

**C:\Users\Ali\Desktop\ProjeV1\V8>python train.py**

**Ultralytics 8.3.108 🚀 Python-3.13.3 torch-2.6.0+cu118 CUDA:0 (NVIDIA GeForce RTX 4050 Laptop GPU, 6140MiB)**

**engine\trainer: task=detect, mode=train, model=C:\Users\Ali\Desktop\ProjeV1\V8\yolov8n.pt, data=C:\Users\Ali\Desktop\ProjeV1\V8\data.yaml, epochs=150, time=None, patience=100, batch=8, imgsz=640, save=True, save\_period=-1, cache=False, device=cuda, workers=0, project=None, name=train2, exist\_ok=False, pretrained=False, optimizer=auto, 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, multi\_scale=False, overlap\_mask=True, mask\_ratio=4, dropout=0.0, val=True, split=val, save\_json=False, conf=None, iou=0.7, max\_det=300, half=False, dnn=False, plots=True, source=None, vid\_stride=1, stream\_buffer=False, visualize=False, augment=False, agnostic\_nms=False, classes=None, retina\_masks=False, embed=None, show=False, save\_frames=False, save\_txt=False, save\_conf=False, save\_crop=False, show\_labels=True, show\_conf=True, show\_boxes=True, line\_width=None, format=torchscript, keras=False, optimize=False, int8=False, dynamic=False, simplify=True, opset=None, workspace=None, 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, 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, bgr=0.0, mosaic=1.0, mixup=0.0, copy\_paste=0.0, copy\_paste\_mode=flip, auto\_augment=randaugment, erasing=0.4, cfg=None, tracker=botsort.yaml, save\_dir=runs\detect\train2**

**Overriding model.yaml nc=80 with nc=1**

 **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 751507 ultralytics.nn.modules.head.Detect [1, [64, 128, 256]]**

**Model summary: 129 layers, 3,011,043 parameters, 3,011,027 gradients, 8.2 GFLOPs**

**Transferred 319/355 items from pretrained weights**

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

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

**Downloading https://github.com/ultralytics/assets/releases/download/v8.3.0/yolo11n.pt to 'yolo11n.pt'...**

**⚠️ Download failure, retrying 1/3 https://github.com/ultralytics/assets/releases/download/v8.3.0/yolo11n.pt...**

**-=O=- ## curl: (6) Could not resolve host: objects.githubusercontent.com**

**Warning: Problem : timeout. Will retry in 1 seconds. 3 retries left.**

**#=#=- # curl: (6) Could not resolve host: objects.githubusercontent.com**

**Warning: Problem : timeout. Will retry in 2 seconds. 2 retries left.**

**##O#- curl: (6) Could not resolve host: objects.githubusercontent.com**

**Warning: Problem : timeout. Will retry in 4 seconds. 1 retries left.**

**################################################################################################################ 100.0%**

**AMP: checks passed ✅**

**train: Scanning C:\Users\Ali\Desktop\ProjeV1\V8\labels\train... 826 images, 0 backgrounds, 0 corrupt: 100%|██████████|**

**train: New cache created: C:\Users\Ali\Desktop\ProjeV1\V8\labels\train.cache**

**val: Scanning C:\Users\Ali\Desktop\ProjeV1\V8\labels\val... 354 images, 0 backgrounds, 0 corrupt: 100%|██████████| 354/**

**val: New cache created: C:\Users\Ali\Desktop\ProjeV1\V8\labels\val.cache**

**Plotting labels to runs\detect\train2\labels.jpg...**

**optimizer: 'optimizer=auto' found, ignoring 'lr0=0.01' and 'momentum=0.937' and determining best 'optimizer', 'lr0' and 'momentum' automatically...**

**optimizer: AdamW(lr=0.002, momentum=0.9) 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 0 dataloader workers**

**Logging results to runs\detect\train2**

**Starting training for 150 epochs...**

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

 **1/150 1.11G 0.6015 1.212 1.13 7 640: 100%|██████████| 104/104 [00:48<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 0.903 0.963 0.98 0.794**

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

 **2/150 1.28G 0.6569 0.8911 1.161 7 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 22%|██▏ | 5/23 [00:03<0 Class Images Instances Box(P R mAP50 mAP50-95): 26%|██▌ | 6/23 [00:04<0 Class Images Instances Box(P R mAP50 mAP50-95): 30%|███ | 7/23 [00:05<0 Class Images Instances Box(P R mAP50 mAP50-95): 35%|███▍ | 8/23 [00:05<0 Class Images Instances Box(P R mAP50 mAP50-95): 39%|███▉ | 9/23 [00:06<0 Class Images Instances Box(P R mAP50 mAP50-95): 43%|████▎ | 10/23 [00:07< Class Images Instances Box(P R mAP50 mAP50-95): 48%|████▊ | 11/23 [00:07< Class Images Instances Box(P R mAP50 mAP50-95): 52%|█████▏ | 12/23 [00:08< Class Images Instances Box(P R mAP50 mAP50-95): 57%|█████▋ | 13/23 [00:09< Class Images Instances Box(P R mAP50 mAP50-95): 61%|██████ | 14/23 [00:09< Class Images Instances Box(P R mAP50 mAP50-95): 65%|██████▌ | 15/23 [00:10< Class Images Instances Box(P R mAP50 mAP50-95): 70%|██████▉ | 16/23 [00:11< Class Images Instances Box(P R mAP50 mAP50-95): 74%|███████▍ | 17/23 [00:12< Class Images Instances Box(P R mAP50 mAP50-95): 78%|███████▊ | 18/23 [00:12< Class Images Instances Box(P R mAP50 mAP50-95): 83%|████████▎ | 19/23 [00:13< Class Images Instances Box(P R mAP50 mAP50-95): 87%|████████▋ | 20/23 [00:14< Class Images Instances Box(P R mAP50 mAP50-95): 91%|█████████▏| 21/23 [00:15< Class Images Instances Box(P R mAP50 mAP50-95): 96%|█████████▌| 22/23 [00:15< Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15<00:00, 1.45it/s]**

 **all 354 354 0.994 0.998 0.995 0.888**

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

 **3/150 1.31G 0.6575 0.754 1.139 5 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 0.986 0.996 0.995 0.888**

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

 **4/150 1.32G 0.6535 0.6522 1.133 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 0.99 0.997 0.995 0.809**

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

 **5/150 1.34G 0.6094 0.5677 1.096 7 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 0.997 1 0.995 0.899**

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

 **6/150 1.36G 0.5888 0.5132 1.073 4 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 0.997 1 0.995 0.892**

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

 **7/150 1.37G 0.565 0.4723 1.079 2 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 0.973 0.994 0.994 0.894**

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

 **8/150 1.39G 0.5955 0.477 1.101 6 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.908**

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

 **9/150 1.41G 0.5746 0.4377 1.077 2 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 0.993 1 0.995 0.906**

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

 **10/150 1.42G 0.5289 0.4303 1.054 8 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.934**

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

 **11/150 1.44G 0.5323 0.4133 1.045 5 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.918**

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

 **12/150 1.46G 0.4937 0.3933 1.02 3 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.91**

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

 **13/150 1.47G 0.508 0.3879 1.043 3 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.938**

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

 **14/150 1.49G 0.4913 0.3754 1.03 2 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.942**

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

 **15/150 1.51G 0.4856 0.3821 1.029 5 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.94**

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

 **16/150 1.53G 0.4748 0.3593 1.008 4 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.946**

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

 **17/150 1.54G 0.4707 0.3503 1.021 6 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.944**

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

 **18/150 1.56G 0.4477 0.3353 1 3 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.938**

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

 **19/150 1.58G 0.4526 0.3416 1.019 5 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.939**

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

 **20/150 1.6G 0.4484 0.3393 1.003 8 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.946**

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

 **21/150 1.61G 0.4412 0.3307 1.005 7 640: 100%|██████████| 104/104 [00:44<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.941**

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

 **22/150 1.63G 0.4455 0.3376 1.005 2 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.948**

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

 **23/150 1.65G 0.4435 0.3275 1.012 5 640: 100%|██████████| 104/104 [00:44<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.962**

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

 **24/150 1.66G 0.4382 0.3184 1.004 4 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.962**

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

 **25/150 1.68G 0.4215 0.3231 0.9857 5 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.955**

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

 **26/150 1.7G 0.4539 0.3333 1.004 4 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.957**

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

 **27/150 1.71G 0.433 0.3125 0.989 6 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.959**

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

 **28/150 1.73G 0.4246 0.3141 0.9924 2 640: 100%|██████████| 104/104 [00:50<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.965**

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

 **29/150 1.75G 0.4279 0.3069 0.9866 3 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.963**

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

 **30/150 1.77G 0.4181 0.3074 0.9768 6 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 0.997 1 0.995 0.97**

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

 **31/150 1.78G 0.4193 0.305 0.9918 6 640: 100%|██████████| 104/104 [00:58<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.972**

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

 **32/150 1.8G 0.3977 0.2895 0.9809 2 640: 100%|██████████| 104/104 [01:21<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.963**

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

 **33/150 1.82G 0.3993 0.2902 0.9795 2 640: 100%|██████████| 104/104 [01:13<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.969**

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

 **34/150 1.83G 0.3868 0.2846 0.9695 3 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.967**

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

 **35/150 1.85G 0.3978 0.2903 0.9685 4 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.958**

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

 **36/150 1.87G 0.4031 0.2853 0.9805 5 640: 100%|██████████| 104/104 [01:17<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.967**

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

 **37/150 1.88G 0.4032 0.2881 0.9755 7 640: 100%|██████████| 104/104 [01:17<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:20**

 **all 354 354 1 1 0.995 0.963**

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

 **38/150 1.9G 0.4018 0.2918 0.9853 5 640: 100%|██████████| 104/104 [01:08<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 0.994 1 0.995 0.968**

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

 **39/150 1.92G 0.3938 0.2807 0.9687 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.977**

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

 **40/150 1.94G 0.3831 0.2787 0.968 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.966**

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

 **41/150 1.95G 0.3816 0.27 0.9705 6 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 0.999 1 0.995 0.976**

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

 **42/150 1.97G 0.3916 0.2787 0.9751 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.971**

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

 **43/150 1.99G 0.3903 0.2878 0.9779 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.977**

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

 **44/150 2G 0.361 0.2719 0.9545 6 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.968**

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

 **45/150 2.02G 0.3796 0.2809 0.9649 6 640: 100%|██████████| 104/104 [01:18<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.974**

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

 **46/150 2.04G 0.3716 0.2701 0.954 5 640: 100%|██████████| 104/104 [01:18<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.965**

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

 **47/150 2.05G 0.3716 0.2729 0.9696 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.974**

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

 **48/150 2.07G 0.3619 0.2596 0.9508 5 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 0.999 1 0.995 0.974**

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

 **49/150 2.09G 0.3745 0.2641 0.9713 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.969**

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

 **50/150 2.11G 0.3806 0.2637 0.9709 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.979**

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

 **51/150 2.12G 0.3524 0.2591 0.9484 6 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.972**

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

 **52/150 2.14G 0.3623 0.2504 0.9595 4 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.979**

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

 **53/150 2.16G 0.3722 0.2712 0.9575 7 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.974**

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

 **54/150 2.18G 0.3435 0.2537 0.9566 5 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.969**

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

 **55/150 2.19G 0.3496 0.2612 0.9508 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.973**

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

 **56/150 2.21G 0.3529 0.2494 0.9473 5 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.969**

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

 **57/150 2.22G 0.3496 0.2517 0.9585 2 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 0.998 1 0.995 0.977**

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

 **58/150 2.24G 0.3552 0.2534 0.9652 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.98**

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

 **59/150 2.26G 0.3368 0.2441 0.9476 4 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.977**

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

 **60/150 2.28G 0.3389 0.2458 0.9368 5 640: 100%|██████████| 104/104 [00:53<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.98**

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

 **61/150 2.29G 0.3513 0.2529 0.9474 5 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.976**

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

 **62/150 2.31G 0.3361 0.2451 0.9388 7 640: 100%|██████████| 104/104 [00:56<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.976**

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

 **63/150 2.33G 0.3507 0.2588 0.9567 1 640: 100%|██████████| 104/104 [01:12<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:28**

 **all 354 354 1 1 0.995 0.979**

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

 **64/150 2.35G 0.3471 0.2436 0.9429 2 640: 100%|██████████| 104/104 [01:20<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:28**

 **all 354 354 1 1 0.995 0.984**

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

 **65/150 2.36G 0.3363 0.2414 0.9423 4 640: 100%|██████████| 104/104 [01:20<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:28**

 **all 354 354 1 1 0.995 0.974**

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

 **66/150 2.38G 0.3356 0.2419 0.9438 7 640: 100%|██████████| 104/104 [01:02<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.979**

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

 **67/150 2.4G 0.338 0.2394 0.9448 4 640: 100%|██████████| 104/104 [00:50<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.977**

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

 **68/150 2.41G 0.3369 0.2406 0.9402 5 640: 100%|██████████| 104/104 [00:51<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.978**

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

 **69/150 2.43G 0.3247 0.234 0.9468 5 640: 100%|██████████| 104/104 [00:49<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.976**

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

 **70/150 2.45G 0.3208 0.2353 0.9371 4 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.979**

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

 **71/150 2.46G 0.3238 0.2343 0.9317 6 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.98**

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

 **72/150 2.48G 0.3255 0.2376 0.9373 8 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.984**

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

 **73/150 2.5G 0.326 0.2401 0.9465 4 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.985**

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

 **74/150 2.52G 0.3269 0.2366 0.9397 6 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.974**

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

 **75/150 2.53G 0.3208 0.2333 0.9395 3 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.98**

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

 **76/150 2.55G 0.3277 0.2417 0.9405 4 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.986**

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

 **77/150 2.57G 0.325 0.2275 0.94 7 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.983**

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

 **78/150 2.59G 0.3216 0.227 0.938 5 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.986**

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

 **79/150 2.6G 0.3131 0.2255 0.9316 3 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.983**

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

 **80/150 2.62G 0.3014 0.2181 0.9208 7 640: 100%|██████████| 104/104 [00:47<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.984**

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

 **81/150 2.64G 0.31 0.2154 0.9221 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.982**

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

 **82/150 2.65G 0.3079 0.2146 0.9248 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.983**

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

 **83/150 2.67G 0.3143 0.223 0.9265 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.984**

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

 **84/150 2.69G 0.3064 0.2167 0.9267 6 640: 100%|██████████| 104/104 [00:47<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:22**

 **all 354 354 1 1 0.995 0.988**

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

 **85/150 2.7G 0.3115 0.2155 0.9343 4 640: 100%|██████████| 104/104 [01:13<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:25**

 **all 354 354 0.999 1 0.995 0.983**

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

 **86/150 2.72G 0.3137 0.221 0.9312 6 640: 100%|██████████| 104/104 [01:13<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.98**

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

 **87/150 2.74G 0.3285 0.2362 0.9436 4 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.983**

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

 **88/150 2.76G 0.3032 0.2156 0.9204 6 640: 100%|██████████| 104/104 [01:20<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:28**

 **all 354 354 1 1 0.995 0.984**

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

 **89/150 2.77G 0.2915 0.2046 0.9209 8 640: 100%|██████████| 104/104 [01:20<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.985**

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

 **90/150 2.79G 0.3008 0.2169 0.9282 2 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:28**

 **all 354 354 1 1 0.995 0.983**

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

 **91/150 2.81G 0.2981 0.2115 0.9277 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.984**

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

 **92/150 2.82G 0.2946 0.2107 0.9183 2 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:25**

 **all 354 354 1 1 0.995 0.983**

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

 **93/150 2.84G 0.2982 0.2138 0.9224 3 640: 100%|██████████| 104/104 [01:13<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.985**

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

 **94/150 2.86G 0.2941 0.2117 0.923 3 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.983**

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

 **95/150 2.88G 0.2936 0.2097 0.9241 3 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:25**

 **all 354 354 1 1 0.995 0.984**

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

 **96/150 2.89G 0.2916 0.2078 0.9208 8 640: 100%|██████████| 104/104 [00:56<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.983**

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

 **97/150 2.91G 0.2896 0.208 0.9234 2 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.986**

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

 **98/150 2.93G 0.2892 0.2141 0.9208 1 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.984**

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

 **99/150 2.94G 0.3023 0.2073 0.92 7 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.986**

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

 **100/150 2.96G 0.2859 0.2046 0.9198 5 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.983**

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

 **101/150 2.98G 0.2929 0.1995 0.9255 4 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.983**

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

 **102/150 2.99G 0.2845 0.2007 0.9212 4 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.984**

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

 **103/150 3.01G 0.2792 0.1998 0.9236 6 640: 100%|██████████| 104/104 [00:54<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:18**

 **all 354 354 1 1 0.995 0.984**

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

 **104/150 3.03G 0.2712 0.194 0.9072 4 640: 100%|██████████| 104/104 [00:50<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.986**

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

 **105/150 3.04G 0.2917 0.1963 0.9235 2 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.986**

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

 **106/150 3.06G 0.2651 0.1937 0.9115 3 640: 100%|██████████| 104/104 [01:21<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:29**

 **all 354 354 1 1 0.995 0.989**

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

 **107/150 3.08G 0.2758 0.196 0.9134 4 640: 100%|██████████| 104/104 [01:22<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:29**

 **all 354 354 1 1 0.995 0.987**

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

 **108/150 3.1G 0.2855 0.1983 0.9191 5 640: 100%|██████████| 104/104 [01:21<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.986**

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

 **109/150 3.11G 0.2869 0.1975 0.9144 2 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.986**

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

 **110/150 3.13G 0.2801 0.1959 0.9158 3 640: 100%|██████████| 104/104 [01:11<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.989**

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

 **111/150 3.15G 0.2686 0.1928 0.909 8 640: 100%|██████████| 104/104 [01:13<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.988**

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

 **112/150 3.17G 0.276 0.1913 0.92 7 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.985**

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

 **113/150 3.18G 0.2585 0.1804 0.9112 3 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.985**

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

 **114/150 3.2G 0.2683 0.1848 0.9065 8 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.987**

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

 **115/150 3.22G 0.2695 0.1861 0.9025 5 640: 100%|██████████| 104/104 [00:47<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.984**

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

 **116/150 3.23G 0.2784 0.1961 0.9118 4 640: 100%|██████████| 104/104 [00:48<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.989**

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

 **117/150 3.25G 0.2658 0.1928 0.9168 4 640: 100%|██████████| 104/104 [01:02<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.987**

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

 **118/150 3.27G 0.2657 0.1904 0.9157 6 640: 100%|██████████| 104/104 [01:18<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:28**

 **all 354 354 1 1 0.995 0.988**

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

 **119/150 3.29G 0.2667 0.1858 0.9124 5 640: 100%|██████████| 104/104 [01:20<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:28**

 **all 354 354 1 1 0.995 0.983**

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

 **120/150 3.3G 0.2635 0.1867 0.9174 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.989**

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

 **121/150 3.32G 0.2634 0.1902 0.919 6 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.988**

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

 **122/150 3.34G 0.2577 0.1874 0.9084 2 640: 100%|██████████| 104/104 [01:14<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:27**

 **all 354 354 1 1 0.995 0.989**

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

 **123/150 3.35G 0.2663 0.1901 0.9117 3 640: 100%|██████████| 104/104 [01:16<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:26**

 **all 354 354 1 1 0.995 0.985**

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

 **124/150 3.37G 0.2577 0.1859 0.9014 3 640: 100%|██████████| 104/104 [01:15<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.984**

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

 **125/150 3.39G 0.259 0.1851 0.9089 3 640: 100%|██████████| 104/104 [00:49<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.986**

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

 **126/150 3.4G 0.2609 0.1831 0.907 4 640: 100%|██████████| 104/104 [00:51<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:18**

 **all 354 354 1 1 0.995 0.987**

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

 **127/150 3.42G 0.2542 0.1787 0.9036 3 640: 100%|██████████| 104/104 [00:49<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.988**

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

 **128/150 3.44G 0.2572 0.1782 0.9027 4 640: 100%|██████████| 104/104 [00:49<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.988**

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

 **129/150 3.46G 0.2576 0.1799 0.9065 4 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

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

 **130/150 3.47G 0.2579 0.1843 0.9061 7 640: 100%|██████████| 104/104 [00:47<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

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

 **131/150 3.49G 0.2526 0.1788 0.9058 4 640: 100%|██████████| 104/104 [00:53<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:20**

 **all 354 354 1 1 0.995 0.989**

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

 **132/150 3.51G 0.2512 0.1798 0.9053 6 640: 100%|██████████| 104/104 [00:57<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.988**

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

 **133/150 3.52G 0.2463 0.1761 0.9073 3 640: 100%|██████████| 104/104 [00:54<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.987**

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

 **134/150 3.54G 0.2413 0.1735 0.9039 5 640: 100%|██████████| 104/104 [00:51<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.988**

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

 **135/150 3.56G 0.2454 0.1712 0.8932 7 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

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

 **136/150 3.58G 0.2493 0.1766 0.9037 5 640: 100%|██████████| 104/104 [00:48<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.989**

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

 **137/150 3.59G 0.2381 0.1736 0.9022 3 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.99**

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

 **138/150 3.61G 0.2364 0.1707 0.9005 3 640: 100%|██████████| 104/104 [00:47<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.99**

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

 **139/150 3.63G 0.2415 0.1728 0.9007 3 640: 100%|██████████| 104/104 [00:47<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

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

 **140/150 3.64G 0.2443 0.1709 0.9006 6 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

**Closing dataloader mosaic**

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

 **141/150 3.66G 0.1738 0.1161 0.8396 2 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.988**

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

 **142/150 3.68G 0.17 0.1152 0.8338 2 640: 100%|██████████| 104/104 [00:48<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:19**

 **all 354 354 1 1 0.995 0.988**

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

 **143/150 3.7G 0.1709 0.1144 0.8348 2 640: 100%|██████████| 104/104 [00:52<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.989**

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

 **144/150 3.71G 0.1685 0.1115 0.8384 2 640: 100%|██████████| 104/104 [00:49<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.99**

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

 **145/150 3.73G 0.1695 0.1104 0.8252 2 640: 100%|██████████| 104/104 [00:49<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.99**

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

 **146/150 3.75G 0.1689 0.1126 0.8372 2 640: 100%|██████████| 104/104 [00:51<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:17**

 **all 354 354 1 1 0.995 0.988**

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

 **147/150 3.76G 0.1637 0.1087 0.8404 2 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:15**

 **all 354 354 1 1 0.995 0.987**

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

 **148/150 3.78G 0.1631 0.1083 0.8348 2 640: 100%|██████████| 104/104 [00:45<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

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

 **149/150 3.8G 0.1631 0.1085 0.8321 2 640: 100%|██████████| 104/104 [00:46<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

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

 **150/150 3.81G 0.1622 0.1076 0.8379 2 640: 100%|██████████| 104/104 [00:47<00:00,**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.989**

**150 epochs completed in 3.244 hours.**

**Optimizer stripped from runs\detect\train2\weights\last.pt, 6.3MB**

**Optimizer stripped from runs\detect\train2\weights\best.pt, 6.3MB**

**Validating runs\detect\train2\weights\best.pt...**

**Ultralytics 8.3.108 🚀 Python-3.13.3 torch-2.6.0+cu118 CUDA:0 (NVIDIA GeForce RTX 4050 Laptop GPU, 6140MiB)**

**Model summary (fused): 72 layers, 3,005,843 parameters, 0 gradients, 8.1 GFLOPs**

 **Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 23/23 [00:16**

 **all 354 354 1 1 0.995 0.99**

**Speed: 0.3ms preprocess, 1.9ms inference, 0.0ms loss, 0.7ms postprocess per image**

**Results saved to runs\detect\train2**

**🚀 Eğitim tamamlandı! Model başarıyla eğitildi.**

**C:\Users\Ali\Desktop\ProjeV1\V8>**