

Epoch gpu\_mem GloU obj cls total targets img\_size

File - train

Epoch gpu_mem GloU obj cls total targets img_size 72/299 3.63G 0.01536 0.01708 0.007793 0.04024 4 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 73/299 3.63G 0.01773 0.01744 0.007866 0.04303 2 640: 100%	Epoch gpu_mem GIoU obj cls total targets img_size 74/299 3.63G 0.0155 0.01698 0.007543 0.04003 5 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 75/299 3.63G 0.01631 0.01789 0.008852 0.04305 4 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 76/299 3.63G 0.016 0.01737 0.008046 0.04142 2 640: 100%	Epoch gpu_mem GIoU obj cls total targets img_size 77/299 3.63G 0.01464 0.01691 0.007092 0.03864 2 640: 100%
Epoch gpu_mem 72/299 3.63G 0.0° Class Imag all 95	Epoch gpu_mem 73/299 3.63G 0.0 Class Imag	Epoch gpu_mem 74/299 3.63G 0.C Class Imag all 95	Epoch gpu_mem 75/299 3.63G 0.0 Class Imag all 95	Epoch gpu_mem 76/299 3.63G 0.0 Class Imag all 95	Epoch gpu_mem 77/299 3.63G 0.0

R mAP@.5 mAP@.5:.95: 100%  12/12 [00:10<00:00, 1.15it/s] 0.995 0.901	total targets img_size	total targets img_size	total targets img_size	total targets img_size	total targets img_size
	0.03839	0.04295	0.03947	0.04066	0.04026 5 640: 100%   68/68 [00:13<00:00, 4.89it/s]
Class Images Targets P all 95 95 0.889 1	Epoch gpu_mem GloU obj cls 78/299 3.63G 0.01465 0.01694 0.0068 C Class Images Targets P all 95 95 0.945 1	Epoch gpu_mem GloU obj cls 79/299 3.63G 0.01738 0.0171 0.008474 (Class Images Targets Pall 95 95 0.943 1	Epoch gpu_mem GloU obj cls 80/299 3.63G 0.01608 0.0162 0.007187 ( Class Images Targets P all 95 95 0.888 1	Epoch gpu_mem GloU obj cls 81/299 3.63G 0.01512 0.01722 0.008323 Class Images Targets P all 95 95 0.945 1	Epoch gpu_mem GloU obj cls total ta: 82/299 3.63G 0.01526 0.01709 0.007916 0.04026

[ 12/12 [00:10<00:00, 1.16it/s]

R mAP@.5 mAP@.5:.95:100%||

0.995 0.89

Class Images Targets all 95 95 0.944

total targets img_size	total targets img_size	total targets img_size	total targets img_size	total targets img_size	total targets img_size
0.04135 5 640: 100%	0.03773	0.03792	0.0377	0.03863	0.03861 3 640: 100%
Epoch gpu_mem GloU obj cls tc 83/299 3.63G 0.01709 0.01745 0.006811 0 Class Images Targets P all 95 95 0.944 1	Epoch gpu_mem GloU obj cls tc 84/299 3.63G 0.01439 0.01691 0.006431 0. Class Images Targets P all 95 95 0.944 1	Epoch gpu_mem GloU obj cls tc 85/299 3.63G 0.01462 0.01664 0.006668 0 Class Images Targets P all 95 95 0.945 1	Epoch gpu_mem GloU obj cls tc 86/299 3.63G 0.01546 0.01576 0.006477 C Class Images Targets P all 95 95 0.913 1	Epoch gpu_mem GloU obj cls tc 87/299 3.63G 0.01508 0.01669 0.006858 0 Class Images Targets P all 95 95 0.913 1	Epoch gpu_mem GloU obj cls tc 88/299 3.63G 0.01496 0.01617 0.007477 0

R mAP@.5 mAP@.5:.95: 100%|

Class Images Targets

[ 12/12 [00:10<00:00, 1.14it/s]

0.888

0.995

0.879

92

95

all

| 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.15it/s] 12/12 [00:10<00:00, 1.14it/s] 12/12 [00:10<00:00, 1.16it/s] [68/68 [00:13<00:00, 4.89it/s] 68/68 [00:13<00:00, 4.89it/s] [68/68 [00:13<00:00, 4.90it/s] [68/68 [00:13<00:00, 4.90it/s] | 68/68 [00:13<00:00, 4.88it/s] R mAP@.5 mAP@.5:.95: 100%|| 0.995 0.892 R mAP@.5 mAP@.5:.95: 100%| Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | all 95 95 0.945 1 0.995 0.896 R mAP@.5 mAP@.5::95: 100%|| 89/299 3.63G 0.01682 0.01644 0.00813 0.04138 8 640:100%| 91/299 3.63G 0.0137 0.0166 0.006504 0.03681 2 640:100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 93/299 3.63G 0.01589 0.01675 0.00676 0.0394 6 640: 100%|| 92/299 3.63G 0.0142 0.01633 0.00544 0.03597 4 640:100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size Epoch gpu\_mem GIoU obj cls total targets img\_size total targets img\_size 0.995 0.914 0.995 0.896 Class Images Targets P all 95 95 0.944 1 Epoch gpu\_mem GloU obj cls Class Images Targets P all 95 95 0.847 1 95 0.945 Class Images Targets

Epoch gpu\_mem GloU obj cls total targets img\_size

94/299 3.63G 0.0155 0.01631 0.006651 0.03846 3 640: 100%   68/68 [00:13<00:00, 4.87it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100%   12/12 [00:10<00:00, 1.14it/s] all 95 95 0.944 1 0.995 0.881	Epoch gpu_mem GloU obj cls total targets img_size 97/299 3.63G 0.01396 0.01635 0.006028 0.03634 6 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 98/299 3.63G 0.01324 0.01675 0.006319 0.03631 6 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 99/299 3.63G 0.01405 0.01589 0.007848 0.03778 3 640: 100%
	Epoch gpu_mem GloU obj cls total targets img_size 96/299 3.63G 0.01438 0.01656 0.005602 0.03654 3 640: 100%	total targets img_size  0.03654	total targets img_size  0.03654
Epoch gpu_mem GloU obj cls total targets img_size 95/299 3.63G 0.0134 0.01634 0.006531 0.03627 5 640: 100%		total targets img_size 0.03634 6 640: 100%   68/68   R mAP@.5 mAP@.5:.95: 100%   68/68   0.995 0.92	total targets img_size  0.03634

cls total targets img_size  5484 0.03419	cls total targets img_size 07242 0.03768 6 640: 100%	cls total targets img_size 06276 0.03677 5 640: 100%   68/68 [00:13<00:00, 4.86it/s] P R mAP@.5 mAP@.5:.95: 100%   12/12 [00:10<00:00, 1.14it/s] 1 0.995 0.904	Epoch gpu_mem GloU obj cls total targets img_size 103/299 3.63G 0.0137 0.01591 0.006299 0.03591 7 640: 100%	cls total targets img_size
total	total	total	total	total
0.03	0.03	0.03	0.03	
R	R	R	R	
0.9	0.9	0.9	0.9	
cls	cls	cls	cls	cls
005484	007242	)06276	06299	
P	P	P	P	
obj	obj	obj	obj	obj
587 0.(	632 0.(	608 0.(	591 0.0	
ets	ets	ets	ets	
937	).945	944	).945	
Epoch gpu_mem GloU obj cls total tar,	Epoch gpu_mem GloU obj cls total tar	Epoch gpu_mem GIoU obj cls total targets	Epoch gpu_mem GIoU obj	GloU obj
100/299 3.63G 0.01284 0.01587 0.005484 0.03419	101/299 3.63G 0.01412 0.01632 0.007242 0.03768	102/299 3.63G 0.01442 0.01608 0.006276 0.03677	03/299 3.63G 0.0137 0.01591 0.	
Class Images Targets P R m	Class Images Targets P R m	Class Images Targets P R mAP@	Class Images Targets	
all 95 95 0.937 1 0.995	all 95 95 0.945 1 0.995	all 95 95 0.944 1 0.995 0.9	all 95 95 0.945	
mem	mem	mem	mem	mem
G 0.012	G 0.01	G 0.01	G 0.0	
Images	Image	Image	Image	
95	95	95	95	
gpu_	gpu_]	gpu_1	gpu_1	[_nd8
3.63¢	3.63e	3.639	3.639	
Jlass	]Jass	Jass	Jass	
all	all	all	all	
Epoch 100/299 C	Epoch 101/299 C	Epoch 102/299 C	Epoch 103/299 C	Epoch gpu_mem

68/68 [00:13<00:00, 4.95it/s] 4 640: 100% cls total targets img\_size 105/299 3.63G 0.01287 0.01557 0.005334 0.03378 Epoch gpu\_mem GIoU obj

12/12 [00:10<00:00, 1.16it/s]

R mAP@.5 mAP@.5:.95: 100%||

0.995 0.923

95 0.945

Class Images Targets

104/299 3.63G 0.01424 0.01589 0.00501 0.03514 5 640:100%|

68/68 [00:13<00:00, 4.92it/s]

File - train

12/12 [00:10<00:00, 1.16it/s]	
R mAP@.5 mAP@.5:.95: 100%	0.995 0.897
Ь	$\vdash$
Targets	95 0.945
Images	
Class	all

12/12 [00:10<00:00, 1.16it/s] | 68/68 [00:13<00:00, 4.88it/s] R mAP@.5 mAP@.5:.95: 100%|| 106/299 3.63G 0.01346 0.01559 0.004427 0.03348 3 640:100%| cls total targets img\_size 0.995 0.869 Class Images Targets all 95 95 0.946 Epoch gpu\_mem GIoU obj

12/12 [00:10<00:00, 1.16it/s] 68/68 [00:13<00:00, 4.91it/s] R mAP@.5 mAP@.5:.95: 100%| 107/299 3.63G 0.01315 0.01598 0.005756 0.03489 5 640:100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.902 Class Images Targets 95 0.944

12/12 [00:10<00:00, 1.16it/s] | 68/68 [00:13<00:00, 4.92it/s] R mAP@.5 mAP@.5::95: 100%| 108/299 3.63G 0.01326 0.01535 0.005336 0.03394 3 640: 100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.923 Class Images Targets P all 95 95 0.921 1 95 0.921

12/12 [00:10<00:00, 1.16it/s] | 68/68 [00:13<00:00, 4.94it/s] R mAP@.5 mAP@.5:.95: 100%|| 109/299 3.63G 0.01475 0.01621 0.005787 0.03674 3 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.92 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:13<00:00, 4.91it/s] R mAP@.5 mAP@.5::95: 100%| 110/299 3.63G 0.01362 0.01558 0.004809 0.03402 2 640:100% cls total targets img\_size 0.995 0.924 Epoch gpu\_mem GloU obj 95 0.911 Class Images Targets

12/12 [00:10<00:00, 1.15it/s] 12/12 [00:10<00:00, 1.15it/s] 12/12 [00:10<00:00, 1.15it/s] | 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:13<00:00, 4.90it/s] | 68/68 [00:13<00:00, 4.92it/s] | 68/68 [00:13<00:00, 4.92it/s] | 68/68 [00:13<00:00, 4.97it/s] [68/68 [00:13<00:00, 4.92it/s] R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95:100%|| R mAP@.5 mAP@.5:.95:100%|| 113/299 3.63G 0.01315 0.01525 0.007401 0.03581 3 640: 100%| 115/299 3.63G 0.01282 0.01546 0.006245 0.03452 4 640: 100%|| 112/299 3.63G 0.01299 0.01555 0.005768 0.03431 5 640:100%| 111/299 3.63G 0.01391 0.01503 0.005575 0.03452 7 640:100%| 114/299 3.63G 0.0137 0.01531 0.006334 0.03535 4 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size Epoch gpu\_mem GIoU obj cls total targets img\_size Epoch gpu\_mem GloU obj cls total targets img\_size Epoch gpu\_mem GloU obj cls total targets img\_size cls total targets img\_size 0.995 0.8950.995 0.871 0.995 0.903 0.995 0.91 0.995 0.91 Class Images Targets P all 95 95 0.945 1 Class Images Targets P all 95 95 0.906 1 Class Images Targets P all 95 95 0.945 1 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU obj Class Images Targets 95 0.945 95 0.944

R mAP@.5 mAP@.5:.95: 100%||

116/299 3.63G 0.01392 0.01631 0.005825 0.03606 3 640:100%

Epoch gpu\_mem GloU obj

Class Images Targets

cls total targets img\_size

12/12 [00:10<00:00, 1.16it/s]

| 68/68 [00:13<00:00, 4.90it/s]

| 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.15it/s] [68/68 [00:13<00:00, 4.87it/s] | 68/68 [00:13<00:00, 4.96it/s] [68/68 [00:13<00:00, 4.92it/s] R mAP@.5 mAP@.5:.95: 100%| R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95: 100%|| 118/299 3.63G 0.01213 0.01504 0.004929 0.03209 6 640: 100%|| 120/299 3.63G 0.01307 0.01562 0.005734 0.03442 5 640: 100%|| 117/299 3.63G 0.01321 0.01548 0.004972 0.03366 6 640:100%| 119/299 3.63G 0.01172 0.01497 0.00489 0.03158 4 640:100%|| Epoch gpu\_mem GloU obj cls total targets img\_size Epoch gpu\_mem GIoU obj cls total targets img\_size Epoch gpu\_mem GIoU obj cls total targets img\_size cls total targets img\_size 0.994 0.869 0.995 0.908 0.8890.995 0.929 0.995 Class Images Targets P all 95 95 0.945 1 Class Images Targets all 95 95 0.786 Class Images Targets Epoch gpu\_mem GloU obj 95 0.934 0.925 95 95 all

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:13<00:00, 4.92it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 121/299 3.63G 0.01361 0.0162 0.005592 0.0354 4 640: 100%|| 0.995 0.892 95 0.945 Class Images Targets

12/12 [00:10<00:00, 1.16it/s]

R mAP@.5 mAP@.5:.95: 100%||

0.995 0.916

Class Images Targets P all 95 95 0.945 1

[68/68 [00:13<00:00, 4.90it/s]

total targets img\_size cls obj Epoch gpu\_mem GloU

File - train

68/68 [00:13<00:00, 4.90it/s]	12/12 [00:10<00:00, 1.15it/s]		
640: 100%	R mAP@.5 mAP@.5:.95: 100%		
8	AP@.5	0.905	•
0.03578	R m/	0.995 0.905	
0.00642 0.03578	Ъ	T	,
	rgets	95 0.945	
125 0	, Ta	92	;
3.63G 0.01425 0.01512	Images Targets	95	
22/299 3.63	Class	all	
122/2			ļ

12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:13<00:00, 4.92it/s] R mAP@.5 mAP@.5:.95: 100%|| 123/299 3.63G 0.01284 0.01505 0.005163 0.03306 3 640:100%| cls total targets img\_size 0.995 0.891 Class Images Targets all 95 95 0.937 obj Epoch gpu\_mem GloU

12/12 [00:10<00:00, 1.15it/s] [68/68 [00:13<00:00, 4.92it/s] R mAP@.5 mAP@.5::95: 100%|| 124/299 3.63G 0.01288 0.01538 0.00538 0.03364 3 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.906 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:13<00:00, 4.90it/s] R mAP@.5 mAP@.5:.95: 100%|| 125/299 3.63G 0.01403 0.01597 0.005392 0.03539 8 640: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.921 Class Images Targets P all 95 95 0.945 1 95 0.945

12/12 [00:10<00:00, 1.16it/s] 68/68 [00:13<00:00, 4.95it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100%|| all 95 95 0.945 1 0.995 0.892 Epoch gpu\_mem GloU obj cls total targets img\_size 126/299 3.63G 0.0121 0.0147 0.006027 0.03283 5 640: 100%||

12/12 [00:10<00:00, 1.16it/s] 68/68 [00:13<00:00, 4.90it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 127/299 3.63G 0.01309 0.01488 0.00497 0.03293 4 640: 100%| 0.995 0.918 Class Images Targets P all 95 95 0.944 1

total targets img_size 0.03198	total targets img_size 0.03065	total targets img_size 0.03278	cls total targets img_size 5286 0.03169 6 640: 100%   68/68 [00:13<00:00, 4.98it/s] P R mAP@.5 mAP@.5:.95: 100%   68/68 [00:12<00:00, 1.15it/s] 1 0.995 0.952	total targets img_size 0.03078
total 3 0.03 R R 0.9	tota 2 0.0 R 0.	tota 7 0.0 R 0.	total 6 0.03 R 0.9	0.
cls	cls	cls	cls	cls
004723	.003902	.004727	.00528	004461
P	P	P	P	P
Epoch gpu_mem GIoU obj cls	Epoch gpu_mem GloU obj cls total targe	Epoch gpu_mem GloU obj cls total tar	Epoch gpu_mem       GloU       obj       cls       total tar         131/299       3.63G       0.01209       0.01432       0.005286       0.03169         Class Images Targets P R m         all       95       95       0.945       1       0.995	Epoch gpu_mem GloU obj cls
128/299 3.63G 0.01215 0.0151 0.004723	129/299 3.63G 0.01196 0.01479 0.003902 0.03065	130/299 3.63G 0.01287 0.01518 0.004727 0.03278		132/299 3.63G 0.0116 0.01472 0.004461
Class Images Targets P	Class Images Targets P R mA	Class Images Targets P R m		Class Images Targets P
all 95 95 0.863 1	all 95 95 0.945 1 0.995	all 95 95 0.945 1 0.995		all 95 95 0.914 1
GloU	GIoU	GloU	GIoU	GloU
1215 (	1196 0	1287 0	1209 0	116 0.1
es Ta	es Ta	8s Ta	es Ta	es Ta
95	95	95	95	95
n gpu_mem GloU ol	n gpu_mem GloU ob	n gpu_mem GloU ol	n gpu_mem GloU ol	n gpu_mem GloU ol
9 3.63G 0.01215 0.0151	9 3.63G 0.01196 0.01479	9 3.63G 0.01287 0.01518	9 3.63G 0.01209 0.01432	9 3.63G 0.0116 0.01472
Class Images Targets	Class Images Targets	Class Images Targets	Class Images Targets	Class Images Targets
all 95 95 0.86	all 95 95 0.94	all 95 95 0.94	all 95 95 0.94	all 95 95 0.91
gpu_	gpu_	gpu_	gpu_	gpu_
3.63	3.63	3.63	3.63	3.63
Class	Class	Class	Class	Class
all	all	all	all	all
Epoch	Epoch	Epoch	Epoch	Epoch
128/299	129/299	130/299	131/299	132/299

Epoch gpu\_mem GloU obj cls total targets img\_size 133/299 3.63G 0.01321 0.01441 0.005707 0.03333 2 640: 100% |

[68/68 [00:13<00:00, 4.92it/s]

R mAP@.5 mAP@.5:.95: 100%  12/12 [00:10<00:00, 1.15it/s] 0.995 0.913	cls total targets img_size	cls total targets img_size	total targets img_size	total targets img_size
	5301 0.03245	)4664 0.03092 2 640: 100%	0.03327	0.0334
Class Images Targets P all 95 95 0.945 1	Epoch gpu_mem GloU obj cls total tar 134/299 3.63G 0.01231 0.01484 0.005301 0.03245 Class Images Targets P R m all 95 95 0.9 1 0.995	Epoch gpu_mem GloU obj cls total tar 135/299 3.63G 0.01162 0.01464 0.004664 0.03092 Class Images Targets P R m all 95 95 0.945 1 0.995	Epoch gpu_mem GloU obj cls 136/299 3.63G 0.01225 0.01471 0.00631 Class Images Targets P all 95 95 0.945 1	Epoch gpu_mem GloU obj cls 137/299 3.63G 0.01255 0.01518 0.00567 Class Images Targets P all 95 95 0.945 1

[12/12 [00:10<00:00, 1.12it/s]

R mAP@.5 mAP@.5:.95:100%||

0.995 0.914

95 0.945

95

Class Images Targets

Epoch gpu\_mem GloU obj cls total targets img\_size 138/299 3.63G 0.01236 0.01429 0.003988 0.03064 4 640: 100% |

[68/68 [00:14<00:00, 4.83it/s]

total targets img_size	total targets img_size	cls total targets img_size	total targets img_size	total targets img_size
0.02989	0.0308	)6069 0.03318	0.03326	0.02976
	cls to )5151 ( P	ls tc 069 (	ls to 639 (	cls tc 3976 0. P
bj c	bj c	5j c	bj ci	bj c.
0.003	7 0.005	1 0.006	3 0.005	0.0039
P	P	P	P	P
Epoch gpu_mem GloU obj cls	Epoch gpu_mem GloU obj cls total targ	Epoch         gpu_mem         GloU         obj         cls         total         tar,           141/299         3.63G         0.01237         0.01474         0.006069         0.03318           Class         Images         Targets         P         R         m           all         95         95         0.945         1         0.995	Epoch gpu_mem GIoU obj cls total targets	Epoch gpu_mem GloU obj cls
139/299 3.63G 0.0123 0.01407 0.00353	140/299 3.63G 0.01148 0.01417 0.005151 0.0308		142/299 3.63G 0.01234 0.01528 0.005639 0.03326	143/299 3.63G 0.0118 0.01398 0.003976
Class Images Targets P	Class Images Targets P R m.		Class Images Targets P R mAP@	Class Images Targets P
all 95 95 0.945 1	all 95 95 0.945 1 0.995		all 95 95 0.945 1 0.995 0.	all 95 95 0.945 1

R mAP@.5 mAP@.5:.95: 100%||

Epoch gpu\_mem GloU obj cls total targets img\_size 144/299 3.63G 0.01209 0.01472 0.003951 0.03076 7 640: 100% |

Class Images Targets

[12/12 [00:10<00:00, 1.11it/s]

[68/68 [00:13<00:00, 4.88it/s]

| 12/12 [00:10<00:00, 1.14it/s] [68/68 [00:13<00:00, 4.87it/s] R mAP@.5 mAP@.5:.95: 100%|| 145/299 3.63G 0.01079 0.01409 0.004501 0.02938 6 640:100%| cls total targets img\_size 0.924 0.995 0.912 0.995 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU obj 0.945 95 95 all

12/12 [00:10<00:00, 1.15it/s] [68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95: 100%|| 146/299 3.63G 0.01143 0.0147 0.003994 0.03012 8 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.921 Class Images Targets all 95 95 0.945

12/12 [00:10<00:00, 1.16it/s] 68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95: 100%|| 147/299 3.63G 0.01163 0.0148 0.005173 0.0316 6 640:100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.935 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95: 100%|| 148/299 3.63G 0.01148 0.01388 0.004734 0.03009 6 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.929 Class Images Targets P all 95 95 0.927 1

12/12 [00:10<00:00, 1.17it/s] 68/68 [00:13<00:00, 4.86it/s] R mAP@.5 mAP@.5::95:100%| 149/299 3.63G 0.01241 0.01391 0.005215 0.03153 6 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.938 Class Images Targets 95 0.945

Epoch gpu\_mem GIoU obj cls total targets img\_size

File - train

[68/68 [00:14<00:00, 4.84it/s]	12/12 [00:10<00:00, 1.15it/s]	
640: 100%	. mAP@.5 mAP@.5:.95: 100%	
3	AP@.5	0.929
.005542 0.03256	R m	0.995
0.005542	Ъ	П
3.63G 0.01229 0.01473 0.0	<b>Targets</b>	95 0.945
1229	-	
3G 0.0	Images	92
	Class	all
150/299		

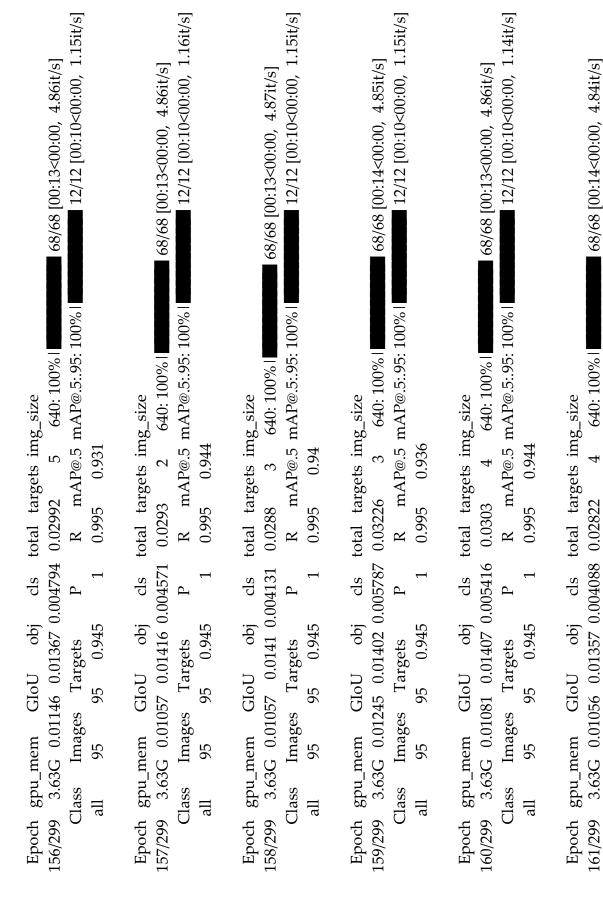
12/12 [00:10<00:00, 1.14it/s] | 68/68 [00:13<00:00, 4.88it/s] R mAP@.5 mAP@.5:.95: 100%|| 151/299 3.63G 0.01265 0.01448 0.004851 0.03198 5 640:100%| cls total targets img\_size 0.995 0.914 Class Images Targets all 95 95 0.945 obj Epoch gpu\_mem GloU

12/12 [00:10<00:00, 1.14it/s] 68/68 [00:13<00:00, 4.86it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 152/299 3.63G 0.01208 0.01475 0.004472 0.0313 4 640: 100% | 0.995 0.933 Class Images Targets all 95 95 0.945

12/12 [00:10<00:00, 1.14it/s] 68/68 [00:13<00:00, 4.88it/s] R mAP@.5 mAP@.5:.95: 100%|| 153/299 3.63G 0.0107 0.01361 0.004848 0.02916 2 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size Class Images Targets P R mAP@.5 all 95 95 0.945 1 0.995 0.931

12/12 [00:10<00:00, 1.14it/s] [68/68 [00:13<00:00, 4.87it/s] R mAP@.5 mAP@.5:.95:100%|| 154/299 3.63G 0.01081 0.01409 0.004609 0.0295 8 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.921 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.17it/s] 68/68 [00:13<00:00, 4.87it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 155/299 3.63G 0.01141 0.01369 0.003885 0.02899 5 640:100%| 0.995 0.931 Class Images Targets 95 0.944



| 12/12 [00:10<00:00, 1.16it/s]

R mAP@.5 mAP@.5:.95: 100%||

0.995 0.936

95 0.945

Class Images Targets

12/12 [00:10<00:00, 1.15it/s] 12/12 [00:10<00:00, 1.14it/s] 12/12 [00:10<00:00, 1.15it/s] 12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:13<00:00, 4.88it/s] | 68/68 [00:14<00:00, 4.85it/s] | 68/68 [00:14<00:00, 4.84it/s] | 68/68 [00:13<00:00, 4.92it/s] R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5::95: 100%|| 169/299 3.63G 0.01097 0.01351 0.003367 0.02784 2 640: 100%|| 170/299 3.63G 0.01012 0.01331 0.003406 0.02684 3 640: 100%|| 168/299 3.63G 0.01048 0.01442 0.003015 0.02792 3 640:100%| 640:100%Epoch gpu\_mem GIoU obj cls total targets img\_size Epoch gpu\_mem GIoU obj cls total targets img\_size Epoch gpu\_mem GloU obj cls total targets img\_size Epoch gpu\_mem GloU obj cls total targets img\_size cls total targets img\_size 0.995 0.946 0.995 0.934 167/299 3.63G 0.01135 0.0133 0.003579 0.02823 5 0.995 0.948 0.995 0.941 Class Images Targets P all 95 95 0.945 1 Class Images Targets P all 95 95 0.946 1 Class Images Targets P all 95 95 0.945 1 obj 95 0.945 95 0.945 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU

12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:14<00:00, 4.84it/s] R mAP@.5 mAP@.5:.95: 100%|| 172/299 3.63G 0.01058 0.01363 0.003369 0.02758 8 640:100%| cls total targets img\_size Epoch gpu\_mem GloU obj Class Images Targets

12/12 [00:10<00:00, 1.14it/s]

R mAP@.5 mAP@.5:.95:100%||

0.995 0.933

171/299 3.63G 0.01005 0.0133 0.003196 0.02655 6 640:100%

Class Images Targets P all 95 95 0.945 1

[68/68 [00:13<00:00, 4.88it/s]

| 12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:14<00:00, 4.84it/s] R mAP@.5 mAP@.5::95: 100%|| 173/299 3.63G 0.01081 0.01334 0.003867 0.02802 6 640:100%| cls total targets img\_size 0.9440.995 0.953 0.995 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU obj 0.945 95 95 all

12/12 [00:10<00:00, 1.15it/s] [68/68 [00:13<00:00, 4.87it/s] 

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:13<00:00, 4.93it/s] R mAP@.5 mAP@.5:.95: 100%|| 175/299 3.63G 0.01013 0.01273 0.0033 0.02617 2 640: 100% | Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.944 Class Images Targets P all 95 95 0.945 1 95 0.945

12/12 [00:10<00:00, 1.16it/s] [68/68 [00:13<00:00, 4.86it/s] R mAP@.5 mAP@.5:.95: 100%|| 176/299 3.63G 0.01075 0.01343 0.003446 0.02762 6 640: 100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.937 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:13<00:00, 4.90it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 177/299 3.63G 0.01011 0.01382 0.00437 0.0283 5 640:100%| 0.995 0.916 Class Images Targets 95 0.938

Epoch gpu\_mem GIoU obj cls total targets img\_size

cls total targets img_size 1035 0.02726 5 640: 100%   68/68 [00:13<00:00, 4.95it/s] P R mAP@.5 mAP@.5:.95: 100%   12/12 [00:10<00:00, 1.16it/s] 1 0.995 0.944	cls total targets img_size 4654 0.02807 5 640: 100%  68/68 [00:13<00:00, 4.87it/s] P R mAP@.5 mAP@.5:.95: 100%  12/12 [00:10<00:00, 1.16it/s] 1 0.995 0.954	cls total targets img_size 2902 0.02577	cls total targets img_size 0316 0.02486 6 640: 100%	cls total targets img_size 3624 0.02782	cls total targets img_size 3604 0.02744 5 640:100%
Epoch gpu_mem GloU obj cls 184/299 3.63G 0.01098 0.01278 0.0035 Class Images Targets P all 95 95 0.944 1	Epoch gpu_mem GloU obj cls t 185/299 3.63G 0.01034 0.01308 0.004654 Class Images Targets P all 95 95 0.944 1	Epoch gpu_mem GloU obj cls t 186/299 3.63G 0.01029 0.01257 0.002902 Class Images Targets P all 95 95 0.946 1	Epoch gpu_mem GloU obj cls total targ 187/299 3.63G 0.009012 0.01269 0.00316 0.02486 Class Images Targets P R m <sup>A</sup> all 95 95 0.945 1 0.995	Epoch gpu_mem GloU obj cls t 188/299 3.63G 0.01122 0.01297 0.003624 Class Images Targets P all 95 95 0.945 1	Epoch gpu_mem GIoU obj cls 189/299 3.63G 0.01113 0.0127 0.003604

File - train

15it/s]		
12/12 [00:10<00:00, 1.		
mAP@.5 mAP@.5:.95: 100%	).995 0.951	
R	0.9	
Ъ	$\vdash$	
Targets	0.945	
Images	92	
Class	all	

12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:13<00:00, 4.89it/s] R mAP@.5 mAP@.5:.95: 100%|| 190/299 3.63G 0.01023 0.01305 0.003114 0.02639 3 640:100%| cls total targets img\_size 0.995 0.946 Epoch gpu\_mem GloU obj Class Images Targets all 95 95 0.945

12/12 [00:10<00:00, 1.15it/s] 68/68 [00:13<00:00, 4.90it/s] R mAP@.5 mAP@.5::95: 100%|| 191/299 3.63G 0.01006 0.01285 0.002931 0.02584 7 640: 100%1 Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.948 Class Images Targets 95 0.945

12/12 [00:10<00:00, 1.16it/s] | 68/68 [00:13<00:00, 4.96it/s] R mAP@.5 mAP@.5::95: 100%|| 192/299 3.63G 0.01001 0.01255 0.002623 0.02518 5 640:100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size Class Images Targets P R mAP@.5 1 all 95 95 0.945 1 0.995 0.948

12/12 [00:10<00:00, 1.15it/s] [68/68 [00:13<00:00, 4.89it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size 193/299 3.63G 0.009605 0.01279 0.002295 0.02469 5 640: 100% | 0.995 0.957 Targets P 95 0.945 1 Class Images Targets

12/12 [00:10<00:00, 1.16it/s] 68/68 [00:13<00:00, 4.94it/s] R mAP@.5 mAP@.5::95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 194/299 3.63G 0.01015 0.01256 0.003296 0.026 3 640:100%| 0.995 0.946 Class Images Targets 95 0.945

12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.16it/s] 12/12 [00:10<00:00, 1.14it/s] 12/12 [00:10<00:00, 1.16it/s] | 68/68 [00:13<00:00, 4.95it/s] [68/68 [00:13<00:00, 4.96it/s] | 68/68 [00:13<00:00, 4.95it/s] | 68/68 [00:13<00:00, 4.88it/s] 68/68 [00:13<00:00, 4.88it/s] Epoch gpu\_mem GloU obj cls total targets img\_size
197/299 3.63G 0.009942 0.01202 0.003405 0.02537 3 640:100%|

Class Images Targets P R mAP@.5 mAP@.5:.95:100%|

all 95 95 0.945 1 0.995 0.954 R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95: 100%|| R mAP@.5 mAP@.5:.95:100%|| 198/299 3.63G 0.009541 0.0121 0.002637 0.02428 5 640: 100%|| 195/299 3.63G 0.01039 0.01312 0.002997 0.0265 6 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 199/299 3.63G 0.01035 0.01236 0.0033 0.02601 4 640: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size cls total targets img\_size 0.995 0.936 0.995 0.924 0.995 0.949 Class Images Targets P all 95 95 0.945 1 Class Images Targets P all 95 95 0.945 1 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU obj

R mAP@.5 mAP@.5:.95: 100%||

200/299 3.63G 0.008918 0.0122 0.003934 0.02505 3 640:100%|

Epoch gpu\_mem GIoU obj

Class Images Targets

cls total targets img\_size

12/12 [00:10<00:00, 1.16it/s]

| 68/68 [00:13<00:00, 4.95it/s]

| 12/12 [00:10<00:00, 1.15it/s] | 68/68 [00:13<00:00, 4.91it/s] cls total targets img\_size 0.917 0.995 0.951 0.995 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU obj 0.945 92 95 all

12/12 [00:10<00:00, 1.16it/s] [68/68 [00:13<00:00, 4.96it/s] R mAP@.5 mAP@.5::95: 100%|| 202/299 3.63G 0.008787 0.0132 0.003402 0.02539 4 640: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.931 Class Images Targets all 95 95 0.946

12/12 [00:10<00:00, 1.15it/s] [68/68 [00:13<00:00, 4.90it/s] Epoch gpu\_mem GloU obj cls total targets img\_size

12/12 [00:10<00:00, 1.16it/s] [68/68 [00:13<00:00, 4.91it/s] R mAP@.5 mAP@.5::95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 204/299 3.63G 0.009034 0.01271 0.002519 0.02426 3 640: 100%|| Class Images Targets P R mAP@.5 1 all 95 95 0.945 1 0.995 0.959

12/12 [00:10<00:00, 1.15it/s] [68/68 [00:13<00:00, 4.97it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 205/299 3.63G 0.009394 0.01233 0.002121 0.02384 3 640:100%1 0.995 0.954 Class Images Targets 95 0.945

	16it/s]			
4.93it/s]	00:00, 1.			4.89it/s]
[68/68 [00:13<00:00, 4.93it/s]	$\blacksquare$ 12/12 [00:10<00:00, 1.16it/s]			68/68 [00:13<00:00, 4.89it/s]
0] 89/89	12			0] 89/89
	R mAP@.5 mAP@.5:.95: 100%			
%001	5:.95:			%001
640: 100%	mAP@.		g_size	640:
$\mathcal{C}$	5.00	.944	ts im	$\infty$
2528	mAI	0.995 0.944	cls total targets img_size	2337
0.0	R	0.9	total	0.0
0.003368	Ъ	$\vdash$	cls	0.002481
.01266	rgets	95 0.945	obj	.01236
261 0	Ta	95	GIoU	529 0
G 0.009	Images Targets	95	Epoch gpu_mem GIoU obj	207/299 3.63G 0.008529 0.01236 0.002481 0.02337 8 640: 100%
3.63	Class	all	nd8	3.63
206/299 3.63G 0.009261 0.01266 0.003368 0.02528	Ü	ισ	Epoch	207/299

12/12 [00:10<00:00, 1.15it/s]

R mAP@.5 mAP@.5:.95: 100%||

Images Targets

Class

0.995 0.939

12/12 [00:10<00:00, 1.16it/s] [68/68 [00:13<00:00, 4.90it/s] Epoch gpu\_mem GloU obj cls total targets img\_size  $0.995 \quad 0.955$ 95 0.945

12/12 [00:10<00:00, 1.16it/s] [68/68 [00:13<00:00, 4.90it/s] R mAP@.5 mAP@.5::95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 209/299 3.63G 0.008341 0.01202 0.002767 0.02312 7 640: 100% | P R mAP@.5 1 1 0.995 0.952 Class Images Targets 95 0.945

12/12 [00:10<00:00, 1.16it/s] 68/68 [00:13<00:00, 4.95it/s] R mAP@.5 mAP@.5:.95:100%|| 210/299 3.63G 0.009561 0.01274 0.00297 0.02527 3 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.945 Class Images Targets 95 0.945

12/12 [52:28<00:00, 262.39s/it] 68/68 [00:13<00:00, 4.99it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 211/299 3.63G 0.009442 0.01251 0.002805 0.02476 5 640:100%| 0.995 0.96 Class Images Targets 95 0.945

Epoch gpu_mem GIoU obj cls to  Class Images Targets P  all 95 95 0.945 1  Epoch gpu_mem GIoU obj cls to  Class Images Targets P  Class Images Targets P  all 95 95 0.945 1  Epoch gpu_mem GIoU obj cls to  all 95 95 0.945 1  Class Images Targets P  all 95 95 0.045 1  Class Images Targets P  Class Images Targets P  Epoch gpu_mem GIoU obj cls to  Class Images Targets P  Class Images Targets P  all 95 95 0.946 1	Epoch gpu_mem GloU obj cls total targets img_size 212/299 3.63G 0.00855 0.01208 0.002656 0.02329 4 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 213/299 3.63G 0.009051 0.01201 0.002111 0.02317 5 640: 100%	Epoch gpu_mem GIoU obj cls total targets img_size 214/299 3.63G 0.00905 0.01225 0.002652 0.02395 5 640: 100%
GloU obj 00855 0.01208 0. 5es Targets 95 0.945 GloU obj 95 0.945 GloU obj 0905 0.01225 0. 5es Targets 95 0.946	cls to 002656 0 P	cls to .002111 ( P	cls to 002652 0 P 1
	GIoU obj 0855 0.01208 0.0; es Targets 95 0.945	GloU obj 19051 0.01201 0. es Targets 95 0.945	GloU obj 0905 0.01225 0.0 es Targets 95 0.946

12/12 [00:11<00:00, 1.04it/s] [68/68 [00:14<00:00, 4.72it/s] R mAP@.5 mAP@.5::95: 100%| 215/299 3.63G 0.008643 0.01166 0.001778 0.02209 3 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.94 Class Images Targets 95 0.946

12/12 [00:11<00:00, 1.04it/s] [68/68 [00:14<00:00, 4.63it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 216/299 3.63G 0.009421 0.01223 0.003319 0.02497 4 640: 100%| 0.995 0.942 Class Images Targets 95 0.945

68/68 [00:14<00:00, 4.77it/s] 6 640: 100% cls total targets img\_size 217/299 3.63G 0.009816 0.01221 0.002609 0.02463 Epoch gpu\_mem GloU obj

Epoch gpu_mem GloU obj cls total targets img_size  Class Images Targets P R mAP@.5 mAP@.5:.95: 100%	all 95 95 0.945 1 0.995 0.95  Epoch gpu_mem GloU obj cls total targets img_size 220/299 3.63G 0.008391 0.01186 0.002222 0.02247 6 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 221/299 3.63G 0.008362 0.01201 0.0024 0.02278 7 640: 100%	Epoch gpu_mem GloU obj cls total targets img_size 222/299 3.63G 0.00882 0.01195 0.002388 0.02316 1 640: 100%
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12/12 [00:10<00:00, 1.13it/s] | 68/68 [00:14<00:00, 4.83it/s| R mAP@.5 mAP@.5:.95: 100%| 223/299 3.63G 0.008839 0.01173 0.002508 0.02307 2 640:100%| cls total targets img\_size 0.995 0.957 Class Images Targets all 95 95 0.946 Epoch gpu\_mem GloU obj

12/12 [00:10<00:00, 1.12it/s] | 68/68 [00:14<00:00, 4.75it/s] Epoch gpu\_mem GloU obj cls total targets img\_size 224/299 3.63G 0.009073 0.01159 0.002305 0.02297 5 640:100%| Class Images Targets P R mAP@.5 mAP@.5::95:100%| all 95 95 0.945 1 0.995 0.949

12/12 [00:11<00:00, 1.09it/s] | 68/68 [00:14<00:00, 4.74it/s] Epoch gpu\_mem GloU obj cls total targets img\_size
225/299 3.63G 0.009949 0.01166 0.002988 0.02459 5 640:100%|

Class Images Targets P R mAP@.5 mAP@.5:.95:100%|

all 95 95 0.945 1 0.995 0.952

12/12 [00:11<00:00, 1.07it/s] [68/68 [00:14<00:00, 4.74it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100%|| all 95 95 0.946 1 0.995 0.962 226/299 3.63G 0.008835 0.01159 0.002619 0.02305 3 640:100%|| Epoch gpu\_mem GloU obj cls total targets img\_size

12/12 [00:11<00:00, 1.09it/s] [68/68 [00:14<00:00, 4.77it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 227/299 3.63G 0.008665 0.01164 0.002507 0.02281 3 640: 100% | 0.995 0.958 P 1 Class Images Targets 95 0.945

12/12 [00:10<00:00, 1.11it/s] 68/68 [00:14<00:00, 4.69it/s] R mAP@.5 mAP@.5::95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 228/299 3.63G 0.008842 0.01211 0.002428 0.02338 5 640: 100%|| Epoch gpu\_mem GloU obj Class Images Targets

12/12 [00:11<00:00, 1.09it/s] | 68/68 [00:14<00:00, 4.55it/s] R mAP@.5 mAP@.5:.95: 100%|| 229/299 3.63G 0.00835 0.01186 0.002638 0.02284 3 640:100%| cls total targets img\_size 0.959 0.995 0.957 0.995 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU obj 0.946 95 95 all

12/12 [00:10<00:00, 1.11it/s] [68/68 [00:14<00:00, 4.65it/s] R mAP@.5 mAP@.5:.95: 100%| 230/299 3.63G 0.008784 0.01183 0.003563 0.02418 4 640: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.949 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.12it/s] [68/68 [00:14<00:00, 4.67it/s] 231/299 3.63G 0.007855 0.01164 0.001918 0.02141 4 640: 100% | Class Images Targets P R mAP@.5 mAP@.5::95: 100% | all 95 95 0.945 1 0.995 0.962 Epoch gpu\_mem GIoU obj cls total targets img\_size

12/12 [00:10<00:00, 1.11it/s] [68/68 [00:14<00:00, 4.73it/s] R mAP@.5 mAP@.5:.95:100%|| 232/299 3.63G 0.007927 0.01225 0.001805 0.02198 6 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size Class Images Targets P R mAP@.5 all 95 95 0.946 1 0.995 0.95

12/12 [00:10<00:00, 1.10it/s] [68/68 [00:14<00:00, 4.69it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 233/299 3.63G 0.007677 0.01173 0.002263 0.02167 8 640: 100% | 0.995 0.947 Class Images Targets 95 0.945



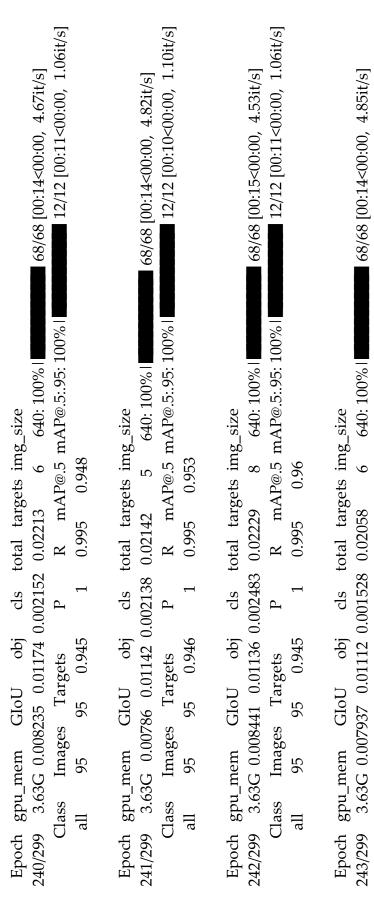
12/12 [00:10<00:00, 1.10it/s] [68/68 [00:14<00:00, 4.68it/s] 0.995 0.952 Class Images Targets all 95 95 0.946

12/12 [00:11<00:00, 1.08it/s] [68/68 [00:14<00:00, 4.66it/s] 

12/12 [00:10<00:00, 1.10it/s] [68/68 [00:14<00:00, 4.67it/s] Epoch gpu\_mem GIoU obj cls total targets img\_size

12/12 [00:10<00:00, 1.10it/s] 68/68 [00:14<00:00, 4.68it/s] Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | all 95 95 0.946 1 0.995 0.961 Epoch gpu\_mem GloU obj cls total targets img\_size 238/299 3.63G 0.008869 0.01191 0.002817 0.0236 5 640: 100% |

12/12 [00:10<00:00, 1.11it/s] | 68/68 [00:14<00:00, 4.63it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 239/299 3.63G 0.007937 0.01163 0.001722 0.02129 5 640: 100%| 0.995 0.962 Class Images Targets 95 0.945



12/12 [00:10<00:00, 1.10it/s] [68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95:100%|| 244/299 3.63G 0.008268 0.01189 0.002847 0.023 7 640: 100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.962 Targets P 95 0.945 1 Class Images Targets

12/12 [00:10<00:00, 1.12it/s]

R mAP@.5 mAP@.5:.95: 100%||

Targets P R mAP@.5 1 95 0.945 1 0.995

Class Images Targets

68/68 [00:13<00:00, 4.86it/s] cls total targets img\_size 003004 0.02344 5 640:100%| 3.63G 0.008569 0.01186 0.003004 0.02344 Epoch gpu\_mem GIoU obj

100%  12/12 [00:10<00:00, 1.10it/s]	
mAP@.5 mAP@.5::95: 100%	0.964
R	0.995
Ъ	$\vdash$
Targets	95 0.945
	6
Images	95
Class	all

12/12 [00:10<00:00, 1.10it/s] [68/68 [00:14<00:00, 4.82it/s] R mAP@.5 mAP@.5:.95: 100%|| 246/299 3.63G 0.008329 0.01132 0.001884 0.02153 6 640: 100%| cls total targets img\_size 0.995 0.959 Epoch gpu\_mem GloU obj Class Images Targets all 95 95 0.945

12/12 [00:10<00:00, 1.11it/s] | 68/68 [00:14<00:00, 4.81it/s] 0.995 0.946 95 0.945

12/12 [00:10<00:00, 1.12it/s] 68/68 [00:14<00:00, 4.81it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 248/299 3.63G 0.00843 0.01136 0.002976 0.02277 2 640: 100% | Class Images Targets P R mAP@.5 all 95 95 0.946 1 0.995 0.951

12/12 [00:10<00:00, 1.10it/s] [68/68 [00:14<00:00, 4.84it/s] R mAP@.5 mAP@.5:.95: 100%|| 249/299 3.63G 0.008142 0.01138 0.002477 0.022 4 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.952 Class Images Targets 95 0.945

12/12 [00:10<00:00, 1.10it/s] 68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 250/299 3.63G 0.008285 0.01184 0.002038 0.02216 6 640: 100%|| 0.995 0.948 Class Images Targets 95 0.945

12/12 [00:10<00:00, 1.09it/s] 12/12 [00:10<00:00, 1.13it/s] 12/12 [00:10<00:00, 1.11it/s] 12/12 [00:10<00:00, 1.10it/s] | 68/68 [00:14<00:00, 4.84it/s] [68/68 [00:13<00:00, 4.88it/s] [68/68 [00:14<00:00, 4.79it/s] 68/68 [00:14<00:00, 4.74it/s] Epoch gpu\_mem GloU obj cls total targets img\_size
252/299 3.63G 0.007957 0.01173 0.002488 0.02217 5 640:100%|

Class Images Targets P R mAP@.5 mAP@.5:.95:100%|

all 95 95 0.946 1 0.995 0.962 Epoch gpu\_mem GloU obj cls total targets img\_size
253/299 3.63G 0.007219 0.01152 0.001752 0.02049 5 640:100%|

Class Images Targets P R mAP@.5 mAP@.5:.95:100%|

all 95 95 0.946 1 0.995 0.959 R mAP@.5 mAP@.5:.95: 100%|| Class Images Targets P R mAP@.5 mAP@.5:.95: 100%|| all 95 95 0.945 1 0.995 0.957 254/299 3.63G 0.008499 0.01141 0.001834 0.02174 4 640: 100%|| 251/299 3.63G 0.008152 0.0117 0.002141 0.022 5 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size Epoch gpu\_mem GloU obj cls total targets img\_size cls total targets img\_size 0.995 0.954 Epoch gpu\_mem GloU obj Class Images Targets all 95 95 0.945

12/12 [00:10<00:00, 1.11it/s]

R mAP@.5 mAP@.5::95:100%||

0.995 0.958

255/299 3.63G 0.008148 0.0116 0.002082 0.02183 4 640:100%|

Targets P 95 0.946 1

Class Images Targets

| 68/68 [00:14<00:00, 4.80it/s]

| 12/12 [00:10<00:00, 1.12it/s] | 68/68 [00:14<00:00, 4.84it/s] cls total targets img\_size 0.952 0.995 0.961 0.995 Class Images Targets all 95 95 0.945 Epoch gpu\_mem GloU obj 0.945 95 95 all

12/12 [00:10<00:00, 1.12it/s] [68/68 [00:13<00:00, 4.87it/s] 0.995 0.962 Class Images Targets all 95 95 0.945

12/12 [00:10<00:00, 1.13it/s] [68/68 [00:14<00:00, 4.85it/s] 259/299 3.63G 0.007512 0.01097 0.001439 0.01992 6 640: 100% | Class Images Targets P R mAP@.5 mAP@.5::95: 100% | all 95 95 0.945 1 0.995 0.967 Epoch gpu\_mem GloU obj cls total targets img\_size

12/12 [00:22<00:00, 1.88s/it] [68/68 [00:14<00:00, 4.79it/s] R mAP@.5 mAP@.5:.95: 100%|| 260/299 3.63G 0.007789 0.01115 0.00155 0.02049 6 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.963 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.13it/s] [68/68 [00:14<00:00, 4.86it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 261/299 3.63G 0.007606 0.01126 0.002124 0.02099 7 640: 100% | 0.995 0.962 Class Images Targets 95 0.945



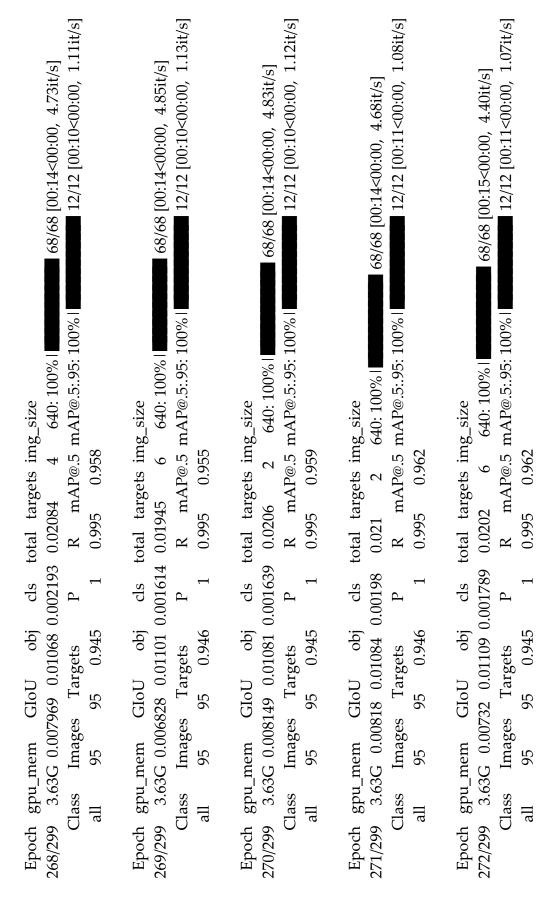
12/12 [00:10<00:00, 1.11it/s] ■ 68/68 [00:14<00:00, 4.82it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 263/299 3.63G 0.007837 0.0111 0.001968 0.0209 5 640:100%| 0.995 0.958 Class Images Targets P all 95 95 0.945 1

12/12 [00:10<00:00, 1.11it/s] [68/68 [00:14<00:00, 4.67it/s] Class Images Targets P R mAP@.5 1 all 95 95 0.945 1 0.995 0.962

12/12 [00:10<00:00, 1.13it/s] [68/68 [00:14<00:00, 4.83it/s] Epoch gpu\_mem GIoU obj cls total targets img\_size

12/12 [00:10<00:00, 1.11it/s] [68/68 [00:13<00:00, 4.87it/s] R mAP@.5 mAP@.5:.95: 100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 266/299 3.63G 0.007852 0.01159 0.002026 0.02147 5 640: 100% | Targets P R mAP@.5 r 95 0.945 1 0.995 0.959 Class Images Targets

12/12 [00:10<00:00, 1.09it/s] | 68/68 [00:14<00:00, 4.70it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GIoU obj cls total targets img\_size 267/299 3.63G 0.007256 0.01106 0.001542 0.01985 5 640: 100%1 0.995 0.958 Class Images Targets 95 0.945



gpu\_mem GloU obj cls total targets img\_size 3.63G 0.007593 0.01099 0.001531 0.02012 3 640:100%

Epoch gpu\_mem GloU obj

68/68 [00:14<00:00, 4.69it/s]

File - trair

12/12 [00:10<00:00, 1.13it/s] R mAP@.5 mAP@.5::95: 100%| 0.995 0.96 95 0.946 Images Targets Class

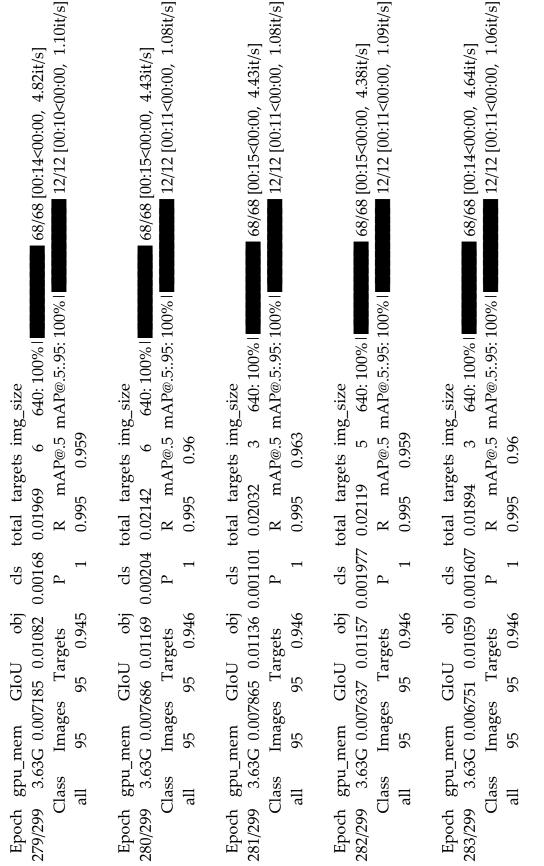
12/12 [00:10<00:00, 1.11it/s] 68/68 [00:14<00:00, 4.83it/s] R mAP@.5 mAP@.5:.95: 100%|| 4 640: 100% | Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.956 274/299 3.63G 0.007984 0.011 0.002341 0.02132 Class Images Targets all 95 95 0.946

12/12 [00:10<00:00, 1.11it/s] | 68/68 [00:14<00:00, 4.76it/s] R mAP@.5 mAP@.5:.95:100%| 275/299 3.63G 0.007655 0.01085 0.001613 0.02012 4 640: 100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.961 Class Images Targets P all 95 95 0.946 1

12/12 [00:10<00:00, 1.13it/s] | 68/68 [00:14<00:00, 4.85it/s] R mAP@.5 mAP@.5:.95:100%|| 276/299 3.63G 0.0073 0.01152 0.001333 0.02015 6 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size Class Images Targets P R mAP@.5 all 95 95 0.945 1 0.995 0.96

12/12 [00:10<00:00, 1.13it/s] [68/68 [00:14<00:00, 4.83it/s] R mAP@.5 mAP@.5:.95: 100%|| 277/299 3.63G 0.007168 0.01102 0.00201 0.02019 4 640:100% Epoch gpu\_mem GIoU obj cls total targets img\_size 0.995 0.961 Class Images Targets P all 95 95 0.946 1

12/12 [00:11<00:00, 1.08it/s] | 68/68 [00:14<00:00, 4.78it/s] R mAP@.5 mAP@.5:.95: 100%|| 278/299 3.63G 0.008776 0.01129 0.003228 0.0233 5 640:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 0.995 0.961 Class Images Targets 95 0.945



R mAP@.5 mAP@.5:.95: 100%||

284/299 3.63G 0.007014 0.0107 0.001521 0.01923 3 640:100%|

Epoch gpu\_mem GloU obj

Class Images Targets

cls total targets img\_size

12/12 [00:11<00:00, 1.07it/s]

| 68/68 | 100:14<00:00, 4.56it/s|

| 12/12 [00:10<00:00, 1.11it/s] [68/68 [00:14<00:00, 4.66it/s] R mAP@.5 mAP@.5:.95: 100%| 285/299 3.63G 0.006754 0.01132 0.001001 0.01908 3 640:100%|| cls total targets img\_size 0.995 0.962 96.0 0.995 Class Images Targets all 95 95 0.946 Epoch gpu\_mem GloU obj 0.946 95 95 all

12/12 [00:10<00:00, 1.11it/s] [68/68 [00:14<00:00, 4.68it/s] Epoch gpu\_mem GloU obj cls total targets img\_size 286/299 3.63G 0.007875 0.01128 0.001827 0.02098 2 640: 100% | ■ ■ ■ Class Images Targets P R mAP@.5 mAP@.5:.95: 100% | ■ 0.995 0.964 Class Images Targets P all 95 95 0.946 1

12/12 [00:10<00:00, 1.12it/s] [68/68 [00:14<00:00, 4.67it/s] Epoch gpu\_mem GloU obj cls total targets img\_size
287/299 3.63G 0.007068 0.01101 0.001392 0.01947 5 640: 100%|

Class Images Targets P R mAP@.5 mAP@.5::95: 100%|
all 95 95 0.946 1 0.995 0.962

12/12 [00:10<00:00, 1.11it/s] [68/68 [00:14<00:00, 4.65it/s] R mAP@.5 mAP@.5::95:100%|| 288/299 3.63G 0.007529 0.01096 0.001909 0.0204 4 640:100%| Epoch gpu\_mem GIoU obj cls total targets img\_size Targets P R mAP@.5 1 95 0.946 1 0.995 0.959 Class Images Targets

12/12 [00:10<00:00, 1.11it/s] [68/68 [00:14<00:00, 4.71it/s] R mAP@.5 mAP@.5:.95:100%| Epoch gpu\_mem GloU obj cls total targets img\_size 289/299 3.63G 0.007127 0.01134 0.001622 0.02009 5 640: 100% | 0.995 0.955 Class Images Targets 95 0.946

File - train

68/68 [00:14<00:00, 4.66it/s]	12/12 [00:10<00:00, 1.10it/s]	
640: 100%	mAP@.5 mAP@.5:.95: 100%	
rV	1P@.5	96.0
0.0208	R m/	0.995
0.001427 0.0208	Ь	1
0.01119 (	Targets	95 0.945
182		95
3.63G 0.008182	Images	95
3.6	Class	all
290/299	J	

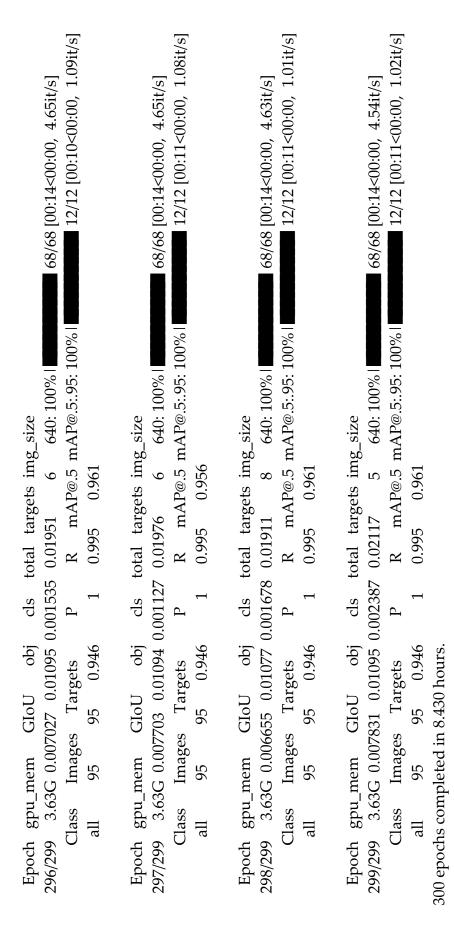
12/12 [00:11<00:00, 1.09it/s] [68/68 [00:14<00:00, 4.66it/s] cls total targets img\_size 0.995 0.965 Class Images Targets all 95 95 0.945 obj Epoch gpu\_mem GloU

12/12 [00:11<00:00, 1.07it/s] [68/68 [00:14<00:00, 4.66it/s] 

12/12 [00:11<00:00, 1.08it/s] 68/68 [00:14<00:00, 4.62it/s] R mAP@.5 mAP@.5:.95: 100%|| 293/299 3.63G 0.007481 0.01118 0.00167 0.02033 3 640:100%|| Epoch gpu\_mem GIoU obj cls total targets img\_size Class Images Targets P R mAP@.5 r all 95 95 0.946 1 0.995 0.965

12/12 [00:11<00:00, 1.08it/s] [68/68 [00:14<00:00, 4.80it/s] R mAP@.5 mAP@.5:.95:100%|| Epoch gpu\_mem GloU obj cls total targets img\_size 294/299 3.63G 0.006588 0.01072 0.001394 0.01871 3 640: 100% | Targets P R mAP@.5 r 95 0.946 1 0.995 0.963 Class Images Targets

12/12 [00:10<00:00, 1.10it/s] | 68/68 [00:14<00:00, 4.57it/s] R mAP@.5 mAP@.5::95: 100%| Epoch gpu\_mem GloU obj cls total targets img\_size 295/299 3.63G 0.006662 0.01096 0.00149 0.01911 5 640:100%| 0.995 0.966 Class Images Targets 95 0.946



Process finished with exit code 0