Ultralytics 8.3.8 🚀 Python-3.10.12 torch-2.4.1+cu121 CUDA:0 (Tesla T4, 15102MiB)

**engine/trainer:** task=detect, mode=train, model=yolov8n.yaml, data=box-counting-4/data.yaml, epochs=100, time=None, patience=5, batch=16, imgsz=640, save=True, save\_period=-1, cache=False, device=[0], workers=8, project=None, name=train, exist\_ok=False, pretrained=True, 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, save\_hybrid=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=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, bgr=0.0, mosaic=1.0, mixup=0.0, copy\_paste=0.0, copy\_paste\_mode=flip, auto\_augment=randaugment, erasing=0.4, crop\_fraction=1.0, cfg=None, tracker=botsort.yaml, save\_dir=runs/detect/train

Downloading <https://ultralytics.com/assets/Arial.ttf> to '/root/.config/Ultralytics/Arial.ttf'...

100%|██████████| 755k/755k [00:00<00:00, 25.6MB/s]

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 430867 ultralytics.nn.modules.head.Detect [1, [64, 128, 256]]

YOLOv8n summary: 249 layers, 2,690,403 parameters, 2,690,387 gradients, 6.9 GFLOPs

**TensorBoard:** Start with 'tensorboard --logdir runs/detect/train', view at <http://localhost:6006/>

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

**AMP:** running Automatic Mixed Precision (AMP) checks with YOLO11n...

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

100%|██████████| 5.35M/5.35M [00:00<00:00, 101MB/s]

**AMP:** checks passed ✅

**train:** Scanning /content/box-counting-4/train/labels... 8331 images, 537 backgrounds, 0 corrupt: 100%|██████████| 8331/8331 [00:04<00:00, 1899.28it/s]

**train:** New cache created: /content/box-counting-4/train/labels.cache

WARNING ⚠️ Box and segment counts should be equal, but got len(segments) = 253, len(boxes) = 43097. To resolve this only boxes will be used and all segments will be removed. To avoid this please supply either a detect or segment dataset, not a detect-segment mixed dataset.

**albumentations:** Blur(p=0.01, blur\_limit=(3, 7)), MedianBlur(p=0.01, blur\_limit=(3, 7)), ToGray(p=0.01, num\_output\_channels=3, method='weighted\_average'), CLAHE(p=0.01, clip\_limit=(1, 4.0), tile\_grid\_size=(8, 8))

A new version of Albumentations is available: 1.4.18 (you have 1.4.15). Upgrade using: pip install -U albumentations. To disable automatic update checks, set the environment variable NO\_ALBUMENTATIONS\_UPDATE to 1.

**val:** Scanning /content/box-counting-4/valid/labels... 1383 images, 91 backgrounds, 0 corrupt: 100%|██████████| 1383/1383 [00:01<00:00, 1002.49it/s]

**val:** New cache created: /content/box-counting-4/valid/labels.cache

WARNING ⚠️ Box and segment counts should be equal, but got len(segments) = 23, len(boxes) = 7381. To resolve this only boxes will be used and all segments will be removed. To avoid this please supply either a detect or segment dataset, not a detect-segment mixed dataset.

Plotting labels to runs/detect/train/labels.jpg...

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

**optimizer:** SGD(lr=0.01, momentum=0.9) with parameter groups 63 weight(decay=0.0), 70 weight(decay=0.0005), 69 bias(decay=0.0)

**TensorBoard:** model graph visualization added ✅

Image sizes 640 train, 640 val

Using 2 dataloader workers

Logging results to **runs/detect/train**

Starting training for 100 epochs...

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

1/100 2.64G 2.543 2.651 3.599 94 640: 100%|██████████| 521/521 [02:52<00:00, 3.01it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:16<00:00, 2.72it/s]

all 1383 7381 0.865 0.779 0.891 0.66

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

2/100 2.35G 1.06 0.9608 1.837 122 640: 100%|██████████| 521/521 [02:53<00:00, 3.00it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:14<00:00, 3.14it/s]

all 1383 7381 0.968 0.943 0.973 0.844

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

3/100 2.36G 0.7446 0.65 1.401 98 640: 100%|██████████| 521/521 [02:48<00:00, 3.09it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.57it/s]

all 1383 7381 0.984 0.963 0.977 0.867

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

4/100 2.39G 0.6434 0.5206 1.279 101 640: 100%|██████████| 521/521 [02:47<00:00, 3.11it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.19it/s]

all 1383 7381 0.994 0.96 0.977 0.877

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

5/100 2.45G 0.5867 0.4417 1.222 95 640: 100%|██████████| 521/521 [02:41<00:00, 3.22it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.20it/s]

all 1383 7381 0.993 0.967 0.984 0.883

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

6/100 2.41G 0.561 0.4038 1.194 90 640: 100%|██████████| 521/521 [02:49<00:00, 3.08it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.17it/s]

all 1383 7381 0.98 0.945 0.973 0.871

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

7/100 2.4G 0.5409 0.3764 1.177 104 640: 100%|██████████| 521/521 [02:48<00:00, 3.10it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.46it/s]

all 1383 7381 0.994 0.969 0.986 0.892

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

8/100 2.39G 0.5284 0.3615 1.165 120 640: 100%|██████████| 521/521 [02:50<00:00, 3.06it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.16it/s]

all 1383 7381 0.994 0.966 0.985 0.892

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

9/100 2.43G 0.5219 0.3502 1.159 86 640: 100%|██████████| 521/521 [02:51<00:00, 3.05it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:14<00:00, 3.12it/s]

all 1383 7381 0.995 0.964 0.986 0.895

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

10/100 2.33G 0.5159 0.3433 1.154 97 640: 100%|██████████| 521/521 [02:47<00:00, 3.11it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.49it/s]

all 1383 7381 0.991 0.971 0.99 0.9

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

11/100 2.52G 0.5059 0.3289 1.146 102 640: 100%|██████████| 521/521 [02:49<00:00, 3.08it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:14<00:00, 3.08it/s]

all 1383 7381 0.991 0.972 0.99 0.902

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

12/100 2.43G 0.4972 0.3211 1.141 90 640: 100%|██████████| 521/521 [02:49<00:00, 3.07it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.58it/s]

all 1383 7381 0.994 0.97 0.989 0.9

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

13/100 2.45G 0.495 0.3143 1.14 105 640: 100%|██████████| 521/521 [02:46<00:00, 3.13it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:14<00:00, 3.09it/s]

all 1383 7381 0.993 0.969 0.989 0.901

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

14/100 2.32G 0.4917 0.308 1.137 77 640: 100%|██████████| 521/521 [02:47<00:00, 3.10it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.48it/s]

all 1383 7381 0.992 0.97 0.99 0.907

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

15/100 2.28G 0.4884 0.3081 1.133 129 640: 100%|██████████| 521/521 [02:46<00:00, 3.13it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:14<00:00, 3.14it/s]

all 1383 7381 0.989 0.974 0.99 0.904

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

16/100 2.35G 0.4853 0.3014 1.125 99 640: 100%|██████████| 521/521 [02:46<00:00, 3.13it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.40it/s]

all 1383 7381 0.992 0.967 0.988 0.903

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

17/100 2.32G 0.4828 0.298 1.129 71 640: 100%|██████████| 521/521 [02:47<00:00, 3.12it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:14<00:00, 3.11it/s]

all 1383 7381 0.992 0.973 0.991 0.906

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

18/100 2.32G 0.4796 0.29 1.12 93 640: 100%|██████████| 521/521 [02:49<00:00, 3.07it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.50it/s]

all 1383 7381 0.992 0.967 0.989 0.908

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

19/100 2.34G 0.4782 0.2884 1.124 105 640: 100%|██████████| 521/521 [02:46<00:00, 3.13it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.24it/s]

all 1383 7381 0.992 0.974 0.991 0.906

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

20/100 2.46G 0.4763 0.2881 1.119 93 640: 100%|██████████| 521/521 [02:49<00:00, 3.08it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.56it/s]

all 1383 7381 0.991 0.976 0.991 0.911

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

21/100 2.37G 0.4721 0.2822 1.114 110 640: 100%|██████████| 521/521 [02:43<00:00, 3.18it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.18it/s]

all 1383 7381 0.992 0.976 0.991 0.911

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

22/100 2.3G 0.4692 0.2779 1.114 79 640: 100%|██████████| 521/521 [02:46<00:00, 3.13it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:11<00:00, 3.74it/s]

all 1383 7381 0.993 0.974 0.991 0.913

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

23/100 2.32G 0.4702 0.2796 1.115 71 640: 100%|██████████| 521/521 [02:44<00:00, 3.16it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.27it/s]

all 1383 7381 0.992 0.977 0.991 0.912

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

24/100 2.43G 0.4651 0.2756 1.119 132 640: 100%|██████████| 521/521 [02:43<00:00, 3.18it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.36it/s]

all 1383 7381 0.993 0.976 0.991 0.913

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

25/100 2.45G 0.467 0.2755 1.11 91 640: 100%|██████████| 521/521 [02:44<00:00, 3.17it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.55it/s]

all 1383 7381 0.991 0.976 0.99 0.91

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

26/100 2.55G 0.4641 0.275 1.105 81 640: 100%|██████████| 521/521 [02:45<00:00, 3.15it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.15it/s]

all 1383 7381 0.99 0.979 0.991 0.911

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

27/100 2.31G 0.4645 0.2707 1.107 101 640: 100%|██████████| 521/521 [02:47<00:00, 3.11it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.43it/s]

all 1383 7381 0.988 0.977 0.991 0.913

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

28/100 2.44G 0.4626 0.2696 1.108 94 640: 100%|██████████| 521/521 [02:45<00:00, 3.15it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.30it/s]

all 1383 7381 0.991 0.978 0.991 0.915

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

29/100 2.34G 0.4601 0.2661 1.105 100 640: 100%|██████████| 521/521 [02:44<00:00, 3.17it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.58it/s]

all 1383 7381 0.992 0.972 0.99 0.911

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

30/100 2.41G 0.4571 0.2649 1.101 120 640: 100%|██████████| 521/521 [02:44<00:00, 3.16it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.16it/s]

all 1383 7381 0.99 0.98 0.991 0.915

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

31/100 2.41G 0.4556 0.2631 1.099 98 640: 100%|██████████| 521/521 [02:46<00:00, 3.12it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:11<00:00, 3.75it/s]

all 1383 7381 0.99 0.979 0.991 0.916

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

32/100 2.43G 0.4573 0.2625 1.103 79 640: 100%|██████████| 521/521 [02:49<00:00, 3.06it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:14<00:00, 3.12it/s]

all 1383 7381 0.992 0.975 0.992 0.913

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

33/100 2.32G 0.4542 0.2601 1.1 101 640: 100%|██████████| 521/521 [02:42<00:00, 3.20it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:12<00:00, 3.46it/s]

all 1383 7381 0.991 0.98 0.991 0.916

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

34/100 2.43G 0.4544 0.2575 1.107 113 640: 100%|██████████| 521/521 [02:45<00:00, 3.15it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.21it/s]

all 1383 7381 0.991 0.977 0.991 0.916

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

35/100 2.38G 0.4534 0.2577 1.099 83 640: 100%|██████████| 521/521 [02:44<00:00, 3.17it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.18it/s]

all 1383 7381 0.993 0.978 0.991 0.915

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

36/100 2.35G 0.4487 0.2512 1.094 84 640: 100%|██████████| 521/521 [02:43<00:00, 3.18it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:11<00:00, 3.94it/s]

all 1383 7381 0.993 0.975 0.992 0.921

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

37/100 2.34G 0.4508 0.2526 1.093 124 640: 100%|██████████| 521/521 [02:44<00:00, 3.17it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.32it/s]

all 1383 7381 0.993 0.975 0.992 0.921

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

38/100 2.31G 0.4518 0.2527 1.096 79 640: 100%|██████████| 521/521 [02:41<00:00, 3.23it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.29it/s]

all 1383 7381 0.99 0.976 0.991 0.917

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

39/100 2.39G 0.4485 0.2511 1.089 128 640: 100%|██████████| 521/521 [02:41<00:00, 3.22it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:11<00:00, 3.80it/s]

all 1383 7381 0.991 0.978 0.992 0.917

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

40/100 2.32G 0.4475 0.2493 1.095 61 640: 100%|██████████| 521/521 [02:38<00:00, 3.29it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.22it/s]

all 1383 7381 0.991 0.98 0.992 0.92

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

41/100 2.32G 0.4493 0.2501 1.089 87 640: 100%|██████████| 521/521 [02:43<00:00, 3.19it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:13<00:00, 3.27it/s]

all 1383 7381 0.99 0.977 0.991 0.919

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

42/100 2.41G 0.4521 0.2509 1.093 110 640: 100%|██████████| 521/521 [02:44<00:00, 3.17it/s]

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:11<00:00, 3.92it/s]

all 1383 7381 0.991 0.974 0.991 0.917

**EarlyStopping:** Training stopped early as no improvement observed in last 5 epochs. Best results observed at epoch 37, best model saved as best.pt.

To update EarlyStopping(patience=5) pass a new patience value, i.e. `patience=300` or use `patience=0` to disable EarlyStopping.

42 epochs completed in 2.106 hours.

Optimizer stripped from runs/detect/train/weights/last.pt, 5.6MB

Optimizer stripped from runs/detect/train/weights/best.pt, 5.6MB

Validating runs/detect/train/weights/best.pt...

WARNING ⚠️ validating an untrained model YAML will result in 0 mAP.

Ultralytics 8.3.8 🚀 Python-3.10.12 torch-2.4.1+cu121 CUDA:0 (Tesla T4, 15102MiB)

YOLOv8n summary (fused): 186 layers, 2,684,563 parameters, 0 gradients, 6.8 GFLOPs

Class Images Instances Box(P R mAP50 mAP50-95): 100%|██████████| 44/44 [00:17<00:00, 2.54it/s]

all 1383 7381 0.993 0.976 0.992 0.921

Speed: 0.3ms preprocess, 2.2ms inference, 0.0ms loss, 1.7ms postprocess per image

Results saved to **runs/detect/train**