**D:\Software\Anaconda\envs\yolov8\python.exe F:\YOLO\yolov8-main\train.py**

**WARNING no model scale passed. Assuming scale='n'.**

**from n params module arguments**

**0 -1 1 464 ultralytics.nn.modules.conv.Conv [3, 16, 3, 2]**

**1 -1 1 4672 ultralytics.nn.modules.conv.Conv [16, 32, 3, 2]**

**2 -1 1 7360 ultralytics.nn.modules.block.C2f [32, 32, 1, True]**

**3 -1 1 18560 ultralytics.nn.modules.conv.Conv [32, 64, 3, 2]**

**4 -1 2 49664 ultralytics.nn.modules.block.C2f [64, 64, 2, True]**

**5 -1 1 73984 ultralytics.nn.modules.conv.Conv [64, 128, 3, 2]**

**6 -1 2 197632 ultralytics.nn.modules.block.C2f [128, 128, 2, True]**

**7 -1 1 295424 ultralytics.nn.modules.conv.Conv [128, 256, 3, 2]**

**8 -1 1 460288 ultralytics.nn.modules.block.C2f [256, 256, 1, True]**

**9 -1 1 164608 ultralytics.nn.modules.block.SPPF [256, 256, 5]**

**10 -1 1 0 torch.nn.modules.upsampling.Upsample [None, 2, 'nearest']**

**11 [-1, 6] 1 0 ultralytics.nn.modules.conv.Concat [1]**

**12 -1 1 148224 ultralytics.nn.modules.block.C2f [384, 128, 1]**

**13 -1 1 0 torch.nn.modules.upsampling.Upsample [None, 2, 'nearest']**

**14 [-1, 4] 1 0 ultralytics.nn.modules.conv.Concat [1]**

**15 -1 1 37248 ultralytics.nn.modules.block.C2f [192, 64, 1]**

**16 -1 1 36992 ultralytics.nn.modules.conv.Conv [64, 64, 3, 2]**

**17 [-1, 12] 1 0 ultralytics.nn.modules.conv.Concat [1]**

**18 -1 1 123648 ultralytics.nn.modules.block.C2f [192, 128, 1]**

**19 -1 1 147712 ultralytics.nn.modules.conv.Conv [128, 128, 3, 2]**

**20 [-1, 9] 1 0 ultralytics.nn.modules.conv.Concat [1]**

**21 -1 1 493056 ultralytics.nn.modules.block.C2f [384, 256, 1]**

**22 [15, 18, 21] 1 751702 ultralytics.nn.modules.head.Detect [2, [64, 128, 256]]**

**YOLOv8 summary: 225 layers, 3011238 parameters, 3011222 gradients, 8.2 GFLOPs**

**New https://pypi.org/project/ultralytics/8.1.35 available Update with 'pip install -U ultralytics'**

**Ultralytics YOLOv8.0.202 Python-3.9.18 torch-2.1.1 CUDA:0 (NVIDIA GeForce RTX 3070 Ti Laptop GPU, 8192MiB)**

**engine\trainer: task=detect, mode=train, model=ultralytics/cfg/models/v8/yolov8.yaml, data=F:/YOLO/yolov8-main/dataset/fireandsmoke/data.yaml, epochs=100, patience=300, batch=32, imgsz=640, save=True, save\_period=-1, cache=False, device=0, workers=4, project=runs/train, name=exp, exist\_ok=False, pretrained=True, optimizer=SGD, verbose=True, seed=0, deterministic=True, single\_cls=False, rect=False, cos\_lr=False, close\_mosaic=10, resume=False, amp=True, fraction=1.0, profile=False, freeze=None, overlap\_mask=True, mask\_ratio=4, dropout=0.0, val=True, split=val, save\_json=False, save\_hybrid=False, conf=None, iou=0.7, max\_det=300, half=False, dnn=False, plots=True, source=None, show=False, save\_txt=False, save\_conf=False, save\_crop=False, show\_labels=True, show\_conf=True, vid\_stride=1, stream\_buffer=False, line\_width=None, visualize=False, augment=False, agnostic\_nms=False, classes=None, retina\_masks=False, boxes=True, format=torchscript, keras=False, optimize=False, int8=False, dynamic=False, simplify=False, opset=None, workspace=4, nms=False, lr0=0.01, lrf=0.01, momentum=0.937, weight\_decay=0.0005, warmup\_epochs=3.0, warmup\_momentum=0.8, warmup\_bias\_lr=0.1, box=7.5, cls=0.5, dfl=1.5, pose=12.0, kobj=1.0, label\_smoothing=0.0, nbs=64, hsv\_h=0.015, hsv\_s=0.7, hsv\_v=0.4, degrees=0.0, translate=0.1, scale=0.5, shear=0.0, perspective=0.0, flipud=0.0, fliplr=0.5, mosaic=1.0, mixup=0.0, copy\_paste=0.0, cfg=None, tracker=botsort.yaml, save\_dir=runs\train\exp**

**WARNING no model scale passed. Assuming scale='n'.**

**from n params module arguments**

**0 -1 1 464 ultralytics.nn.modules.conv.Conv [3, 16, 3, 2]**

**1 -1 1 4672 ultralytics.nn.modules.conv.Conv [16, 32, 3, 2]**

**2 -1 1 7360 ultralytics.nn.modules.block.C2f [32, 32, 1, True]**

**3 -1 1 18560 ultralytics.nn.modules.conv.Conv [32, 64, 3, 2]**

**4 -1 2 49664 ultralytics.nn.modules.block.C2f [64, 64, 2, True]**

**5 -1 1 73984 ultralytics.nn.modules.conv.Conv [64, 128, 3, 2]**

**6 -1 2 197632 ultralytics.nn.modules.block.C2f [128, 128, 2, True]**

**7 -1 1 295424 ultralytics.nn.modules.conv.Conv [128, 256, 3, 2]**

**8 -1 1 460288 ultralytics.nn.modules.block.C2f [256, 256, 1, True]**

**9 -1 1 164608 ultralytics.nn.modules.block.SPPF [256, 256, 5]**

**10 -1 1 0 torch.nn.modules.upsampling.Upsample [None, 2, 'nearest']**

**11 [-1, 6] 1 0 ultralytics.nn.modules.conv.Concat [1]**

**12 -1 1 148224 ultralytics.nn.modules.block.C2f [384, 128, 1]**

**13 -1 1 0 torch.nn.modules.upsampling.Upsample [None, 2, 'nearest']**

**14 [-1, 4] 1 0 ultralytics.nn.modules.conv.Concat [1]**

**15 -1 1 37248 ultralytics.nn.modules.block.C2f [192, 64, 1]**

**16 -1 1 36992 ultralytics.nn.modules.conv.Conv [64, 64, 3, 2]**

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**18 -1 1 123648 ultralytics.nn.modules.block.C2f [192, 128, 1]**

**19 -1 1 147712 ultralytics.nn.modules.conv.Conv [128, 128, 3, 2]**

**20 [-1, 9] 1 0 ultralytics.nn.modules.conv.Concat [1]**

**21 -1 1 493056 ultralytics.nn.modules.block.C2f [384, 256, 1]**

**22 [15, 18, 21] 1 751702 ultralytics.nn.modules.head.Detect [2, [64, 128, 256]]**

**YOLOv8 summary: 225 layers, 3011238 parameters, 3011222 gradients, 8.2 GFLOPs**

**TensorBoard: Start with 'tensorboard --logdir runs\train\exp', view at http://localhost:6006/**

**Freezing layer 'model.22.dfl.conv.weight'**

**AMP: running Automatic Mixed Precision (AMP) checks with YOLOv8n...**

**AMP: checks passed**

**train: Scanning F:\YOLO\yolov8-main\dataset\fireandsmoke\labels\train.cache... 5396 images, 0 backgrounds, 0 corrupt: 100%|██████████| 5396/5396 [00:00<?, ?it/s]**

**val: Scanning F:\YOLO\yolov8-main\dataset\fireandsmoke\labels\val.cache... 674 images, 0 backgrounds, 0 corrupt: 100%|██████████| 674/674 [00:00<?, ?it/s]**

**Plotting labels to runs\train\exp\labels.jpg...**

**optimizer: SGD(lr=0.01, momentum=0.937) with parameter groups 57 weight(decay=0.0), 64 weight(decay=0.0005), 63 bias(decay=0.0)**

**Image sizes 640 train, 640 val**

**Using 4 dataloader workers**

**Logging results to runs\train\exp**

**Starting training for 100 epochs...**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**1/100 4.65G 3.584 3.728 3.787 132 640: 100%|██████████| 169/169 [00:33<00:00, 5.11it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.35it/s]**

**all 674 2540 0.52 0.0396 0.0111 0.00325**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**2/100 4.33G 3.08 2.971 3.162 115 640: 100%|██████████| 169/169 [00:30<00:00, 5.49it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.13it/s]**

**all 674 2540 0.104 0.278 0.065 0.0201**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**3/100 4.28G 2.41 2.568 2.595 131 640: 100%|██████████| 169/169 [00:30<00:00, 5.52it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.59it/s]**

**all 674 2540 0.215 0.28 0.151 0.0568**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**4/100 4.27G 2.074 2.313 2.248 112 640: 100%|██████████| 169/169 [00:31<00:00, 5.32it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.63it/s]**

**all 674 2540 0.392 0.417 0.338 0.141**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**5/100 4.54G 1.917 2.15 2.076 114 640: 100%|██████████| 169/169 [00:32<00:00, 5.28it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.50it/s]**

**all 674 2540 0.361 0.492 0.416 0.195**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**6/100 4.3G 1.829 2.04 1.986 127 640: 100%|██████████| 169/169 [00:32<00:00, 5.23it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.63it/s]**

**all 674 2540 0.487 0.451 0.457 0.222**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**7/100 4.27G 1.774 1.973 1.924 92 640: 100%|██████████| 169/169 [00:32<00:00, 5.26it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.69it/s]**

**all 674 2540 0.477 0.488 0.457 0.23**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**8/100 4.3G 1.735 1.917 1.875 103 640: 100%|██████████| 169/169 [00:31<00:00, 5.34it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.95it/s]**

**all 674 2540 0.5 0.506 0.5 0.261**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**9/100 4.29G 1.704 1.869 1.853 120 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.75it/s]**

**all 674 2540 0.521 0.505 0.499 0.256**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**10/100 4.29G 1.677 1.821 1.82 134 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.87it/s]**

**all 674 2540 0.524 0.498 0.513 0.272**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**11/100 4.28G 1.651 1.78 1.783 123 640: 100%|██████████| 169/169 [00:32<00:00, 5.19it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.59it/s]**

**all 674 2540 0.535 0.535 0.534 0.292**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**12/100 4.33G 1.639 1.763 1.771 126 640: 100%|██████████| 169/169 [00:32<00:00, 5.25it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.14it/s]**

**all 674 2540 0.566 0.534 0.562 0.316**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**13/100 4.28G 1.618 1.734 1.746 134 640: 100%|██████████| 169/169 [00:31<00:00, 5.38it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.04it/s]**

**all 674 2540 0.543 0.548 0.553 0.307**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**14/100 4.29G 1.593 1.69 1.725 129 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.68it/s]**

**all 674 2540 0.567 0.565 0.574 0.326**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**15/100 4.27G 1.588 1.677 1.725 100 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.16it/s]**

**all 674 2540 0.563 0.573 0.598 0.334**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**16/100 4.29G 1.566 1.644 1.695 135 640: 100%|██████████| 169/169 [00:31<00:00, 5.43it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.30it/s]**

**all 674 2540 0.573 0.576 0.603 0.345**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**17/100 4.27G 1.548 1.624 1.679 149 640: 100%|██████████| 169/169 [00:31<00:00, 5.39it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.10it/s]**

**all 674 2540 0.578 0.59 0.605 0.343**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**18/100 4.44G 1.543 1.607 1.667 147 640: 100%|██████████| 169/169 [00:30<00:00, 5.48it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.18it/s]**

**all 674 2540 0.558 0.584 0.593 0.342**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**19/100 4.26G 1.531 1.589 1.658 168 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.75it/s]**

**all 674 2540 0.582 0.571 0.602 0.349**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**20/100 4.28G 1.526 1.584 1.654 164 640: 100%|██████████| 169/169 [00:32<00:00, 5.16it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.71it/s]**

**all 674 2540 0.59 0.592 0.611 0.352**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**21/100 4.31G 1.52 1.558 1.64 109 640: 100%|██████████| 169/169 [00:32<00:00, 5.20it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.09it/s]**

**all 674 2540 0.604 0.604 0.631 0.366**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**22/100 4.28G 1.508 1.54 1.64 146 640: 100%|██████████| 169/169 [00:31<00:00, 5.45it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.08it/s]**

**all 674 2540 0.615 0.583 0.635 0.379**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**23/100 4.29G 1.491 1.522 1.622 107 640: 100%|██████████| 169/169 [00:32<00:00, 5.28it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.80it/s]**

**all 674 2540 0.602 0.617 0.635 0.371**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**24/100 4.47G 1.485 1.508 1.613 95 640: 100%|██████████| 169/169 [00:31<00:00, 5.30it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.76it/s]**

**all 674 2540 0.614 0.62 0.655 0.389**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**25/100 4.28G 1.472 1.492 1.603 132 640: 100%|██████████| 169/169 [00:32<00:00, 5.23it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.76it/s]**

**all 674 2540 0.615 0.616 0.649 0.391**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**26/100 4.29G 1.478 1.479 1.593 134 640: 100%|██████████| 169/169 [00:32<00:00, 5.19it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.46it/s]**

**all 674 2540 0.631 0.619 0.672 0.403**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**27/100 4.31G 1.458 1.467 1.587 105 640: 100%|██████████| 169/169 [00:32<00:00, 5.22it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.58it/s]**

**all 674 2540 0.632 0.628 0.662 0.403**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**28/100 4.34G 1.462 1.457 1.589 164 640: 100%|██████████| 169/169 [00:32<00:00, 5.18it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.50it/s]**

**all 674 2540 0.627 0.598 0.65 0.389**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**29/100 4.28G 1.449 1.445 1.581 138 640: 100%|██████████| 169/169 [00:32<00:00, 5.16it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.39it/s]**

**all 674 2540 0.647 0.61 0.671 0.406**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**30/100 4.45G 1.437 1.426 1.568 94 640: 100%|██████████| 169/169 [00:32<00:00, 5.16it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.38it/s]**

**all 674 2540 0.609 0.623 0.668 0.414**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**31/100 4.27G 1.435 1.426 1.567 111 640: 100%|██████████| 169/169 [00:33<00:00, 5.08it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.63it/s]**

**all 674 2540 0.664 0.627 0.675 0.417**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**32/100 4.27G 1.418 1.396 1.558 125 640: 100%|██████████| 169/169 [00:33<00:00, 5.11it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.52it/s]**

**all 674 2540 0.642 0.648 0.675 0.413**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**33/100 4.28G 1.417 1.397 1.549 119 640: 100%|██████████| 169/169 [00:31<00:00, 5.38it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.20it/s]**

**all 674 2540 0.645 0.636 0.684 0.417**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**34/100 4.3G 1.417 1.384 1.551 124 640: 100%|██████████| 169/169 [00:31<00:00, 5.44it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.05it/s]**

**all 674 2540 0.659 0.638 0.7 0.432**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**35/100 4.3G 1.411 1.369 1.538 154 640: 100%|██████████| 169/169 [00:31<00:00, 5.43it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.21it/s]**

**all 674 2540 0.676 0.64 0.699 0.438**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**36/100 4.29G 1.402 1.366 1.536 123 640: 100%|██████████| 169/169 [00:31<00:00, 5.35it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.58it/s]**

**all 674 2540 0.645 0.662 0.705 0.434**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**37/100 4.3G 1.394 1.339 1.526 139 640: 100%|██████████| 169/169 [00:32<00:00, 5.20it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.16it/s]**

**all 674 2540 0.659 0.654 0.709 0.443**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**38/100 4.29G 1.394 1.337 1.523 171 640: 100%|██████████| 169/169 [00:31<00:00, 5.29it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.70it/s]**

**all 674 2540 0.672 0.665 0.709 0.448**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**39/100 4.26G 1.386 1.329 1.519 110 640: 100%|██████████| 169/169 [00:32<00:00, 5.25it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.62it/s]**

**all 674 2540 0.674 0.661 0.718 0.449**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**40/100 4.3G 1.379 1.33 1.518 162 640: 100%|██████████| 169/169 [00:31<00:00, 5.32it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.27it/s]**

**all 674 2540 0.674 0.672 0.726 0.46**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**41/100 4.28G 1.377 1.316 1.514 120 640: 100%|██████████| 169/169 [00:31<00:00, 5.38it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.81it/s]**

**all 674 2540 0.681 0.665 0.722 0.453**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**42/100 4.29G 1.364 1.311 1.503 121 640: 100%|██████████| 169/169 [00:32<00:00, 5.28it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.19it/s]**

**all 674 2540 0.684 0.663 0.722 0.458**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**43/100 4.28G 1.359 1.298 1.5 133 640: 100%|██████████| 169/169 [00:31<00:00, 5.38it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.21it/s]**

**all 674 2540 0.677 0.688 0.73 0.46**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**44/100 4.27G 1.358 1.29 1.492 123 640: 100%|██████████| 169/169 [00:31<00:00, 5.41it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.22it/s]**

**all 674 2540 0.682 0.675 0.741 0.475**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**45/100 4.28G 1.356 1.286 1.492 136 640: 100%|██████████| 169/169 [00:31<00:00, 5.30it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.78it/s]**

**all 674 2540 0.672 0.69 0.737 0.467**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**46/100 4.27G 1.349 1.268 1.488 122 640: 100%|██████████| 169/169 [00:32<00:00, 5.26it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.20it/s]**

**all 674 2540 0.695 0.681 0.741 0.475**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**47/100 4.28G 1.338 1.264 1.478 131 640: 100%|██████████| 169/169 [00:32<00:00, 5.25it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.60it/s]**

**all 674 2540 0.695 0.693 0.746 0.48**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**48/100 4.28G 1.343 1.266 1.481 125 640: 100%|██████████| 169/169 [00:33<00:00, 5.05it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.58it/s]**

**all 674 2540 0.681 0.703 0.744 0.471**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**49/100 4.27G 1.337 1.249 1.477 149 640: 100%|██████████| 169/169 [00:33<00:00, 5.11it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.94it/s]**

**all 674 2540 0.712 0.677 0.75 0.485**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**50/100 4.32G 1.328 1.237 1.46 124 640: 100%|██████████| 169/169 [00:32<00:00, 5.16it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.69it/s]**

**all 674 2540 0.712 0.684 0.752 0.487**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**51/100 4.29G 1.318 1.228 1.455 125 640: 100%|██████████| 169/169 [00:32<00:00, 5.19it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.67it/s]**

**all 674 2540 0.7 0.702 0.756 0.496**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**52/100 4.42G 1.306 1.214 1.453 126 640: 100%|██████████| 169/169 [00:31<00:00, 5.31it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.02it/s]**

**all 674 2540 0.697 0.699 0.762 0.496**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**53/100 4.29G 1.313 1.217 1.453 161 640: 100%|██████████| 169/169 [00:31<00:00, 5.42it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.17it/s]**

**all 674 2540 0.706 0.711 0.771 0.504**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**54/100 4.28G 1.306 1.215 1.45 114 640: 100%|██████████| 169/169 [00:31<00:00, 5.39it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.23it/s]**

**all 674 2540 0.688 0.733 0.77 0.506**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**55/100 4.45G 1.303 1.208 1.449 99 640: 100%|██████████| 169/169 [00:31<00:00, 5.37it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.23it/s]**

**all 674 2540 0.722 0.709 0.778 0.514**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**56/100 4.3G 1.304 1.204 1.445 122 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.36it/s]**

**all 674 2540 0.712 0.71 0.775 0.51**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**57/100 4.29G 1.296 1.192 1.442 142 640: 100%|██████████| 169/169 [00:32<00:00, 5.15it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.71it/s]**

**all 674 2540 0.733 0.707 0.777 0.515**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**58/100 4.31G 1.297 1.19 1.44 158 640: 100%|██████████| 169/169 [00:32<00:00, 5.15it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.49it/s]**

**all 674 2540 0.716 0.72 0.784 0.518**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**59/100 4.45G 1.285 1.179 1.433 113 640: 100%|██████████| 169/169 [00:33<00:00, 5.09it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.14it/s]**

**all 674 2540 0.734 0.714 0.788 0.526**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**60/100 4.51G 1.289 1.17 1.431 123 640: 100%|██████████| 169/169 [00:33<00:00, 5.11it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.34it/s]**

**all 674 2540 0.732 0.723 0.797 0.529**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**61/100 4.26G 1.279 1.161 1.425 139 640: 100%|██████████| 169/169 [00:32<00:00, 5.19it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.68it/s]**

**all 674 2540 0.75 0.712 0.797 0.532**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**62/100 4.31G 1.272 1.147 1.42 139 640: 100%|██████████| 169/169 [00:32<00:00, 5.28it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.87it/s]**

**all 674 2540 0.761 0.711 0.797 0.534**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**63/100 4.27G 1.272 1.158 1.424 165 640: 100%|██████████| 169/169 [00:33<00:00, 5.07it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.47it/s]**

**all 674 2540 0.751 0.729 0.803 0.536**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**64/100 4.49G 1.258 1.135 1.416 136 640: 100%|██████████| 169/169 [00:33<00:00, 5.07it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.60it/s]**

**all 674 2540 0.738 0.729 0.793 0.531**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**65/100 4.45G 1.259 1.127 1.406 108 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.10it/s]**

**all 674 2540 0.741 0.733 0.805 0.542**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**66/100 4.5G 1.246 1.119 1.396 126 640: 100%|██████████| 169/169 [00:32<00:00, 5.17it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.71it/s]**

**all 674 2540 0.747 0.723 0.802 0.538**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**67/100 4.44G 1.252 1.12 1.399 137 640: 100%|██████████| 169/169 [00:32<00:00, 5.23it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.54it/s]**

**all 674 2540 0.731 0.745 0.803 0.541**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**68/100 4.29G 1.255 1.115 1.398 111 640: 100%|██████████| 169/169 [00:32<00:00, 5.25it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.81it/s]**

**all 674 2540 0.752 0.729 0.81 0.551**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**69/100 4.26G 1.242 1.095 1.391 101 640: 100%|██████████| 169/169 [00:32<00:00, 5.26it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.58it/s]**

**all 674 2540 0.742 0.749 0.811 0.553**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**70/100 4.46G 1.236 1.102 1.386 131 640: 100%|██████████| 169/169 [00:33<00:00, 5.08it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.67it/s]**

**all 674 2540 0.741 0.755 0.816 0.55**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**71/100 4.44G 1.235 1.098 1.391 163 640: 100%|██████████| 169/169 [00:31<00:00, 5.42it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.18it/s]**

**all 674 2540 0.75 0.757 0.817 0.555**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**72/100 4.51G 1.232 1.087 1.386 161 640: 100%|██████████| 169/169 [00:31<00:00, 5.34it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.99it/s]**

**all 674 2540 0.75 0.755 0.821 0.559**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**73/100 4.27G 1.227 1.079 1.376 143 640: 100%|██████████| 169/169 [00:31<00:00, 5.33it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.96it/s]**

**all 674 2540 0.763 0.752 0.823 0.561**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**74/100 4.28G 1.216 1.064 1.37 145 640: 100%|██████████| 169/169 [00:31<00:00, 5.39it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.22it/s]**

**all 674 2540 0.746 0.755 0.816 0.557**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**75/100 4.26G 1.218 1.064 1.368 139 640: 100%|██████████| 169/169 [00:31<00:00, 5.38it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.17it/s]**

**all 674 2540 0.749 0.769 0.822 0.562**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**76/100 4.33G 1.214 1.062 1.368 104 640: 100%|██████████| 169/169 [00:31<00:00, 5.45it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.17it/s]**

**all 674 2540 0.775 0.746 0.827 0.565**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**77/100 4.27G 1.207 1.05 1.369 110 640: 100%|██████████| 169/169 [00:30<00:00, 5.46it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.10it/s]**

**all 674 2540 0.776 0.759 0.828 0.571**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**78/100 4.28G 1.2 1.042 1.363 123 640: 100%|██████████| 169/169 [00:32<00:00, 5.22it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.48it/s]**

**all 674 2540 0.769 0.762 0.829 0.573**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**79/100 4.25G 1.198 1.047 1.362 120 640: 100%|██████████| 169/169 [00:33<00:00, 5.07it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.65it/s]**

**all 674 2540 0.783 0.757 0.833 0.579**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**80/100 4.3G 1.195 1.037 1.351 133 640: 100%|██████████| 169/169 [00:32<00:00, 5.13it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.68it/s]**

**all 674 2540 0.782 0.762 0.834 0.578**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**81/100 4.26G 1.189 1.03 1.342 132 640: 100%|██████████| 169/169 [00:32<00:00, 5.16it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.55it/s]**

**all 674 2540 0.773 0.769 0.835 0.581**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**82/100 4.29G 1.197 1.032 1.354 121 640: 100%|██████████| 169/169 [00:32<00:00, 5.15it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.69it/s]**

**all 674 2540 0.769 0.77 0.835 0.581**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**83/100 4.44G 1.184 1.013 1.346 109 640: 100%|██████████| 169/169 [00:32<00:00, 5.20it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.66it/s]**

**all 674 2540 0.787 0.759 0.839 0.583**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**84/100 4.46G 1.181 1.014 1.342 130 640: 100%|██████████| 169/169 [00:33<00:00, 5.00it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:05<00:00, 2.20it/s]**

**all 674 2540 0.787 0.76 0.84 0.587**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**85/100 4.27G 1.173 1.007 1.337 133 640: 100%|██████████| 169/169 [00:33<00:00, 5.02it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.67it/s]**

**all 674 2540 0.795 0.757 0.844 0.59**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**86/100 4.3G 1.172 0.9955 1.332 125 640: 100%|██████████| 169/169 [00:32<00:00, 5.21it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.63it/s]**

**all 674 2540 0.791 0.773 0.845 0.591**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**87/100 4.41G 1.171 0.9977 1.335 111 640: 100%|██████████| 169/169 [00:32<00:00, 5.20it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.84it/s]**

**all 674 2540 0.8 0.763 0.846 0.593**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**88/100 4.49G 1.165 0.9962 1.328 125 640: 100%|██████████| 169/169 [00:33<00:00, 5.10it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.71it/s]**

**all 674 2540 0.783 0.779 0.847 0.594**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**89/100 4.28G 1.164 0.992 1.332 167 640: 100%|██████████| 169/169 [00:32<00:00, 5.19it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.84it/s]**

**all 674 2540 0.79 0.768 0.847 0.593**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**90/100 4.31G 1.152 0.9777 1.322 151 640: 100%|██████████| 169/169 [00:32<00:00, 5.19it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.62it/s]**

**all 674 2540 0.792 0.771 0.848 0.595**

**Closing dataloader mosaic**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**91/100 4.62G 1.074 0.8694 1.259 62 640: 100%|██████████| 169/169 [00:29<00:00, 5.74it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.25it/s]**

**all 674 2540 0.789 0.769 0.846 0.594**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**92/100 4.3G 1.049 0.827 1.241 60 640: 100%|██████████| 169/169 [00:30<00:00, 5.54it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 2.86it/s]**

**all 674 2540 0.796 0.772 0.85 0.597**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**93/100 4.24G 1.039 0.813 1.233 67 640: 100%|██████████| 169/169 [00:30<00:00, 5.46it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.18it/s]**

**all 674 2540 0.789 0.78 0.853 0.6**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**94/100 4.28G 1.026 0.7973 1.224 55 640: 100%|██████████| 169/169 [00:30<00:00, 5.46it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.07it/s]**

**all 674 2540 0.803 0.777 0.857 0.606**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**95/100 4.27G 1.027 0.7928 1.224 55 640: 100%|██████████| 169/169 [00:30<00:00, 5.51it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.18it/s]**

**all 674 2540 0.813 0.771 0.858 0.608**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**96/100 4.29G 1.017 0.7874 1.218 58 640: 100%|██████████| 169/169 [00:30<00:00, 5.57it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.20it/s]**

**all 674 2540 0.807 0.785 0.86 0.611**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**97/100 4.24G 1.014 0.7853 1.214 59 640: 100%|██████████| 169/169 [00:30<00:00, 5.53it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.17it/s]**

**all 674 2540 0.815 0.777 0.86 0.611**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**98/100 4.3G 1.004 0.7673 1.205 53 640: 100%|██████████| 169/169 [00:30<00:00, 5.53it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.24it/s]**

**all 674 2540 0.809 0.783 0.861 0.613**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**99/100 4.27G 0.9964 0.7652 1.201 71 640: 100%|██████████| 169/169 [00:31<00:00, 5.40it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.73it/s]**

**all 674 2540 0.816 0.78 0.863 0.615**

**Epoch GPU\_mem box\_loss cls\_loss dfl\_loss Instances Size**

**100/100 4.3G 1.001 0.7716 1.207 72 640: 100%|██████████| 169/169 [00:31<00:00, 5.41it/s]**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:03<00:00, 3.18it/s]**

**all 674 2540 0.815 0.783 0.864 0.615**

**100 epochs completed in 1.017 hours.**

**Optimizer stripped from runs\train\exp\weights\last.pt, 6.2MB**

**Optimizer stripped from runs\train\exp\weights\best.pt, 6.2MB**

**Validating runs\train\exp\weights\best.pt...**

**Ultralytics YOLOv8.0.202 Python-3.9.18 torch-2.1.1 CUDA:0 (NVIDIA GeForce RTX 3070 Ti Laptop GPU, 8192MiB)**

**YOLOv8 summary (fused): 168 layers, 3006038 parameters, 0 gradients, 8.1 GFLOPs**

**Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 11/11 [00:04<00:00, 2.64it/s]**

**all 674 2540 0.816 0.783 0.864 0.615**

**fire 674 1086 0.847 0.849 0.921 0.672**

**smoke 674 1454 0.785 0.716 0.808 0.559**

**Speed: 0.1ms preprocess, 0.8ms inference, 0.0ms loss, 0.8ms postprocess per image**

**Results saved to runs\train\exp**

**进程已结束,退出代码0**