Import necessary libraries

```
In [9]: import torch
    from ultralytics import YOLO
    import numpy as np
    import os
    import random
    import glob
    import shutil
    import json
    import yaml
    from pprint import pprint
    from pathlib import Path
```

Check CUDA availability

```
In [10]: # Check if CUDA is available
    cuda_available = torch.cuda.is_available()
    print("CUDA Available:", cuda_available)

# If CUDA is available, print details
    if cuda_available:
        DEVICE = torch.cuda.current_device()
        device_name = torch.cuda.get_device_name(DEVICE)
        print(f"Device Name: {device_name}")

else:
        print("CUDA is not available. Please check your GPU drivers and CUDA ins
```

Global Configurations

Device Name: NVIDIA GeForce RTX 5070 Ti

```
In []: # Set the random seed for reproducibility
RANDOM_SEED = 300188

random.seed(RANDOM_SEED)
np.random.seed(RANDOM_SEED)
torch.manual_seed(RANDOM_SEED)
torch.cuda.manual_seed_all(RANDOM_SEED)

# Dataset directory
DATASET_DIR = "datasets/Vehicle-License-Plate-Detection"
# YAML config for dataset splits and class names
DATA_YAML = os.path.join(DATASET_DIR, "data.yaml")

# Unique project identifier
PROJECT_NAME = "vehicle-license-plate-detection"
# Which version of the dataset to use
```

```
DATASET_VERSION = "near-complete"

# Tag for this set of hyperparameters / training settings

EXPERIMENT_NAME = "imgsz640-500"

RUN_DIR = os.path.join(PROJECT_NAME, DATASET_VERSION, EXPERIMENT_NAME)

# Base folder for saving evaluation outputs

EVALUATION_DIR = os.path.join(RUN_DIR, "evaluation")

# Base folder for saving model architecture & hyperparameters

ARCHITECTURE_DIR = os.path.join(RUN_DIR, "architecture")

# Location of the best-performing weights file of the trained model

TRAINED_MODEL_WEIGHTS = os.path.join(RUN_DIR, "weights/best.onnx")
```

Dataset Splitting

```
In [17]: # —— CONFIG -
         TRAIN IMG DIR = os.path.join(DATASET DIR, "train", "images")
         TRAIN LBL DIR = os.path.join(DATASET DIR, "train", "labels")
         VAL_IMG_DIR = os.path.join(DATASET_DIR, "valid", "images")
VAL_LBL_DIR = os.path.join(DATASET_DIR, "valid", "labels")
         TEST_IMG_DIR = os.path.join(DATASET_DIR, "test", "images")
         TEST_LBL_DIR = os.path.join(DATASET_DIR, "test", "labels")
         # Split ratios
         TRAIN RATIO = 7
         VAL RATIO = 1
         # (we leave TEST untouched, so its ratio of 2/10 is implicit)
         RANDOM SEED = 42
         random.seed(RANDOM SEED)
         # 📶 Ensure split directories exist
         for d in (TRAIN IMG DIR, TRAIN LBL DIR, VAL IMG DIR, VAL LBL DIR):
             os.makedirs(d, exist ok=True)
         # 🙎 Gather current train & valid images
         train imgs before = glob.glob(os.path.join(TRAIN IMG DIR, "*.jpg")) + \
                              glob.glob(os.path.join(TRAIN_IMG_DIR, "*.png"))
                                                                     "*.jpg")) + \
         val imgs before = glob.glob(os.path.join(VAL IMG DIR,
                              glob.glob(os.path.join(VAL IMG DIR,
                                                                     "*.png"))
         # 🗿 Compute how many should be in valid after split
         total train valid = len(train imgs before) + len(val imgs before)
         desired val count = int(total train valid * VAL RATIO / (TRAIN RATIO + VAL F
         n val to move = max(0, desired val count - len(val imgs before))
         # 🗿 Shuffle and pick from train
         random.shuffle(train imgs before)
         val selection = train imgs before[:n val to move]
         # 5 Move images & corresponding labels
         for img path in val selection:
              fname
                    = os.path.basename(img path)
```

```
stem = os.path.splitext(fname)[0]
            lbl src = os.path.join(TRAIN_LBL_DIR, stem + ".txt")
            # image → valid/images
            shutil.move(img path, os.path.join(VAL IMG DIR, fname))
            # label → valid/labels (if exists)
            if os.path.exists(lbl src):
                 shutil.move(lbl src, os.path.join(VAL LBL DIR, stem + ".txt"))
        # 6 Report final counts
        final train count = len(glob.glob(os.path.join(TRAIN IMG DIR, "*.jpg"))) + \
                             len(glob.glob(os.path.join(TRAIN IMG DIR,
                                                                        "*.png")))
                                                                        "*.jpg"))) + \
                          = len(glob.glob(os.path.join(VAL IMG DIR,
        final val count
                                                                        "*.png")))
                             len(glob.glob(os.path.join(VAL IMG DIR,
        final test count = len(glob.glob(os.path.join(TEST IMG DIR, "*.jpg"))) + \
                             len(glob.glob(os.path.join(TEST IMG DIR, "*.png")))
        print("Split complete:")
        print(f" train: {final train count} images")
        print(f" valid: {final val count} images")
        print(f" test : {final test count} images")
       Split complete:
         train: 1279 images
         valid: 182 images
         test : 253 images
In [ ]: # —— CONFIG —
        TRAIN IMG DIR = os.path.join(DATASET DIR, "train", "images")
        TRAIN_LBL_DIR = os.path.join(DATASET_DIR, "valid", "images")
VAL_IMG_DIR = os.path.join(DATASET_DIR, "valid", "labels")
        TEST IMG DIR = os.path.join(DATASET DIR, "test", "images")
        TEST_LBL_DIR = os.path.join(DATASET_DIR, "test", "labels")
        # Split ratios (train:7, val:2, test:1) out of total parts
        VAL RATIO = 2
        # Ensure reproducibility
        random.seed(RANDOM SEED)
        # 1 Ensure all split directories exist
        for d in (TRAIN IMG DIR, TRAIN LBL DIR, VAL IMG DIR, VAL LBL DIR, TEST IMG D
            os.makedirs(d, exist ok=True)
        # 🙎 Count current images in each split
        train imgs before = glob.glob(os.path.join(TRAIN IMG DIR, "*.jpg")) + glob.g
                                                                    "*.jpg")) + glob.g
        val imgs before = glob.glob(os.path.join(VAL IMG DIR,
        test imgs before = glob.glob(os.path.join(TEST IMG DIR,
                                                                    "*.jpg")) + glob.c
        total images = len(train imgs before) + len(val imgs before) + len(test imgs
        # Desired count for validation based on overall ratio
        desired val = int(total images * VAL RATIO / 10)
        # 3 Shuffle remaining train images
```

```
all train imgs = train imgs before.copy()
 random.shuffle(all train imgs)
 # 🗿 Determine how many to move into validation
 n val to move = max(0, desired val - len(val imgs before))
 val to move = all train imgs[:n val to move]
 # 5 Move selected images and corresponding labels
 for img path in val to move:
    fname = os.path.basename(img path)
     stem = os.path.splitext(fname)[0]
     lbl src = os.path.join(TRAIN LBL DIR, stem + ".txt")
     # Move image file to validation folder
     shutil.move(img path, os.path.join(VAL IMG DIR, fname))
     # Move label file if it exists
     if os.path.exists(lbl src):
         shutil.move(lbl src, os.path.join(VAL_LBL_DIR, stem + ".txt"))
 # 6 Report final counts
 final train count = len(glob.glob(os.path.join(TRAIN IMG DIR, "*.jpg"))) + l
 final val count = len(glob.glob(os.path.join(VAL IMG DIR, "*.jpg"))) + l
 final test count = len(glob.glob(os.path.join(TEST IMG DIR, "*.jpg"))) + l
 print("Split complete:")
 print(f" train: {final train count} images")
 print(f" valid: {final val count} images")
 print(f" test: {final test count} images")
Split complete:
 train: 1290 images
  valid: 171 images
 test: 253 images
```

Ensure full path dataset in data.yaml

```
new path = Path(orig)
     # Convert to forward-slash style
     path str = new path.as posix()
     # Ensure drive letter is uppercase (e.g. 'c:/...' → 'C:/...')
     if len(path_str) >= 2 and path_str[1] == ':' and path_str[0].islower():
         path str = path str[0].upper() + path str[1:]
     config[split] = path str
 print("\nUpdated paths:")
 pprint({k: config.get(k) for k in ("train", "val", "test")})
 # 3 Overwrite data.yaml in place
 with open(DATA YAML, "w") as f:
     yaml.dump(config, f, sort keys=False)
 print(f"\nModified YAML saved directly to '{DATA YAML}'")
Original paths:
{'test': '../test/images', 'train': '../train/images', 'val': '../valid/imag
es'}
Updated paths:
{'test': 'C:/Users/herma/dev/IS/yolo/datasets/Vehicle-License-Plate-Detectio
n/test/images',
 'train': 'C:/Users/herma/dev/IS/yolo/datasets/Vehicle-License-Plate-Detecti
on/train/images',
 'val': 'C:/Users/herma/dev/IS/yolo/datasets/Vehicle-License-Plate-Detectio
n/valid/images'}
Modified YAML saved directly to 'datasets/Vehicle-License-Plate-Detection\da
ta.yaml'
```

Hyperparameter Tuning

```
In [24]: NUMBER OF EPOCHS = 500
         IMAGE SIZE = 640
         BATCH SIZE = 16
         PATIENCE = 50
         NUM OF WORKERS = 8
In [25]: HYPERPARAMS = {
             "project": PROJECT NAME, # Name of the project
             "name": os.path.join(DATASET VERSION, EXPERIMENT NAME), # Name of the t
             "data": DATA YAML, # Path to the dataset configuration file
             "epochs": NUMBER OF EPOCHS, # Number of epochs to train for
             "imgsz": IMAGE SIZE, # Image size for training (640x640 pixels)
             "batch": BATCH SIZE, # Batch size
             "device": DEVICE, # Use GPU if available, otherwise set to -1 for CPU,
             "patience": PATIENCE, # Number of epochs with no improvement after which
             "cache": "disk", # Cache images for faster training
             "workers": NUM OF WORKERS, # Number of data loading workers
```

Model Training

New https://pypi.org/project/ultralytics/8.3.133 available Update with 'pip install -U ultralytics'

Ultralytics 8.3.131 Python-3.13.3 torch-2.7.0+cu128 CUDA:0 (NVIDIA GeForce RTX 5070 Ti, 16303MiB)

engine\trainer: agnostic nms=False, amp=True, augment=False, auto augment=ra ndaugment, batch=16, bgr=0.0, box=7.5, cache=disk, cfg=None, classes=None, c lose mosaic=10, cls=0.5, conf=None, copy paste=0.0, copy paste mode=flip, co s lr=False, cutmix=0.0, data=datasets/Vehicle-License-Plate-Detection\data.y aml, degrees=0.0, deterministic=True, device=0, dfl=1.5, dnn=False, dropout= 0.0, dynamic=False, embed=None, epochs=500, erasing=0.4, exist ok=False, fli plr=0.5, flipud=0.0, format=torchscript, fraction=1.0, freeze=None, half=Fal se, hsv h=0.015, hsv s=0.7, hsv v=0.4, imgsz=640, int8=False, iou=0.7, keras =False, kobj=1.0, line width=None, lr0=0.01, lrf=0.01, mask ratio=4, max det =300, mixup=0.0, mode=train, model=yolo pretrained/yolov8n.pt, momentum=0.93 7, mosaic=1.0, multi scale=False, name=imgsz640-2, nbs=64, nms=False, opset= None, optimize=False, optimizer=auto, overlap mask=True, patience=50, perspe ctive=0.0, plots=True, pose=12.0, pretrained=True, profile=False, project=ve hicle-license-plate-detection, rect=False, resume=False, retina masks=False, save=True, save conf=False, save crop=False, save dir=vehicle-license-platedetection\near-complete\imgsz640-2, save frames=False, save json=False, save period=-1, save txt=False, scale=0.5, seed=0, shear=0.0, show=False, show b oxes=True, show conf=True, show labels=True, simplify=True, single cls=Fals e, source=None, split=val, stream buffer=False, task=detect, time=None, trac ker=botsort.yaml, translate=0.1, val=True, verbose=True, vid stride=1, visua lize=False, warmup bias lr=0.1, warmup epochs=3.0, warmup momentum=0.8, weig ht decay=0.0005, workers=8, workspace=None

Overriding model.yaml nc=80 with nc=2

	rom	n	params	module
arguments	-		46.4	
0 [3, 16, 3, 2]	-1	1	464	ultralytics.nn.modules.conv.Conv
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 [384, 128, 1]	-1	1	148224	ultralytics.nn.modules.block.C2f

```
13
                                  0 torch.nn.modules.upsampling.Upsample
                    -1 1
[None, 2, 'nearest']
 14
               [-1, 4] 1
                                  0 ultralytics.nn.modules.conv.Concat
[1]
                        1
                              37248 ultralytics.nn.modules.block.C2f
 15
                    - 1
[192, 64, 1]
                    -1 1
                              36992 ultralytics.nn.modules.conv.Conv
 16
[64, 64, 3, 2]
                                  0 ultralytics.nn.modules.conv.Concat
17
              [-1, 12] 1
[1]
                    -1 1
 18
                             123648 ultralytics.nn.modules.block.C2f
[192, 128, 1]
                             147712 ultralytics.nn.modules.conv.Conv
19
                    -1 1
[128, 128, 3, 2]
                                  0 ultralytics.nn.modules.conv.Concat
 20
               [-1, 9] 1
[1]
 21
                    -1 1
                             493056 ultralytics.nn.modules.block.C2f
[384, 256, 1]
                             751702 ultralytics.nn.modules.head.Detect
          [15, 18, 21] 1
[2, [64, 128, 256]]
Model summary: 129 layers, 3,011,238 parameters, 3,011,222 gradients, 8.2 GF
L0Ps
Transferred 319/355 items from pretrained weights
Freezing layer 'model.22.dfl.conv.weight'
AMP: running Automatic Mixed Precision (AMP) checks...
AMP: checks passed
train: Fast image access (ping: 0.00.0 ms, read: 437.6380.2 MB/s, size: 29
7.7 KB)
train: Scanning C:\Users\herma\dev\IS\yolo\datasets\Vehicle-License-Plate-De
tection\train\labels.cache... 1279 images, 0 backgrounds, 0 corrupt: 100%|
| 1279/1279 [00:00<?, ?it/s]
train: Caching images (22.0GB Disk): 100%| 1279/1279 [00:00<00:0
0, 84196.80it/s]
val: Fast image access (ping: 0.10.0 ms, read: 153.0149.8 MB/s, size: 561.1
KB)
val: Scanning C:\Users\herma\dev\IS\yolo\datasets\Vehicle-License-Plate-Dete
ction\valid\labels.cache... 182 images, 0 backgrounds, 0 corrupt: 100%
| 182/182 [00:00<?, ?it/s]
val: Caching images (3.2GB Disk): 100%| 182/182 [00:00<00:00, 120]</pre>
309.43it/s]
Plotting labels to vehicle-license-plate-detection\near-complete\imgsz640-2
\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=0.001667, 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 8 dataloader workers
Logging results to vehicle-license-plate-detection\near-complete\imgsz640-2
Starting training for 500 epochs...
```

۵.	1/500 100%	2.06G	1.023 0 [00:06<0	1.634		156	64
		Class	Images	Instances	Box(P		mAP5
0	mAP50-95):	100% all	182	715	.00, 6.23it 0.811	0.331	0.63
6	0.408						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	2/500	2.07G		1.126		164	64
0:	100%		0 [00:05<0		Bit/s] Box(P	R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00	:00, 8.59i1	:/s]	
9	0.416	all	182	715	0.713	0.626	0.67
9		GPU mem	box loss	cls loss	dfl loss	Instances	Siz
е	_p	<u> </u>	207_	010_1000	u		
•	3/500				1.223	130	64
0:	100%		0 [00:05<0 Images		Box(P	R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00	:00, 8.71it	:/s]	
3	0.392	all	182	715	0.702	0.615	0.65
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	4/500	2.09G	1.112	1 025	1.217	133	64
0:	100%					133	04
0	mAP50-95):				Box(P :00, 8.76i1	R :/s]	mAP5
9	0.431	all	182	715	0.726		0.70
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	- /						
0:	5/500 100%	2.09G	1.062 0 [00:05<0	0.9474 0:00. 14.72		151	64
0.		Class	Images	Instances	Box(P		mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00	.00, 8.22i1 0.815	0.738	0.78
9	0.503	acc	102	713	0.013	0.750	0.76
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	C (F00	2 116	1 057	0.0160	1 107	110	C 4
0:	6/500 100%	2.11G 80/8	1.057 0 [00:05<0	0.9162 9:00. 14.4		110	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	182	[00:00<00 715	.00, 8.67i1 0.711	0.658	0.67
8	0.42	acc	102	713	0.711	0.050	0.07
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	7/500	2.11G	1.03	0.8599	1.18	127	64
0:	100%	80/8 Class	0 [00:05<0			D	m A D E
0	mAP50-95):			Instances [00:00<00		R :/s]	mAP5

3	0.492	all	182	715	0.833	0.721	0.78
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	8/500 100%	2.11G	1.023 30 [00:05<00	0.8389 0:00. 14.09		103	64
0		Class	Images 6/6	Instances	Box(P	R /s]	mAP5
5	0.503	all	182	715	0.848	0.716	0.78
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	9/500 100%	2.12G 80/8	1.007 30 [00:05<00	0.8178 9:00, 13.62		104	64
0	mAP50-95):				Box(P 00, 8.43it		mAP5
9	0.512	all	182	715	0.884	0.729	0.79
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	10/500 100%	2.12G 80/8	30 [00:05<00			139	64
0	mAP50-95):	100%	6/6	[00:00<00:	00, 8.74it		mAP5
3	0.523	all	182	715	0.885	0.733	0.81
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	11/500 100%	2.12G 80/8	0.9943 30 [00:05<00	0.7877 9:00, 14.18	1.152 it/s]	108	64
0	mAP50-95):		6/6		00, 8.71it	R /s]	mAP5
2	0.528	all	182	715	0.854	0.777	0.8
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	12/500 100%	2.14G 80/8	0.9829 30 [00:05<00	0.7629 0:00, 13.43		153	64
0		Class	Images 6/6	Instances	Box(P	R /s]	mAP5
5	0.513	all	182	715	0.858	0.741	0.80
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	13/500 100%	2.14G 80/8	0.949 30 [00:05<00	0.7272 9:00, 14.57		146	64
0		Class	Images 6/6	Instances	Box(P	R /s]	mAP5
6	0.545	all	182	715	0.829	0.757	0.79

е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	14/500 100%	· · · · · · · · · · · · · · · · · · ·	00:05<00	0.7334 9:00, 14.22	2it/s]		64
0	mAP50-95):				Box(P :00, 8.83it		mAP5
3	0.537	all	182	715	0.872	0.756	0.81
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	15/500 100%	2.14G 80/80		0.724 9:00, 13.83		102	64
		Class	Images	Instances	Box(P :00, 8.94it	R /s]	mAP5
2	0.561	all	182		0.898	0.729	0.81
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	16/500 100%	2.14G 80/80		0.721 9:00, 14.41		113	64
0		Class	Images	Instances	Box(P :00, 8.51it	R /s]	mAP5
6	0.572	all	182	715		0.757	0.83
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	17/500 100%			0.6985 0:00, 14.10		139	64
0		Class	Images	Instances	Box(P :00, 8.63it	R :/s1	mAP5
4	0.557	all	182	715	0.901	0.758	0.82
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	18/500	2.14G	0.9372			136	64
	100%	Class	Images		Box(P	R	mAP5
0	mAP50-95):	all	182	715	:00, 8.94it 0.904	0.737	0.82
1	0.558 Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	19/500	2.14G	0.9036	0.6797	1.098	123	64
0:	100%		00:05<00	0.0797 0:00, 13.55 Instances	Sit/s]	123 R	mAP5
0	mAP50-95):			[00:00<00:	:00, 8.20it	/s]	0.8
3	0.57			715	0.891	0.774	
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz

o ·	20/500 100%	2.14G	0.9069 80 [00:05<0	0.6685		149	64
		Class	Images	Instances	Box(P		mAP5
0	mAP50-95):	all	182	715	:00, 8.77it 0.912	0.763	0.83
9	0.578	acc	102	713	0.912	0.703	0.05
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	21 (500	0.140	0.000	0 6015		100	6.4
0:	21/500 100%	2.14G 80/8	0.909 30 [00:05<0	0.6815 0:00. 14.42		106	64
		Class	-	Instances		R	mAP5
0	mAP50-95):			[00:00<00:	:00, 8.93it	:/s]	
_	0 57	all	182	715	0.917	0.758	0.83
2	0.57						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	22/500	2.14G	0 0035	0 663/	1.103	129	64
0:	100%		80 [00:05<0			129	04
			Images	•	Box(P	R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00:	:00, 8.38it	:/s]	
_		all	182	715	0.929	0.73	0.83
1	0.586						
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
_	23/500			0.6669		105	64
0:	100%		30 [00:06<00 Images		Box(P	R	mAP5
0	mAP50-95):				:00, 9.29it		IIIAPS
		all	182	715	0.901		0.8
5	0.6						
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
	24/500	2.14G				112	64
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^	ADEO OE) -		Images			R	mAP5
0	mAP50-95):	all	182	715	.00, 8.96it 0.915	0.771	0.84
4	0.583	acc	102	713	0.915	0.771	0.04
	Epoch	GPU mem	hov loss	cls loss	dfl_loss	Instances	Siz
е	Еросп	01 0_1110111	DOX_0033	0.03_0033	u1 t_t033	instances	312
	25/500	2.14G	0.8894	0.6524	1.093	157	64
0:	100%		30 [00:05<0			137	0.
			Images			R	mAP5
0	mAP50-95):			[00:00<00:			
2	0 502	all	182	715	0.89	0.773	0.84
2	0.593	CDII	1 7	1 1	163.3	.	6:
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
-	26/500	2 140	0.750	0 6270	1 000	125	64
0:	100%	2.14G	0.8759 80 [00:05<0	0.6379 0.00 14.22	1.088 Pit/sl	125	04
٠.	1000						
		class	Images	Instances	Box (P	K	mAP5
0	mAP50-95):	Class		Instances [00:00<00:	Box(P :00, 8.07it	R :/s]	mAP5

Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
0: 100%
0 mAP50-95): 100% all 182 715 0.911 0.768 0 8 0.588 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 28/500 2.14G 0.8763 0.6283 1.081 115 0: 100% 80/80 [00:05<00:00, 14.18it/s] Class Images Instances Box(P R Description of the content of
Epoch GPU_mem box_loss cls_loss dfl_loss Instances Epoch GPU_mem box_
e
0: 100% 80/80 [00:05<00:00, 14.18it/s] Class Images Instances Box(P R O MAP50-95): 100% 6/6 [00:00<00:00, 8.35it/s] all 182 715 0.867 0.766 4 0.587 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
Class Images Instances Box(P R new part of the content of the cont
all 182 715 0.867 0.766 4 0.587 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 29/500 2.14G 0.8627 0.6187 1.07 118 0: 100% 80/80 [00:05<00:00, 14.00it/s]
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e 29/500 2.14G 0.8627 0.6187 1.07 118 0: 100% 80/80 [00:05<00:00, 14.00it/s]
0: 100% 80/80 [00:05<00:00, 14.00it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.56it/s] all 182 715 0.893 0.76 0.573 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 30/500 2.16G 0.8593 0.6232 1.078 145 0: 100% 80/80 [00:05<00:00, 14.08it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.87it/s] all 182 715 0.909 0.768 0.588
Class Images Instances Box(P R of mAP50-95): 100% 100%
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5 0.573 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 30/500 2.16G 0.8593 0.6232 1.078 145 0: 100% 80/80 [00:05<00:00, 14.08it/s]
e 30/500 2.16G 0.8593 0.6232 1.078 145 0: 100% 80/80 [00:05<00:00, 14.08it/s] Class Images Instances Box(P R R 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.87it/s] all 182 715 0.909 0.768 3 0.588
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all 182 715 0.909 0.768 (3 0.588
3 0.588
<pre>Epoch GPU_mem box_loss cls_loss dfl_loss Instances</pre>
e
31/500 2.16G 0.8706 0.625 1.079 120
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0 mAP50-95): 100% 6/6 [00:00<00:00, 8.93it/s] all 182 715 0.914 0.776
all 182 715 0.914 0.776 0 5 0.602
Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
32/500 2.16G 0.8552 0.6119 1.072 100 0: 100% 80/80 [00:05<00:00, 13.86it/s]
Class Images Instances Box(P R r 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.77it/s]
all 182 715 0.905 0.783 (7 0.589

e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	33/500 100%	2.17G 80/	0.8501 80 [00:05<00	0.5998 0:00, 14.37		89	64
0	mAP50-95):		6/6	[00:00<00:		t/s]	mAP5
9	0.614	all	182	715	0.924	0.769	0.85
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	34/500 100%		0.8515 80 [00:05<00			139	64
0	mAP50-95):		Images 6/6			R :/s]	mAP5
7	0.591	all	182	715	0.885	0.771	0.84
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	35/500 100%		0.8404 80 [00:06<0			127	64
0		Class	Images 6/6	Instances	Box(P	R t/s1	mAP5
5	0.606	all	182	715	0.93	0.758	0.84
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	36/500 100%	2.19G	0.8455 80 [00:05<0			107	64
0		Class	Images 6/6	Instances	Box(P	R t/s1	mAP5
8	0.611	all	182	715	0.897	0.802	0.86
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	37/500 100%	2.19G	0.8382 80 [00:05<0	0.5878		139	64
0.	mAP50-95):	Class	Images	Instances		R	mAP5
6	0.605	all	182	715	0.906	0.806	0.86
	Epoch	GPU mem	box loss	cls loss	dfl loss	Instances	Siz
е	38/500	2.19G		0.5804		96	64
0:	100%	80/	80 [00:05<00 Images	9:00, 14.22	?it/s]	R	mAP5
0	mAP50-95):				00, 8.64it 0.898		0.85
2	0.6						
е	Epoch	GPU_mem	box_loss	cls_loss	arl_loss	Instances	Siz

0.	39/500 100%	2.19G	0.8331 80 [00:05<00	0.5811		119	64
		Class	Images	Instances	Box(P		mAP5
0	mAP50-95):	100% all	182	715	:00, 8.18it 0.894	0.806	0.86
3	0.611						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	40/500		0.8227			123	64
0:	100%		30 [00:06<00 Tmages		Sit/s] Box(P	R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00:	:00, 8.85it	:/s]	
2	0.607	all	182	715	0.92	0.783	0.85
_	Epoch	GPU mem	box loss	cls loss	dfl loss	Instances	Siz
е	·	_	_	_	_		
۵.	41/500 100%		0.8234 80 [00:05<00		1.048	131	64
0.	100%		Images		Box(P	R	mAP5
0	mAP50-95):				:00, 9.13it		0.06
1	0.61	all	182	715	0.93	0.779	0.86
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
0:	42/500 100%		0.8174 80 [00:05<00			129	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% 	182	[00:00<00:	:00, 8.82it 0.911		0.84
5	0.602	0.00		5	****		0.0.
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	43/500	2.19G	0.8191	0.5835	1.052	123	64
0:	100%	80/8	80 [00:05<00	0:00, 13.59	9it/s]		04
0	mAD50_05\+	Class	Images		Box(P :00, 9.23it		mAP5
U	IIIAF30-93).	all	182	715	0.915	0.788	0.86
2	0.608			, 13	0.913		
6	Epoch	GPU_mem	box_loss		dfl_loss		Siz
е		GPU_mem	_			Instances	Siz
	Epoch	2.19G 80/8	0.8144 80 [00:05<00	cls_loss 0.5726 9:00, 14.02	dfl_loss 1.053 2it/s]	Instances	64
	Epoch 44/500 100%	2.19G 80/8 Class	0.8144 80 [00:05<00 Images	cls_loss 0.5726 0:00, 14.02 Instances	dfl_loss 1.053 2it/s] Box(P	Instances 128 R	
0:	Epoch 44/500 100% mAP50-95):	2.19G 80/8	0.8144 80 [00:05<00 Images	cls_loss 0.5726 0:00, 14.02 Instances	dfl_loss 1.053 2it/s]	Instances 128 R	64
0:	Epoch 44/500 100% mAP50-95): 0.615	2.19G 80/8 Class 100% all	0.8144 80 [00:05<00 Images 6/6 182	0.5726 9:00, 14.02 Instances [00:00<00: 715	dfl_loss 1.053 2it/s] Box(P :00, 8.03it 0.931	Instances 128 R 7/s] 0.772	64 mAP5 0.85
0:	Epoch 44/500 100% mAP50-95):	2.19G 80/8 Class 100%	0.8144 80 [00:05<00 Images 6/6 182	0.5726 0.5726 0:00, 14.02 Instances [00:00<00:	dfl_loss 1.053 2it/s] Box(P :00, 8.03it 0.931	Instances 128 R 7/s] 0.772	64 mAP5
0: 0 3	Epoch 44/500 100% mAP50-95): 0.615 Epoch 45/500	2.19G 80/8 80/8 Class 100% 100 all GPU_mem 2.19G	0.8144 00[00:05<00 Images 6/6 182 box_loss	cls_loss 0.5726 9:00, 14.02 Instances [00:00<00: 715 cls_loss 0.5719	dfl_loss 1.053 2it/s] Box(P :00, 8.03it 0.931 dfl_loss 1.044	Instances 128 R 7/s] 0.772	64 mAP5 0.85
0: 0	Epoch 44/500 100% mAP50-95): 0.615 Epoch	2.19G 80/8 80/8 Class 100% 100 all GPU_mem 2.19G	0.8144 80 [00:05<00 Images 6/6 182 box_loss 0.8059 80 [00:06<06	cls_loss 0.5726 9:00, 14.02 Instances [00:00<00: 715 cls_loss 0.5719	dfl_loss 1.053 2it/s] Box(P :00, 8.03it 0.931 dfl_loss 1.044	Instances 128 R 7/s] 0.772 Instances	64 mAP5 0.85

6	0.61	all	182	715	0.892	0.793	0.8
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	46/500 100%		80 [00:05<0		sit/s]	117	64
0	mAP50-95):		6/6	Instances [00:00<00:	Box(P 00, 9.06it		mAP5
4	0.621	all	182	715	0.925	0.792	0.86
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	47/500 100%	2.19G 80/	0.7903 80 [00:05<0	0.5539 0:00, 13.79		124	64
0	mAP50-95):	Class	Images		Box(P		mAP5
9	0.612	all	182	715	0.903	0.793	0.85
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	48/500 100%	2.19G	0.7961 80 [00:05<0			147	64
0	mAP50-95):	Class	Images	Instances	Box(P 00, 8.58it	R :/sl	mAP5
7	0.612	all	182	715	0.905	0.789	0.85
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	40 /500				1 04	0.7	
ο.	49/500		0.8059			91	64
	100%	80/ Class	780 [00:05<00 Images	0:00, 14.12 Instances	Pit/s] Box(P	R	mAP5
0	100% mAP50-95):	80/ Class 100%	80 [00:05<0	0:00, 14.12 Instances [00:00<00:	2it/s] Box(P 00, 8.79it	R	
0	100%	80/ Class 100%	780 [00:05<0 Images 6/6 182	0:00, 14.12 Instances [00:00<00: 715	Box(P 00, 8.79it 0.928	R :/s]	mAP5
0 3 e	mAP50-95): 0.622 Epoch 50/500	Class 100% all GPU_mem 2.19G	780 [00:05<0] Images 6/6 182 box_loss 0.7889	0:00, 14.12 Instances [00:00<00: 715 cls_loss	Box(P 00, 8.79it 0.928 dfl_loss	R 2/s] 0.798 Instances	mAP5
0 3 e	mAP50-95): 0.622 Epoch 50/500 100%	Class 100% all GPU_mem 2.19G 80/	780 [00:05<0] Images 6/6 182 box_loss 0.7889 780 [00:05<0] Images	0:00, 14.12 Instances [00:00<00: 715 cls_loss 0.5467 0:00, 13.48 Instances	Box(P 00, 8.79it 0.928 dfl_loss 1.039 Bit/s] Box(P	R [/s] 0.798 Instances 112 R	mAP5 0.86 Siz
0 3 e 0:	mAP50-95): 0.622 Epoch 50/500 100% mAP50-95):	Class 100% all GPU_mem 2.19G 80/	780 [00:05<0] Images 6/6 182 box_loss 0.7889 780 [00:05<0] Images	0:00, 14.12 Instances [00:00<00: 715 cls_loss 0.5467 0:00, 13.48 Instances	Box(P 00, 8.79it 0.928 dfl_loss 1.039 Bit/s]	R [/s] 0.798 Instances 112 R	mAP5 0.86 Siz 64
0 3 e	mAP50-95): 0.622 Epoch 50/500 100% mAP50-95): 0.615	80/ Class 100% all GPU_mem 2.19G 80/ Class 100%	780 [00:05<0] Images 6/6 182 box_loss 0.7889 780 [00:05<0] Images 6/6 182	0:00, 14.12 Instances [00:00<00: 715 cls_loss 0.5467 0:00, 13.48 Instances [00:00<00: 715	Box(P 00, 8.79it 0.928 dfl_loss 1.039 Bit/s] Box(P 00, 9.29it	R 2/s] 0.798 Instances 112 R 2/s] 0.809	mAP5 0.86 Siz 64 mAP5
0 3 e 0:	mAP50-95): 0.622 Epoch 50/500 100% mAP50-95): 0.615 Epoch	80/ Class 100% all GPU_mem 2.19G	780 [00:05<0] Images 6/6 182 box_loss 0.7889 780 [00:05<0] Images 6/6 182 box_loss	0:00, 14.12 Instances [00:00<00: 715 cls_loss	Box(P 00, 8.79it 0.928 dfl_loss 1.039 Bit/s] Box(P 00, 9.29it 0.894 dfl_loss	R [/s]	mAP5 0.86 Siz 64 mAP5 0.86
0 3 e 0: 0 3	mAP50-95): 0.622 Epoch 50/500 100% mAP50-95): 0.615	80/ Class 100% all GPU_mem 2.19G	780 [00:05<0] Images 6/6 182 box_loss 0.7889 780 [00:05<0] Images 6/6 182 box_loss 0.7925 780 [00:05<0]	0:00, 14.12 Instances [00:00<00: 715 cls_loss 0.5467 0:00, 13.48 Instances [00:00<00: 715 cls_loss 0.5571 0:00, 13.93	Box(P 00, 8.79it 0.928 dfl_loss 1.039 Bit/s] Box(P 00, 9.29it 0.894 dfl_loss 1.041 Bit/s]	R [/s]	mAP5 0.86 Siz 64 mAP5 0.86 Siz 64
0 3 e 0: 0 3	100% mAP50-95): 0.622 Epoch 50/500 100% mAP50-95): 0.615 Epoch 51/500 100%	80/ Class 100% all GPU_mem 2.19G	80 [00:05<0] Images 6/6 182 box_loss 0.7889 80 [00:05<0] Images 6/6 182 box_loss 0.7925 80 [00:05<0] Images 6/6	0:00, 14.12 Instances [00:00<00: 715 cls_loss	Box(P 00, 8.79it 0.928 dfl_loss 1.039 Bit/s] Box(P 00, 9.29it 0.894 dfl_loss 1.041 Bit/s] Box(P 00, 8.99it	R 2/s] 0.798 Instances 112 R 2/s] 0.809 Instances 166 R	mAP5 0.86 Siz 64 mAP5 0.86 Siz 64 mAP5
0 3 e 0: 0 3 e	100% mAP50-95): 0.622 Epoch 50/500 100% mAP50-95): 0.615 Epoch 51/500 100%	80/ Class 100% all GPU_mem 2.19G 80/ Class 100% all GPU_mem 2.19G 80/ Class	780 [00:05<0] Images 6/6 182 box_loss 0.7889 780 [00:05<0] Images 6/6 182 box_loss 0.7925 780 [00:05<0] Images 6/6 182	0:00, 14.12 Instances [00:00<00: 715 cls_loss	Box(P 00, 8.79it 0.928 dfl_loss 1.039 Bit/s] Box(P 00, 9.29it 0.894 dfl_loss 1.041 Bit/s] Box(P 00, 8.99it 0.916	R 2/s] 0.798 Instances 112 R 2/s] 0.809 Instances 166 R	mAP5 0.86 Siz 64 mAP5 0.86 Siz 64

64	138		0.5479		2.19G	52/500	•
mAP5	R	Box(P	Instances	/80 [00:05<00 Images	Class	100%	
0.86	0.786	00, 8.66it 0.925	[00:00<00: 715	182	100% all	mAP50-95):	0
0.00	0.700	0.323	, 13	102	466	0.614	2
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	121		0.5444 9:00, 14.07	0.7965 80 [00:05<00	2.19G 80/	53/500 100%	0:
mAP5	R /s]	Box(P 00, 9.10it		Images		mAP50-95):	0
0.8	0.794	0.921	715	182	all	0.63	7
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	111		0.5447	0.7942 80 [00:05<0	2.19G	54/500 100%	٥.
mAP5	R	Box(P	Instances	Images	Class		
0.86	0.803	00, 8.59it 0.905	[00:00<00: 715	182	100% all	mAP50-95):	0
						0.616	9
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	119		0.5446 0.14 11	0.8016 80 [00:05<00	2.19G	55/500 100%	Θ.
mAP5	R	Box(P	Instances	Images	Class		0.
0.86	0.788	00, 8.48it 0.904	[00:00<00: 715		100% all	mAP50-95):	0
0.00	01700	0.50.	, 13	102		0.622	4
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	104	1.027 it/s]	0.5348 9:00, 14.14	0.7876 80 [00:05<00	2.19G 80/	56/500 100%	0:
mAP5	R /s1	Box(P 00, 8.97it	<pre>Instances [00:00<00:</pre>	Images	Class	mAP50-95):	0
0.86	0.791	0.915	715	182	all	0.625	7
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	e
64	109		0.527 9:00, 13.92		2.19G 80/	57/500 100%	0:
mAP5	R :/s1	Box(P 00, 7.99it	<pre>Instances [00:00<00:</pre>		Class	mAP50-95):	0
0.86	0.799	0.936	715	182	all	0.628	7
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	,
		_	_	_	_		е

0: 100% 80/80 [00:05<00:00, 13.94it/s]								
Class Images Instances Box(P R MAP5-95): 100%	٥.						141	64
The color of the			Class	Images	Instances	Box(P		mAP5
The color Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size Epoch GPU_mem box_loss cls_loss dfl_loss Instances Box(P R mAP5 Geven GPU_mem box_loss cls_loss dfl_loss Instances Geven GPU_mem Geven G	0	mAP50-95):						
e 59/500 2.196 0.7809 0.5401 1.03 127 64 0: 100%	7	0.622	all	182	715	0.937	0.778	0.8
0: 100% Class Images Instances Box(P R mAP5 of 100%) 100% Class Images Instances Box(P R of 100%) 100% Class Images Instances Box(P R of 100%) 100% Class Images Instances 100% Class Images Imstances 100% Class Images Imstances Box(P R of 100%) 100% Cl	е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100%	0:		80/80	[00:05<00):00, 13.89	it/s]		64
## BEDOCH GPU_mem box_loss cls_loss dfl_loss Instances Siz	0	mAP50-95):	100%	6/6	[00:00<00:	00, 8.85it	/s]	
e 60/500 2.19G 0.7655 0.5266 1.026 141 64 0: 100%	4	0.613	all	182	715	0.916	0.799	0.86
0: 100% Roll 80/80 00:05<00:00, 14.13it/s Class Images Instances Box(P R MAP50-95): 100% Roll 182 715 0.91 0.802 0.802 0.802 0.63 Epoch GPU_mem box_loss Cls_loss dfl_loss Instances Siz Cls_100% Group	е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100% all 182 715 0.91 0.802 0.8 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 1/500 2.19G 0.7626 0.5226 1.019 101 64 0: 100% 808 808 [00:05<00:00, 14.06it/s] Class Images Instances Box(P R mAP50-95): 100% 8182 715 0.901 0.787 0.85 6 0.625 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 62/500 2.19G 0.7618 0.5192 1.018 137 64 0: 100% 808 [00:05<00:00, 13.94it/s] Class Images Instances Box(P R mAP50-95): 100% 8080 [00:05<00:00, 13.94it/s] 8080 [00:05<00:00, 7.97it/s] 8085 6 0.631 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.631 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.631 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.631 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.631 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.631 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.631 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.632 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.635 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.649 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.659 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.659 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.659 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.659 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 0.659 Repoch GPU_mem box_loss cls_loss dfl_loss Instances Size	0:		80/80	[00:05<00	0:00, 14.13	it/s]		64
Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 61/500 2.19G 0.7626 0.5226 1.019 101 64 0: 100%	0	mAP50-95):						mAP5
e 61/500 2.19G 0.7626 0.5226 1.019 101 64 0: 100%	6	0.63	all	182	715	0.91	0.802	0.8
0: 100% 80/80 [00:05<00:00, 14.06it/s] Class Images Instances Box(P R MAP50	e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100% 6/6 [00:00<00:00, 8.81it/s]	0:		80/80	[00:05<00):00, 14.06	it/s]		64 made
6 0.625 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 6 62/500 2.19G 0.7618 0.5192 1.018 137 64 0: 100%	0	mAP50-95):	100%	6/6	[00:00<00:	00, 8.81it	/s]	
e 62/500 2.19G 0.7618 0.5192 1.018 137 64 0: 100% 80/80 [00:05<00:00, 13.94it/s]	6	0.625	all	182	/15	0.901	0.787	0.85
0: 100% 80/80 [00:05<00:00, 13.94it/s] Class Images Instances Box(P R MAP50	е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100%	0:						137	64
6 0.631 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size 63/500 2.19G 0.7577 0.5134 1.012 112 64 0: 100% 80/80 [00:05<00:00, 14.47it/s] Class Images Instances Box(P R mAP5 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.81it/s] all 182 715 0.917 0.8 0.86 8 0.629 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size	0	mAP50-95):	100%					mAP5
e 63/500 2.19G 0.7577 0.5134 1.012 112 64 0: 100% 80/80 [00:05<00:00, 14.47it/s] Class Images Instances Box(P R MAP5 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.81it/s] all 182 715 0.917 0.8 0.86 8 0.629 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Size	6	0.631	all	182	715	0.94	0.773	0.8
0: 100% 80/80 [00:05<00:00, 14.47it/s] Class Images Instances Box(P R mAP5 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.81it/s] all 182 715 0.917 0.8 0.86 8 0.629 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz	e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100% 6/6 [00:00<00:00, 8.81it/s] all 182 715 0.917 0.8 0.86 8 0.629 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz	0:		80/80	[00:05<00):00, 14.47	it/s]		64
8 0.629 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz	0	mAP50-95):	100%	6/6		00, 8.81it	/s]	mAP5
	8	0.629	all	182	715	0.917	0.8	0.86
	e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz

۵.	64/500 100%	2.19G	0.7482 0 [00:05<0	0.5116		119	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	182	715	. <mark>00, 8.89</mark> i1	0.801	0.87
8	0.628	CDU mam	ha 1aaa	-1- 1	d£1 1	Tuetenes	C:-
е	Epoch	GPU_mem	DOX_LOSS	CIS_LOSS	dfl_loss	Instances	Siz
ο.	65/500 100%		0.7721 0 [00:05<0			128	64
		Class	Images	Instances	Box(P		mAP5
0	mAP50-95):	100% all	182	715	.00, 8.92ii 0.913	0.802	0.87
3	0.64				167.7		
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0	66/500				1.017	142	64
Θ:	100%		0 [00:05<0 Images		Box(P	R	mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00; 715	00, 9.30it 0.911	0.804	0.86
7	0.622	acc	102	713	0.311	0.004	0.00
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	67/500	2.35G		0.5152		104	64
0:	100%		0 [00:05<0 Images		Pit/s] Box(P	R	mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00:	.00, 7.86id 0.896		0.86
7	0.64	acc	102	713	0.090	0.799	0.00
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	68/500	2.35G	0.7464	0.5078	1.015	113	64
0:	100%		0 [00:05<0 Images			R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00	:00, 8.66i	t/s]	
9	0.632	all	182	715	0.914	0.818	0.86
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	69/500	2.35G	0.7488	0.5172	1.016	83	64
0:	100%	80/8	0 [00:05<0	0:00, 13.89	0it/s]		
0	mAP50-95):	Class		Instances [00:00<00:		R t/s]	mAP5
8	0.632	all	182	715	0.923	0.809	0.86
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	70/500	2.35G	0.7455	0.5055	1.009	82	64
0:	100%	80/8	0 [00:05<0	0:00, 13.72	2it/s]		
0	mAP50-95):	Class	Images 6/6	Instances [00:00<00:	Box(P :00, 8.86i	R t/s]	mAP5
		-					

2	0.641	all	182	715	0.914	0.791	0.87
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	71/500 100%	2.35G	0.7407 0 [00:05<00	0.5039 0:00, 14.12		111	64
0		Class	Images	Instances		R :/s]	mAP5
7	0.628	all	182	715	0.891	0.815	0.86
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	72/500 100%	2.35G 80/8	0.7411 0 [00:05<00	0.5011 0:00, 14.02		159	64
0	mAP50-95):	100%	6/6	[00:00<00:	Box(P 00, 8.82it		mAP5
9	0.638	all	182	715	0.906	0.808	0.86
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	73/500 100%	2.35G 80/8	0.7445 0 [00:05<00	0.5076 0:00, 13.79		132	64
0	mAP50-95):	100%	Images 6/6		Box(P 00, 8.54it	R :/s]	mAP5
5	0.633	all	182	715	0.898	0.803	0.86
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	74/500 100%	2.35G 80/8		9:00, 13.68	Bit/s]	101	64
0	mAP50-95):		Images 6/6		Box(P 00, 9.28it	R :/s]	mAP5
8	0.641	all	182	715	0.92	0.789	0.86
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	75/500 100%		0 [00:05<00	9:00, 13.37	it/s]	109	64
0	mAP50-95):	100%			Box(P 00, 8.95it		mAP5
7	0.626	all	182	715	0.93	0.796	0.8
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	76/500 100%	2.35G 80/8	0.7436 0 [00:05<00	0.4974 9:00, 14.04		157	64
0	mAP50-95):	100%		[00:00<00:	00, 8.80it	:/s]	mAP5
	0.631	all	182	715	0.912	0.807	0.87

e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	77/500 100%	2.37G 80/8	0.731 80 [00:05<00	0.4891 9:00, 14.22		112	64
0	mAP50-95):		6/6	[00:00<00:	Box(P :00, 8.64i1	t/s]	mAP5
9	0.635	all	182	715	0.868	0.814	0.85
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	78/500 100%		0.7396 80 [00:05<0			116	64
0		Class	Images 6/6	Instances	Box(P		mAP5
6	0.636	all	182	715	0.92	0.807	0.86
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	79/500		0.7415			99	64
	100%	Class	80 [00:05<00 Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00:	00, 8.54i1 0.904		0.8
7	0.637	CDIL mom	box loss	ole loce	dfl loss	Instances	C i a
е	Epoch	GPU_mem	DOX_COSS	Cts_toss	urt_toss	Tilstalices	Siz
0:	80/500 100%		0.7308 80 [00:05<00	0:00, 13.98	Bit/s]		64
0	mAP50-95):		Images 6/6				mAP5
5	0.638	all	182	715	0.895	0.803	0.86
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	81/500 100%	2.37G	0.7332 80 [00:05<0	0.4834 0:00. 14.23		134	64
0	mAP50-95):	Class	Images	Instances		R	mAP5
	0.63	all	182	715	0.914	0.809	0.86
4	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	02/500	2 276	0.725	0 4051	0.0000	104	C 1
0:	82/500 100%		80 [00:05<00		Bit/s]	134	64
0	mAP50-95):	Class	Images 6/6		Box(P :00, 8.82i1	R t/s]	mAP5
1	0.638	all	182	715	0.911	0.811	0.87
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz

64	169		0.4839		2.37G	83/500	^
mAP5	R	Box(P	Instances	•	Class	100%	⊍:
0.87	(/s] 0.8	00, 9.16it 0.936	[00:00<00: 715	182	100% all	mAP50-95):	0
						0.633	5
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	147		0.4914	0.7331 '80 [00:05<00	2.37G	84/500 100%	۵.
mAP5	R	Box(P	Instances	Images	Class		
0.87	0.809	00, 9.13it 0.9	[00:00<00: 715	182	all	mAP50-95):	0
· ·	T .	163. 3	1 1		CDU	0.63	4
Siz	Instances	dTl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	137		0.4904 0.00 14 16	0.7213 '80 [00:05<0	2.37G	85/500 100%	0 •
mAP5	R		Instances	Images	Class	mAP50-95):	0
0.86	0.796	0.93	715	182	all		
Siz	Instances	dfl loss	cls loss	box loss	GPU mem	0.628 Epoch	3
			_	_	_	·	е
64	123		0.4779 9:00, 14.37		2.37G 80/	86/500 100%	0:
mAP5	R :/s]			Images 6/6		mAP50-95):	0
0.8	0.811	0.923	715	182	all	0.641	8
C:-	T.,	d £ 1 1	-1- 1	hav. 1	CDU		Ü
Siz	Instances	art_toss	cls_loss	box_loss	GPU_mem	Epoch	е
64	146		0.4802 0:00, 14.20		2.37G 80/	87/500 100%	0:
mAP5	R	Box (P	Instances [00:00<00:	Images	Class	mAP50-95):	
0.87	0.807	00, 9.10it 0.923	715	182	all	·	0
Siz	Instances	dfl loss	cls loss	box loss	GPU mem	0.636 Epoch	6
		_	_	_	_	·	е
64	136	0.9945 it/s]	0.4711 9:00, 13.34	0.7194 /80 [00:05<0	2.37G 80/	88/500 100%	0:
mAP5	R -/s1	Box(P 00, 9.11it	<pre>Instances [00:00<00:</pre>	Images	Class	mAP50-95):	0
0.8	0.806	0.936	715	182	all		
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	0.636 Epoch	8
		_	_	_	_	-	е

64	155		0.4756		2.37G	89/500	•
mAP5	R		0:00, 14.03 Instances	'80 [00:05<0 Images	Class	100%	0:
0.00	/s]	00, 7.66it	[00:00<00:	6/6		mAP50-95):	0
0.86	0.811	0.892	715	182	all	0.637	9
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	e
64	123	it/s]		'80 [00:05<0		90/500 100%	0:
mAP5		Box(P 00, 9.29it		Images 6/6		mAP50-95):	0
0.86	0.783	0.921	715		all	0.627	4
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	e
64	134	it/s]		'80 [00:05<0		91/500 100%	0:
mAP5	R /s]	Box(P 00, 9.09it	<pre>Instances [00:00<00:</pre>		Class	mAP50-95):	0
0.86	0.787	0.931	715		all	0.642	9
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	112	it/s]		80 [00:05<00		92/500 100%	0:
mAP5			[00:00<00:	6/6		mAP50-95):	0
0.86	0.792	0.933	715	182	all	0.647	5
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	e
64	126		0.4748 0:00, 13.93		2.37G 80/	93/500 100%	0:
mAP5	R /s]	Box(P 00, 8.99it	<pre>Instances [00:00<00:</pre>		Class	mAP50-95):	0
0.87	0.791	0.923	715	182	all	0.648	1
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	е
64	102		0.4802 0:00, 14.54		2.37G 80/	94/500 100%	0:
mAP5	R /s]	Box(P 00, 8.75it	<pre>Instances [00:00<00:</pre>		Class	mAP50-95):	0
0.86	0.809	0.929	715	182	all	0.637	9
Siz	Instances	dfl_loss	cls_loss	box_loss	GPU_mem	Epoch	e

0: 100% 80,80
Class Images Instances Box(P R 0 mAP50-95): 100% 6 6 (00:00-00:00, 8.72it/s] all 182 715 0.914 0.807 3 0.636 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 96/500 2.376 0.7108 0.4707 0.9909 105 0: 100% 6 10
All 182 715 0.914 0.807
Boundary Color
e 96/500 2.37G 0.7108 0.4707 0.9909 105 0: 100%
96/500 2.37G 0.7108 0.4707 0.9909 105 0: 100% 80/80 [00:05<00:00, 13.92it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:00<00:00, 9.05it/s] all 182 715 0.922 0.811 6 0.636 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 97/500 2.37G 0.716 0.47 0.99 151 0: 100% 80/80 [00:05<00:00, 14.66it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 14.60it/s] 80/80 [00:05<00:00, 8.78it/s] all 182 715 0.927 0.797 7 0.63 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 98/500 2.37G 0.706 0.4631 0.9878 113 0: 100% 80/80 [00:05<00:00, 13.94it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 13.94it/s] 80/80 [00:05<00:00, 9.04it/s] 80/80 [00:05<00:00, 13.86it/s] 80/80 [00:05<00:00 80/80 [00:05<00:00 80/80 [00:05<00:00 80/80 [00:05<00:00 80/80 [00:05<00:00 80/80 [00:05<00:
0: 100% Class Images Instances Box(P R 0 mAP50-95): 100% Box(Box(Box(Box(Box(Box(Box(Box(Box(Box(
Class Images Instances Box(P R 0 mAP50-95): 100%
0 mAP50-95): 100%
Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 97/500 2.37G 0.716 0.47 0.99 151 0: 100%
Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 97/500 2.37G 0.716 0.47 0.99 151 0: 100%
e 97/500 2.376 0.716 0.47 0.99 151 0: 100% 80/80 [00:05<00:00, 14.66it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 182 715 0.927 0.797 7 0.63 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 98/500 2.376 0.706 0.4631 0.9878 113 0: 100% 80/80 [00:05<00:00, 13.94it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 9.04it/s] all 182 715 0.916 0.805 8 0.648 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 99/500 2.376 0.7044 0.4642 0.9886 128 0: 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 80/80 [00:05<00:00, 13.86it/s] 80/80 [00:05<00:00, 8.23it/s] 8
97/500 2.37G 0.716 0.47 0.99 151 0: 100% 80/80 [00:05<00:00, 14.66it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 182 715 0.927 0.797 7 0.63 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 98/500 2.37G 0.706 0.4631 0.9878 113 0: 100% 80/80 [00:05<00:00, 13.94it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 182 715 0.916 0.805 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 180.648 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 180.66 [00:00<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 MAP50-95): 100% 180/80 [00:05<00:00, 13.86it/s] Class Images Imag
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Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 9.04it/s] all 182 715 0.916 0.805 8 0.648 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 99/500 2.37G 0.7044 0.4642 0.9886 128 0: 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.23it/s] all 182 715 0.922 0.8 6 0.65 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
0 mAP50-95): 100%
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e 99/500 2.37G 0.7044 0.4642 0.9886 128 0: 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R mAP50-95): 100% 6/6 [00:00<00:00, 8.23it/s] all 182 715 0.922 0.8 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
99/500 2.37G 0.7044 0.4642 0.9886 128 0: 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.23it/s] all 182 715 0.922 0.8 6 0.65 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
0: 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R mAP50-95): 100% 6/6 [00:00<00:00, 8.23it/s] all 182 715 0.922 0.8 6 0.65 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.23it/s] all 182 715 0.922 0.8 6 0.65 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
all 182 715 0.922 0.8 6 0.65 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
6 0.65 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
е
100/ <u>500</u> 2.37G 0.7099 0.4686 0.9901 173
0: 100% 80/80 [00:05<00:00, 14.18it/s]
Class Images Instances Box(P R 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.65it/s]
all 182 715 0.912 0.808
7.50
1 0.639
1 0.639 Epoch GPU_mem box_loss cls_loss dfl_loss Instances
1 0.639 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e
1 0.639 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e 101/500 2.37G 0.7025 0.4621 0.9857 154
1 0.639 Epoch GPU_mem box_loss cls_loss dfl_loss Instances e

8	0.63	all	182	715	0.923	0.789	0.86
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	102/500 100%	2.37G	0.712 0 [00:05<00			87	64
		Class	Images	Instances	Box(P :00, 9.11it		mAP5
2		all	182	715	0.934	0.792	0.87
e		GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	103/500	2.37G	0.6924 0 [00:05<00	0.4579 0:00, 14.30		147	64
0		Class	Images	Instances	Box(P :00, 8.51it		mAP5
3	0.642	all	182	715	0.928	0.804	0.87
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	104/500 100%	2.37G 80/8		0.4582 0:00, 14.08		167	64
0	mAP50-95):				Box(P :00, 8.90it	R /s]	mAP5
8	0.65	all	182	715	0.928	0.799	0.87
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	105/500 100%	2.37G 80/8	0.6984 0 [00:05<00			111	64
0	mAP50-95):				Box(P :00, 8.19it	R /s1	mAP5
2	0.646	all	182	715	0.924	0.809	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	106/500 100%	2.37G	0.7001 0.705<00	0.4565 0:00, 13.98		125	64
0	mAP50-95):	Class	Images	Instances		R /s]	mAP5
5	0.64	all	182	715	0.908	0.81	0.87
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	107/500 100%	2.37G	0.6935 0 [00:05<00	0.4577 0:00, 14.12		135	64
•	_000	Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100%	1 6/6	00:00<00	:00, 9.19it	/s	

e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	108/500 100%	2.37G 80/8	0.6821 80 [00:05<00	0.4437 9:00, 14.18		163	64
0	mAP50-95):		6/6	[00:00<00		t/s]	mAP5
9	0.635	all	182	715	0.933	0.801	0.87
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	109/500 100%		0.6881 80 [00:05<0			124	64
0		Class	Images 6/6	Instances	Box(P		mAP5
8	0.655	all	182	715	0.926	0.812	0.8
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	110/500 100%		0.6844 80 [00:05<0			167	64
0.		Class	Images 6/6	Instances	Box(P	R	mAP5
	0.639	all	182	715	0.925		0.87
6	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	111/500	2.37G	0.6857	0.4535	0.9726	127	64
0:	100%	80/8	80 [00:05<00 Images	9:00, 14.16	Sit/s]		mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00:	:00, 8.06i1 0.943		0.87
6	0.645						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	112/500 100%	2.37G 80/8	0.6866 80 [00:05<0	0.4549 0:00, 14.01		158	64
0	mAP50-95):		Images 6/6		Box(P :00, 8.93it	R t/s]	mAP5
1	0.638	all	182	715	0.92	0.815	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	113/500 100%	2.37G	0.6811 80 [00:05<00	0.451 0:00. 13.9		106	64
0	mAP50-95):	Class	Images	Instances		R	mAP5
3	0.643	all	182	715	0.947	0.801	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							

۵.	114/500 100%	2.37G	0.6793 80 [00:05<0		0.9784	102	64
		Class	Images 6/6	Instances	Box(P		mAP5
0		all	182	715	0.943	0.795	0.87
9	0.651	CDII			167. 7	Ŧ.,	6.
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	115/500 100%	80/	0.6842 80 [00:05<0	0:00, 14.30	0it/s]		64
0	mAP50-95):		Images 6/6				mAP5
4	0.656	all	182	715		0.818	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	116/500 100%		0.6759 80 [00:05<0			127	64
0		Class	Images 6/6	Instances	Box(P		mAP5
9	0.656	all	182	715	0.896	0.838	0.87
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0	117/500	2.37G			0.9674	132	64
0:	100%		80 [00:05<00 Images		Box(P	R	mAP5
0	mAP50-95):	100% all	6/6				0.87
9	0.637	att	182	715	0.920	0.804	0.07
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	118/500	2.37G	0.6714	0.4388		113	64
Θ:	100%	Class	80 [00:05<00 Images			R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00	:00, 9.19it	t/s]	
4	0.646	all	182	715	0.949	0.808	0.87
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	119/500 100%	2.37G 80/	0.675 80 [00:05<0	0.4465 0:00, 14.00		100	64
0	mAP50-95):	Class	Images	Instances		R t/sl	mAP5
9		all	182	715	0.93	0.803	0.87
^	0 0 4						
9	0.654 Epoch	GPU mem	box loss	cls loss	dfl loss	Instances	Siz

0.	120/500 100%	2.37G	0.6654 80 [00:05<0	0.4388 0.00 14.30		131	64
0		Class		Instances	Box(P	R -/c1	mAP5
U	IIIAI 30-33).	all	182	715	0.939	0.792	0.86
8	0.647	acc	102	713	0.939	0.732	0.00
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	121/500	2.37G	0.6601	0.434	0.9687	112	64
0:	100%		80 [00:05<00				
•	4DE0 05)		Images			R	mAP5
0	MAP50-95):	all	6/6 182	715	0.941 (00)	0.815	0.87
4	0.65	all	102	/15	0.941	0.015	0.07
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	122/500	2.37G	0.6645	0.4319	0.9687	116	64
0:	100%	80/8	80 [00:05<00	0:00, 14.68	Bit/s]		
			Images			R	mAP5
0	mAP50-95):		6/6				
7	0.646	all	182	715	0.928	0.806	0.87
/		CDII			163. 3	- .	
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	123/500 100%	2.37G	0.6644 80 [00:05<0	0.432 0:00. 14.04		116	64
•			Images			R	mAP5
0	mAP50-95):				:00, 8.78it	:/s]	
3	0.644	all	182	715	0.928	0.809	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е		_	_	_	_		
ი.	124/500 100%	2.37G	0.6635 80 [00:05<00	0.438 0.438		106	64
٠.	2000	Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100%	•		:00, 9.33i1	:/s]	
-	0.640	all	182	715	0.937	0.799	0.87
6	0.648						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 :	125/500 100%	2.37G 80/8	0.6715 80 [00:05<00	0.4362 9:00, 14.35		180	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	all	182	715	.00, 8.47i1 0.926	0.805	0.87
7	0.653	acc	102	, 13	0.520	0.005	0.07
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz

۵.	126/500 100%	2.37G	0.6639 80 [00:05<00		0.9756	114	64
		Class	Images	Instances	Box(P :00, 8.65it		mAP5
0	mAP50-95):	all	182	715	0.927	0.808	0.87
3	0.647						
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	127/500	2.37G	0.6822	0.4423	0.9704	147	64
0:	100%		30 [00:05<00			D	4.5.5
0	mAP50-95):				Box(P :00, 8.96it		mAP5
		all	182	715		0.795	0.88
4	0.644						
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	120 /500	2 270	0 6500	0 4245	0 0600	221	64
0:	128/500 100%		0.0398 30 [00:05<00		0.9698 5it/sl	221	04
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all		_	:00, 8.02it	0.805	0.00
8	0.65	all	182	715	0.941	0.805	0.88
	Epoch	GPU mem	box loss	cls loss	dfl loss	Instances	Siz
е	·	_	_	_	_		
0:	129/500 100%				0.9727 Dit/sl	149	64
0		Class	Images	Instances	Box(P:00, 9.25it	R :/s1	mAP5
8	0.648	all	182	715	0.923		0.87
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
•	130/500	2.37G		0.4419		99	64
0:	100%		30 [00:05<00 Images			R	mAP5
0	mAP50-95):				:00, 8.97it		III/(I 3
0	0.654	all	182	715	0.925	0.802	0.87
8	0.654	CDII	h 1	-1 - 1	161 1	T	C:-
e	Epoch	GPU_mem	DOX_LOSS	cls_loss	dfl_loss	Instances	Siz
	131/500	2.37G	0.6608	0.4353	0.9693	109	64
0:	100%	80/8	80 [00:05<00	0:00, 13.82	2it/s]		
•	4DE0 05\		Images			R	mAP5
0	MAP50-95):	100% all	182	[00:00<00:	:00, 8.83it 0.911	0.818	0.87
9	0.648	466	102	, 13	0.511	0.010	0.07
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	132/500	2.37G	0.6622	0.4383	0.9666	114	64
0:	100%	80/8	30 [00:05<00	0:00, 13.97	7it/s]		
0	mAP50-95):	Class	•	Instances	Box(P :00, 8.81it	R . / c 1	mAP5

8	0.643	all	182	715	0.927	0.812	0.87
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	133/500 100%		30 [00:05<00		it/s]	131	64
Θ	mAP50-95):	Class		<pre>Instances [00:00<00:</pre>	Box(P 00, 8.97it	R :/s]	mAP5
8	0.657	all	182	715	0.949	0.794	0.8
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	134/500 100%	2.37G 80/8	0.6471 30 [00:05<00	0.4225 9:00, 13.57		104	64
0	mAP50-95):	Class	Images		Box(P		mAP5
2	0.641	all	182	715	0.923	0.799	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	135/500 100%		0.6586 30 [00:05<00			114	64
0	mAP50-95):	Class	Images	Instances	Box(P 00, 9.18it		mAP5
9	0.641	all	182	715	0.926	0.81	0.87
9	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	136/500	2.37G	0.6644	0.4304	0.966	152	64
0:	100%	80/8	30 [00:05<00	9:00, 14.38	sit/s]		
0	mAP50-95):	Class	Images 6/6	<pre>Instances [00:00<00:</pre>	Box(P 00, 8.77it	R :/s]	mAP5
8	0.648	all	182	715	0.929	0.801	0.87
U	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е		_	_	_	_		
0:	137/500 100%		0.6568 30 [00:05<00			149	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% 	182	715	00, 9.27it 0.935	0.806	0.87
7	0.64						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	138/500 100%	2.37G 80/8	0.6522 30 [00:05<06			109	64
0	mAP50-95):		Images 6/6				mAP5
1	0.646	all	182	715	0.931	0.809	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz

ω.	139/500 100%	2.38G	0.6517 0 [00:05<0		0.9628	96	64
		Class	Images	Instances	Box(P :00, 8.90it		mAP5
0	IIIAP30-93):	100% all	182	715	0.932	0.812	0.88
5	0.654						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	140/500	2.38G		0.4287		96	64
0:	100%	80/8 Class	0 [00:05<00	•	Bit/s] Box(P	R	mAP5
0	mAP50-95):				:00, 8.52it		IIIAI 3
0	0.650	all	182	715	0.946	0.821	0.88
9	0.659 Epoch	GPU mem	hov locc	clc loss	dfl loss	Instances	Siz
е	Еросп	GPU_IIIEIII	DOX_COSS	C15_1055	u11_1055	Tilstalices	312
0:	141/500 100%		0.6473 0 [00:05<0		0.9592	110	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	182	[00:00<00:	:00, 8.87it 0.928	0.817	0.88
8	0.656	att	102	/15	0.926	0.017	0.00
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	142/500 100%				0.9538 Sit/sl	114	64
0		Class	Images	Instances	Box(P :00, 9.00it	R :/s1	mAP5
9	0.651	all	182	715	0.945		0.87
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	143/500	2.38G	0.6515	0.4273	0.9645	139	64
0:	100%	80/8	0 [00:05<0	9:00, 14.27	7it/s]		
0	mΛD50_05).	Class	Images		Box(P :00, 9.12it		mAP5
U	IIIAF 30 - 93).	all	182	715	0.93	0.813	0.88
1	0.659						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	144/500	2.38G	0.6542	0.4238	0.9598	96	64
0:	100%		0 [00:05<0			D	A D.E
0	mAP50-95):	Class	Images 6/6		Box(P :00, 8.22it	R :/s]	mAP5
7	0.654	all	182	715	0.933	0.811	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	145/500	2.38G	0.6387	0.4208	0.9552	125	64
0:	100%	80/8	0.0387			123	04
	ADEO OE)	Class	•	Instances	Box(P :00, 8.78it	R . / c 1	mAP5
0	m/\paii uai						

8	0.652	all	182	715	0.91	0.823	0.8
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	146/500 100%	2.38G 80/8	0.6488 80 [00:05<00	0.4241 0:00, 13.59		149	64
0	mAP50-95):			[00:00<00:	Box(P 00, 9.18it	:/s]	mAP5
4	0.653	all	182	715	0.933	0.797	0.87
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	147/500 100%	2.38G 80/8	80 [00:05<00		it/s]	86	64
0	mAP50-95):			[00:00<00:	Box(P 00, 8.65it		mAP5
6	0.659	all	182	715	0.952	0.811	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	148/500 100%	80/8	0.6384 80 [00:05<00			93	64
0	mAP50-95):	100%			Box(P 00, 8.02it		mAP5
4	0.652	all	182	715	0.94	0.807	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	149/500 100%	80/8	0.6299 80 [00:05<00	0:00, 14.23		110	64
0	mAP50-95):			[00:00<00:	Box(P 00, 7.93it	:/s]	mAP5
8	0.661		182				0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	150/500 100%		0.6498 80 [00:05<00	•		166	64
0	mAP50-95):			[00:00<00:	Box(P 00, 8.39it		mAP5
8	0.653	all	182	715	0.91	0.826	0.8
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	151/500 100%		0.6361 80 [00:05<00			129	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100%	6/6		00, 9.15it		2 2=
7	mAP50-95): 0.653 Epoch			[00:00<00: 715	0.926	0.816	0.87 Siz

0: 100% 80/80 [00:05<00:00, 14.23it/s] 0 mAP50-95): 100% 182								
Class Images Instances Box(P R mAP5 0 mAP50-95): 100% 182 6/6 [00:00 8.73it/s] 0.816 0.87 9 0.649 182 715 0.923 0.816 0.87 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz 0 153/500 2.386 0.6385 0.4115 0.9563 162 64 0: 100% 180 180/80 [00:05<00:00, 14.03it/s]							109	64
0 mAP50-95): 100%	0:	100%					R	mAP5
Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz Epoch GPU_mem box_loss cls_loss dfl_loss Instances Geven GPU_mem box_loss cls_loss dfl_loss GPC R mAP5 GPU_mem box_loss cls_loss dfl_loss GPC R mAP5 GPU_mem box_loss cls_loss dfl_loss GPC GPU_mem box_loss cls_loss dfl_loss GPC GPU_mem box_loss cls_loss dfl_loss GPC GPU_mem	0	mAP50-95):	100%	6/6	[00:00<00:	00, 8.73it	/s]	
153/500	9	0.649	all	182	715	0.923	0.816	0.87
0: 100% 80/80 [00:05<00:00, 14.03it/s] R mAP5	e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100% 16/6 [00:00<00:00, 9.20it/s] all 182 715 0.932 0.809 0.88 1 0.65 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz e	0:		80/80	[00:05<00	9:00, 14.03	it/s]		64
Tourish	0	mAP50-95):						MAP5
e	1							0.88
0: 100% 80/80 [00:05<00:00, 14.08it/s]	е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100%	0:		80/80	[00:05<00	0:00, 14.08	it/s]		64
The second reports of	0	mAP50-95):	100%	6/6	[00:00<00:	00, 9.29it	/s]	
e	7	0.654	all	182	715	0.92	0.812	0.88
0: 100%	е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100% 6/6 [00:00<00:00, 9.22it/s] 0.814 0.8 8 0.655 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz e 156/500 2.38G 0.6229 0.4021 0.9472 99 64 0: 100% 9.20	0:		80/80	[00:05<00	9:00, 13.97	it/s]		64
<pre>8 0.655 Epoch</pre>	0	mAP50-95):	100%	6/6	[00:00<00:	00, 9.22it	/s]	
e	8	0.655	all	182	/15	0.924	0.814	0.8
0: 100% 80/80 [00:05<00:00, 14.36it/s] Class Images Instances Box(P R mAP5 0 mAP50-95): 100% 6/6 [00:00<00:00, 8.50it/s] all 182 715 0.94 0.796 0.87 8 0.646 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz e 157/500 2.38G 0.6359 0.4097 0.9488 145 64 0: 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R mAP5 0 mAP50-95): 100% 6/6 [00:00<00:00, 9.02it/s] all 182 715 0.93 0.812 0.88 8 0.659 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz	e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100% 6/6 [00:00<00:00, 8.50it/s]	0:		80/80	[00:05<00	9:00, 14.36	it/s]		
<pre>8 0.646 Epoch</pre>	0	mAP50-95):	100%	6/6	[00:00<00:	00, 8.50it	/s]	
e	8	0.646	all	182	715	0.94	0.796	0.87
0: 100% 80/80 [00:05<00:00, 13.86it/s] Class Images Instances Box(P R mAP5 mAP50-95): 100% 6/6 [00:00<00:00, 9.02it/s] all 182 715 0.93 0.812 0.88 8 0.659 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz	e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 mAP50-95): 100% 66 [00:00<00:00, 9.02it/s] all 182 715 0.93 0.812 0.88 8 0.659 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz	0:	·	80/80	[00:05<00	9:00, 13.86	it/s]		64
all 182 715 0.93 0.812 0.88 0.659 Epoch GPU_mem box_loss cls_loss dfl_loss Instances Siz	0	mAP50-95):						mAP5
	8							0.88
	е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz

0.	158/500 100%		0.6386 80 [00:05<0			153	64
0		Class	Images 6/6	Instances	Box(P		mAP5
1	0.652	all	182	715	0.952	0.799	0.88
	Epoch	GPU mem	hox loss	cls loss	dfl loss	Instances	Siz
е	·	_	_	_			
0:	159/500 100%	80/	0.6376 80 [00:05<00	9:00, 14.04	lit/s]		64
0	mAP50-95):		Images 6/6				mAP5
3	0.65	all	182	715	0.929	0.815	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	160/500	2.38G	0.6215	0.4099	0.9502	87	64
0:	100%		80 [00:05<00				
0	mAP50-95):		Images 6/6				mAP5
		all	182	715		0.814	0.88
2	0.654	CDII mom	hay lass	ala laca	dfl loss	Tretares	Siz
е	Epoch	GPU_mem	DOX_1055	Cts_toss	011_1055	Instances	512
0:	161/500 100%		0.6286 80 [00:05<00			123	64
			Images				mAP5
0	mAP50-95):		6/6				0.00
4	0.66	all	182	715	0.95	0.81	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
0	162/500	2.38G		0.401		111	64
0:	100%	Class	80 [00:05<00	9:00, 13./5 Instances	Box(P	R	mAP5
0	mAP50-95):				:00, 8.66it		IIIAF J
6	0.663	all	182	715	0.921	0.814	0.88
U	0.005						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	163/500	2.38G	0.6343	0.4115	0.9501	110	64
0:	100%		80 [00:05<00				•
		Class	Images	Instances		R	mAP5
0	mAP50-95):				:00, 8.63it		0.00
6	0.662	all	182	715	0.94	0.812	0.88
	Epoch	GPU mem	box loss	cls loss	dfl loss	Instances	Siz
е						-	

ο.	164/500 100%	2.38G	0.6237 80 [00:05<0	0.4051 0.00 13 83		98	64
0.		Class	Images	Instances	Box(P :00, 8.81it		mAP5
U	mAP50-95):	all	182	715	0.934	0.814	0.88
6	0.665						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	165/500	2.38G	0.6307	0.4045	0.9462	131	64
0:	100%	80/8	80 [00:05<0	0:00, 13.7	7it/s]		
0	mADEO OE\.				Box(P:00, 9.51it		mAP5
0	IIIAP30-93):	all	182	715	0.938	0.8	0.87
7	0.66						
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
۵.	166/500 100%		0.625 30 [00:05<0		0.9455	182	64
0.	100.9		-	•	Box(P	R	mAP5
0	mAP50-95):			_	:00, 9.29it	_	
7	0.661	all	182	715	0.947	0.805	0.88
	Epoch	GPU mem	hox loss	cls loss	dfl loss	Instances	Siz
е	Еросп	01 0	box_co33	013_1033	u1 t_t033	Instances	312
	167/500	2.38G	0.6212	0.4031	0.9442	142	64
0:	100%	 -					4.05
0	mΔP50-95)·		Images		Box(P :00, 9.33it	R ·/s1	mAP5
J		all	182	715	0.917		0.88
5	0.654						
•	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	168/500	2.38G	0.6082	0.3914	0.9381	96	64
0:	100%		0.0082 80 [00:05<0			90	04
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all			:00, 8.33it		0.00
1	0.666	all	182	715	0.956	0.812	0.89
	Epoch	GPU mem	box loss	cls_loss	dfl loss	Instances	Siz
е	·	_	_	_	_		
	169/500	2.38G	0.6231	0.404		125	64
0:	100%		30 [00:05<0 Images			R	mAP5
0	mAP50-95):	100%			:00, 9.33it		IIIAI J
_	0.00-	all	182	715	0.95	0.8	0.88
1	0.661	CDU	hav. 1	-1 - 1	461 7	Tastan	C:
е	Epoch	GPU_mem	DOX_LOSS	cls_loss	dfl_loss	Instances	Siz
	170/500	2.38G		0.4057		87	64
0:	100%	80/8 Class	30 [00:05<0			D	m A D E
0	mAP50-95):	100%	•	Instances [00:00<00	Box(P :00, 9.04it	R :/s]	mAP5

8	0.657	all	182	715	0.94	0.81	0.8
e		GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	171/500 100%		0.621 30 [00:05<00			112	64
		Class	Images 6/6	Instances	Box(P	R /s]	mAP5
3	0.663	all	182		0.937		0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:			0.6173 30 [00:05<00			128	64
		Class	Images	Instances	Box(P	R /s]	mAP5
4	0.653	all	182	715	0.933	0.827	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	173/500 100%		0.6156 30 [00:05<00			153	64
		Class	Images 6/6	Instances	Box(P		mAP5
8	0.659	all	182		0.91		0.87
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	174/500 100%	80/8	0.619 30 [00:05<00	9:00, 14.18		93	64
0	mAP50-95):			[00:00<00:	Box(P 00, 8.96it	/s]	mAP5
7	0.658	all	182	715	0.923	0.82	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	175/500 100%		80 [00:05<00			113	64
0	mAP50-95):	100%		[00:00<00:	Box(P 00, 9.22it		mAP5
9	0.656	all	182	715	0.914	0.822	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	176/500 100%	2.38G 80/8		0.394 9:00, 13.67		113	64
0	mAP50-95):	Class	Images	Instances		R /s]	mAP5
9	0.661	all	182	715	0.915	0.828	0.88

e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	177/500	2.38G		0.3967		121	64
	100%	Class	80 [00:05<00 Images	Instances	Box(P		mAP5
2	mAP50-95): 0.664	all	182	715	00, 9.00it 0.934	0.81	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	178/500	2.38G	0.613	0.3915	0.9401	122	64
0:	100%		80 [00:05<00 Images		Dit/s] Box(P	R	mAP5
0	mAP50-95):				00, 9.12it 0.934		0.88
2	0.656						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	179/500 100%		0.6092 80 [00:05<0			129	64
0	mAP50-95):		Images 6/6		Box(P 00, 8.54it	R :/s]	mAP5
5	0.664	all	182	715	0.934	0.812	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	180/500	2.38G		0.3901		178	64
	100%	Class		Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	182	[00:00<00: 715	00, 8.66it 0.942	0.807	0.88
7	0.67 Epoch	GPU mem	box loss	cls loss	dfl loss	Instances	Siz
е	181/500	2.38G	0.6079	0.3927	_	146	64
0:	100%		80 [00:05<00	0:00, 13.97	/it/s]		
0	mAP50-95):	100%		[00:00<00:	Box(P		mAP5
8	0.663	all	182	715	0.907	0.823	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	182/500 100%	2.38G	0.6088 80 [00:05<0	0.3955 0:00. 14.33		82	64
0	mAP50-95):	Class	Images	Instances	Box(P 00, 9.12it	R -/s1	mAP5
7	0.67	all	182	715	0.91	0.835	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							

٥.	183/500 100%	2.38G	0.5998 80 [00:05<0	0.3868		127	64
		Class	Images	Instances	Box(P		mAP5
0	mAP50-95):	all	182	715	00, 9.01it 0.933	0.813	0.88
6	0.67						
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	184/500	2.38G			0.9391	129	64
0:	100%	80/8 Class	00:05<00 Tmages		lit/s] Box(P	R	mAP5
0	mAP50-95):	100%	6/6		:00, 8.90it		
4	0.663	all	182	715	0.946	0.801	0.88
4	Epoch	GPU mem	hox loss	cls loss	dfl loss	Instances	Siz
е	Еросп	or o_illelii	DOX_0033	C (3_(033	u1 t_t033	Thistances	312
0:	185/500 100%		0.6037 80 [00:05<0		0.9428 0it/sl	108	64
٠.		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00:	00, 9.21it 0.919	./s] 0.827	0.88
4	0.661	att	102	/15	0.919	0.027	0.00
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	186/500				0.9397	133	64
0:	100%		00:05<00 Images		Sit/s] Box(P	R	mAP5
0	mAP50-95):				:00, 7.85it		IIIAI 3
1	0.664	all	182	715	0.925	0.811	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	187/500	2.38G	0.6119	0.3981	0.9412	129	64
0:	100%		00:05<0			D	A D.E
0	mAP50-95):		Images 6/6		Box(P :00, 8.18it		mAP5
		all	182	715	0.935	0.805	0.88
6	0.664	CDII	h 1	-1 - 1	161 1	Tt	C:-
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	188/500	2.38G	0.5976	0.3912	0.9389	109	64
0:	100%		00:05<0				
0	mAP50-95):	Class	Images		Box(P :00, 9.02it	R ·/s1	mAP5
		all	182	715	0.942	0.797	0.88
7	0.666					_	
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
_	189/500	2.38G		0.3897		89	64
0:	100%		00:05<00			D	m A D E
		Class	Tillanes	Instances	ROX(P	K	IIIAPO
0	mAP50-95):	Class	_	Instances [00:00<00:	Box(P :00, 9.22it	R :/s]	mAP5

3	0.664	all	182	715	0.936	0.81	0.88
е		GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	190/500 100%	2.38G	0.5904 0 [00:05<00	0.3858 0.13 9		142	64
		Class	Images	Instances	Box(P :00, 9.10it		mAP5
9	0.665	all	182	715		0.818	0.88
e		GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	191/500 100%	2.38G	0.5985 0 [00:05<00	0.3887 0:00, 14.13		114	64
0		Class	Images	Instances	Box(P :00, 8.84it		mAP5
8	0.666	all	182	715		0.797	0.8
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	192/500 100%	2.38G 80/8				99	64
0	mAP50-95):				Box(P:00, 9.06it	R :/s]	mAP5
8	0.662	all	182	715		0.814	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	193/500 100%	2.38G 80/8	0.6027 0 [00:05<00			158	64
Θ	mAP50-95):	Class	Images	Instances	Box(P:00, 8.74it		mAP5
9	0.659	all	182	715		0.802	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	194/500 100%	2.38G	0.5935	0.3841 0:00, 13.82		92	64
0.	mAP50-95):	Class	Images	Instances		R/s1	mAP5
9	0.664	all	182	715		0.811	0.8
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	195/500 100%	2.38G 80/8	0.5974 0.5974	0.3864 0:00, 14.09		121	64
		Class	Images	Instances		R/s1	mAP5
0							

e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	196/500 100%	80/80	00:05<00	0.3774 9:00, 13.76	Sit/s]		
0	mAP50-95):				Box(P :00, 8.42it		mAP5
8	0.661	all	182	715	0.937	0.809	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:		2.38G 80/80				105	64
		Class	Images	Instances	Box(P :00, 9.43it		mAP5
6	0.664	all	182			0.806	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	198/500 100%	2.38G 80/80		0.3858 0:00, 14.39		148	64
0	mAP50-95):				Box(P :00, 8.25it	R /s]	mAP5
5	0.663	all	182	715	0.92	0.827	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:		2.38G 80/80	00:05<00		Sit/s]	118	64
0	mAP50-95):				Box(P :00, 8.55it		mAP5
2	0.668	all	182	715	0.938	0.824	0.89
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	200/500	2.38G		0.3737 0:00, 14.26		144	64
		Class	Images	Instances	Box(P	R	mAP5
0		100% all	182	715	00, 8.52it 0.93	0.811	0.88
5	0.663 Epoch	GPU mem	hov loss	cle loss	dfl loss	Instances	Siz
е	Еросп	or o_ilicili	nov_r022	C. (5_ (USS	u1 (_ (USS	THECONCES	312
0:	201/500 100%	· · · · · · · · ·	00:05<00	9:00, 14.05	Sit/s]	85	64
0	mAP50-95):	Class		Instances [00:00<00:	Box(P :00, 9.30it	/s]	mAP5
6	0.661	all	182	715	0.941	0.821	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz

۵.	202/500 100%	2.38G	0.5913 0 [00:05<0		0.9321	155	64
		Class	Images	Instances	Box(P	R	mAP5
0		100% all	182	715	:00, 8.98it 0.923	0.829	0.88
6	0.665						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	203/500	2.38G	0.5903	0.3788	0.9352	122	64
0:	100%		0 [00:05<0			5	ADE
0	mΔP50-95)·				Box(P :00, 9.24it		mAP5
U	III/(1 30 33).	all	182	715		0.814	0.89
2	0.667						
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
•	204/500				0.9347	143	64
0:	100%		0 [00:05<0 Images		Box(P	R	mAP5
0	mAP50-95):				:00, 8.83it		IIIAI 3
		all	182	715	0.934	0.809	0.88
9	0.67						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	205/500	2.38G	0.5831	0.3787	0.9297	157	64
0:	100%	80/8				_	
0	mADEO 05).		Images		Box(P :00, 8.62it	R - /c1	mAP5
U	MAP30-93).	all	182	715	0.935		0.89
2	0.676						
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
	206/500	2.38G		0.376		111	64
0:	100%		0 [00:05<0			D	A D.E
0	mΔP50-95)·	Class	Images		Box(P :00, 9.08it		mAP5
U		all	182	715	0.935	0.822	0.88
5	0.663						
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
•	207/500	2.38G	0.5935	0.388		121	64
0:	100%		0 [00:05<0 Images			R	mAP5
0	mAP50-95):	100%			:00, 8.57it		IIIAFJ
		all	182	715	0.936	0.821	0.88
4	0.664						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	208/500	2.38G	0.5879	0.3772	0.9271	110	64
0:	100%		0 [00:05<0				
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):		L C (C		:00, 8.87it		

4	0.665	all	182	715	0.939	0.816	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	209/500 100%	2.38G 80/8	0.5954 0 [00:05<00	0.3798 0:00, 14.02		150	64
0	mAP50-95):		Images 6/6	Instances [00:00<00:	Box(P :00, 8.60it	R /s]	mAP5
8	0.669	all	182	715	0.949	0.806	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	210/500 100%	2.38G 80/8	0.5798 0 [00:05<00	0.377 9:00, 14.03		125	64
0	mAP50-95):		Images	Instances		R /s]	mAP5
7	0.663	all	182	715	0.954	0.802	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
Θ:	211/500 100%		0.582 0 [00:05<00			125	64
0		Class	Images	Instances		R :/s1	mAP5
9	0.66	all	182	715	0.965	0.802	0.8
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	212/500 100%	2.38G 80/8	0.5815 0.5815	0.3785 0:00. 14.3	0.9291 Bit/sl	128	64
	mAP50-95):	Class	Images	Instances	Box(P :00, 9.32it	R /s1	mAP5
4	0.666	all	182	715	0.949	0.806	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	213/500	2.38G	0.5713	0.371		134	64
	100%	Class	0 [00:05<00 Images	Instances	Box(P	R	mAP5
0	mAP50-95):	all	182	715	00, 8.80it 0.931	0.824	0.88
6	0.668 Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	214/500	2.38G	0.5845	0.3772	0.926	131	64
0:	100%		0 [00:05<00 Images		lit/s]	R	mAP5
0	mAP50-95):	100% all			00, 8.82it 0.94	0.812	0.88
7	0.663						

e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	215/500 100%		0.5816 80 [00:05<0			144	64
0	mAP50-95):	100%		[00:00<00:	00, 9.17it		mAP5
8	0.664	all	182	715	0.951	0.81	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	216/500 100%		80 [00:05<00		Bit/s]	117	64
0	mAP50-95):				Box(P 00, 9.35it	R /s]	mAP5
8	0.665	all	182	715	0.953	0.804	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 :	217/500 100%		0.5798 80 [00:05<0			108	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	182	[00:00<00: 715	00, 8.82it 0.948	0.802	0.88
6	0.667	acc	102	, 13	01310	0.002	0100
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
ο.	218/500 100%	2.38G	0.5752 80 [00:05<0	0.374	0.9242	152	64
0.		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00: 715	00, 9.43it 0.956	/s] 0.797	0.88
7	0.662	att	102	/15	0.930	0.797	0.00
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	219/500 100%	2.38G 80/8	0.5802 80 [00:05<0	0.3677 0:00, 14.21		128	64
0	mAP50-95):	Class	Images	Instances	Box(P 00, 8.61it	R /s1	mAP5
5	0.664	all	182	715	0.948	0.802	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	220/500 100%	2.38G	0.5837 80 [00:05<0	0.3755	0.9252	147	64
0.	mAP50-95):	Class	Images	Instances	Box(P 00, 8.72it	R /sl	mAP5
9	0.673	all	182	715	0.955	0.805	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							

0 •	221/500 100%	2.38G	0.5735 80 [00:05<0	0.3716 0.00 14 06		173	64
0	mAP50-95):	Class	Images	Instances	Box(P :00, 9.23it		mAP5
U	IIIAF 30 - 93).	all	182	715	0.946	0.807	0.88
6	0.668						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	222/500	2.38G		0.3722		103	64
0:	100%	Class	30 [00:05<0	•	2it/s] Box(P	R	mAP5
0	mAP50-95):	100%	6/6		:00, 8.63it	:/s]	
4	0.659	all	182	715	0.931	0.815	0.88
4	Epoch	GPU mem	hov loss	cls loss	dfl loss	Instances	Siz
е	Еросп	01 0_1110111	DOX_0033	0.03	u1 t_t033	Thistances	312
٥.	223/500 100%		0.5711 80 [00:05<0		0.9298	119	64
0.	100 0		Images		Box(P	R	mAP5
0	mAP50-95):				:00, 9.00it		0.00
6	0.665	all	182	715	0.934	0.803	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	224/500	2.38G			0.9216	143	64
0:	100%	 -	30 [00:05<0 Images		4it/s] Box(P	R	mAP5
0	mAP50-95):				:00, 8.76it		IIIAFS
4	0.664	all	182	715	0.933	0.808	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	225 (502	2 200	0 5001	0.005	0.0010	101	6.4
0:	225/500 100%	2.38G	0.5691 80 [00:05<0	0.365 0:00. 14.41		131	64
0.		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	6/6 182	[00:00<00:	:00, 8.88it 0.943	0.806	0.88
7	0.666	acc	102	713	0.945	0.800	0.00
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
0.	226/500 100%	2.38G	0.5677 80 [00:05<0	0.3656 0.3656		146	64
0.	100 0		Images			R	mAP5
0	mAP50-95):	100%			:00, 8.94it		0.00
5	0.66	all	182	715	0.926	0.821	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	227/500	2.38G	0.5809	0.3736	0.9309	92	64
0:	100%	80/8	80 [00:05<0	0:00, 14.04	lit/s]		
		Class	Tmagag	Inctances	Pov/P	D	m / DE
0	mAP50-95):	Class	•	Instances [00:00<00:	Box(P :00, 9.32it	R :/s]	mAP5

6	0.658	all	182	715	0.945	0.812	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
Θ:	228/500 100%	2.38G 80/8	0.5753 0 [00:05<00	0.3702 0:00, 14.29		94	64
0	mAP50-95):	Class			Box(P 00, 9.32it		mAP5
9	0.664	all	182	715	0.913	0.828	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	229/500 100%	80/8	0.5717 0 [00:05<00	9:00, 14.71	it/s]		64
0	mAP50-95):	Class	Images 6/6		Box(P 00, 8.98it		mAP5
9	0.665	all	182	715	0.935	0.812	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	230/500 100%	80/8	0.5634 0 [00:05<00	0:00, 14.45	it/s]		64
0	mAP50-95):	Class	Images 6/6		Box(P 00, 8.19it		mAP5
9	0.671	all	182	715	0.92	0.822	0.8
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	231/500 100%	80/8	0.5757 0 [00:05<00	0:00, 14.35		107	64
0	mAP50-95):		Images 6/6		Box(P 00, 8.99it		mAP5
3	0.671	all	182	715	0.93	0.811	0.89
е	Epoch	GPU mem	Lance Target				Siz
		dro_illelli	DOX_LOSS	cls_loss	dfl_loss	Instances	312
0.	232/500	2.38G	0.5672	0.3656	0.9228	Instances 132	64
	100%	2.38G 80/8 Class	0.5672 0 [00:05<00 Images	0.3656 0:00, 14.03 Instances	0.9228 it/s] Box(P	132 R	
0	100% mAP50-95):	2.38G 80/8 Class	0.5672 0 [00:05<00 Images	0.3656 0:00, 14.03 Instances	0.9228 it/s]	132 R	64
0	100%	2.38G 80/8 Class 100%	0.5672 0 [00:05<00 Images 6/6 182	0.3656 0:00, 14.03 Instances [00:00<00:	0.9228 it/s] Box(P 00, 9.23it 0.942	132 R :/s]	64 mAP5
0 8 e	mAP50-95): 0.67 Epoch 233/500	2.38G 80/8 80/8 Class 100%	0.5672 0 [00:05<00 Images 6/6 182 box_loss	0.3656 0:00, 14.03 Instances [00:00<00: 715 cls_loss	0.9228 it/s] Box(P 00, 9.23it 0.942 dfl_loss 0.9263	132 R 	64 mAP5 0.88
0 8 e	mAP50-95): 0.67 Epoch	2.38G 80/8 Class 100% all GPU_mem 2.38G 80/8 Class	0.5672 0 [00:05<06 Images 6/6 182 box_loss 0.5766 0 [00:05<06 Images	0.3656 0:00, 14.03 Instances [00:00<00: 715 cls_loss 0.3688	0.9228 it/s] Box(P 00, 9.23it 0.942 dfl_loss 0.9263 it/s] Box(P	132 R :/s] 0.804 Instances 124 R	64 mAP5 0.88 Siz

5	0.669	all	182	715	0.936	0.81	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	234/500 100%	80/8	80 [00:05<00	0:00, 14.29		123	64
0	mAP50-95):		Images 6/6		Box(P 00, 9.08it	/s]	mAP5
6	0.669	all	182	715	0.908	0.831	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0	235/500	2.38G			0.9285	124	64
	100% mAP50-95):	Class	80 [00:05<00 Images	Instances		R /s1	mAP5
7	0.67	all	182	715	0.931	0.808	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	236/500 100%	2.38G	0.576 80 [00:05<0	0.3687 0:00. 14.10		133	64
0		Class	Images	Instances		R R	mAP5
5	mAP50-95): 0.674	all	182	715	0.954	0.8	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
٥.	237/500 100%	2.38G	0.5598 80 [00:05<00	0.3606	0.9228	159	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	182	[00:00<00: 715	00, 8.89it 0.938	0.808	0.88
7	0.671						
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	238/500	2.38G	0.5659	0.3609		155	64
0:	100%		80 [00:05<00 Images		bit/s] Box(P	R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00:	00, 9.49it	/s]	
6	0.665	all	182	715	0.939	0.806	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0	239/500	2.38G	0.5624			168	64
	100%	Class	80 [00:05<00 Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% 	182	[00:00<00: 715	00, 9.08it 0.908	0.834	0.88
5	0.671						

е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	240/500 100%	2.38G 80/8	0.5682 30 [00:05<00			137	64
0	mAP50-95):	100%	6/6	[00:00<00:	Box(P 00, 9.23it	:/s]	mAP5
9	0.668	all	182	715	0.94	0.811	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	241/500 100%		0.5569 30 [00:05<00			143	64
0	mAP50-95):		Images 6/6		Box(P 00, 9.70it		mAP5
4	0.665	all	182	715	0.936	0.811	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	242/500 100%		0.5661 30 [00:05<00			73	64
0		Class	Images	Instances	Box(P 00, 8.82it	R :/s]	mAP5
5	0.663	all	182	715	0.943	0.798	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0:	243/500 100%	2.38G	0.5599 30 [00:05<00	0.3625 0:00. 14.28		79	64
		Class	Images	Instances	Box(P 00, 8.65it		mAP5
4	0.664	all	182	715	0.928	0.81	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	244/500	2.38G	0.5566 30 [00:05<00	0.3558	0.9168	119	64
0:	100% mAP50_05):		Images	Instances	Box(P 00, 9.26it	R	mAP5
2	0.667	all	182	715	0.93	0.814	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	245/500	2.38G	0.5659	0.365	0.921	120	64
0:		Class	30 [00:05<00 Images	Instances	Box(P	R	mAP5
3	mAP50-95): 0.669	all	182	715	00, 9.19it 0.932	0.806	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							

۵.	246/500 100%	2.38G		0.3592 0:00, 13.73		126	64
		Class	Images	Instances	Box(P		mAP5
0	mAP50-95):	100% 	182	715	:00, 9.22it 0.926	0.807	0.88
5	0.667						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0	247/500	2.38G			0.9176	125	64
0:	100%			0:00, 14.3 Instances	Box(P	R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00	:00, 9.12it		
9	0.661	all	182	715	0.93	0.81	0.87
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
۵.	248/500 100%			0.3569 0:00, 14.23	0.9216	111	64
0.	100%		Images		Box(P	R	mAP5
0	mAP50-95):	100%		_		_	0.00
2	0.665	all	182	715	0.936	0.808	0.88
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е							
0.	249/500 100%	2.38G 80/8			0.9193	128	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% all	182	[00:00<00	:00, 9.13it 0.937		0.88
4	0.666	acc	102	713	0.557	0.012	0.00
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	250/500	2 200	0 5524	0.2504	0.0200	0.4	C 4
0:	250/500 100%	2.38G 80/8		0.3584 0:00, 14.1		84	64
		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100% 	182	715	:00, 8.94it 0.94	0.801	0.88
1	0.664		102	, 13	0.5.	0.001	0.00
	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
е	251/500	2.38G	0.5596	0.3599	0.9149	108	64
0:	100%			0:3399		100	04
0		Class		Instances		R . / a 1	mAP5
0	mAP50-95):	all	182	715	:00, 9.31it 0.935	0.8	0.87
9	0.663						
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
•	252/500	2.38G		0.3574		111	64
0:	100%	80/8 Class		0:00, 14.40 Instances		R	mAP5
0	mAP50-95):			[00:00<00			

3	0.662	all	182	715	0.935	0.811	0.88
e	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
	253/500 100%	2.38G	0.5561 80 [00:05<00	0.3564 0:00, 14.35		118	64
0	mAP50-95):	Class	Images	Instances		R /s]	mAP5
9	0.664	all	182	715	0.954	0.799	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 :	254/500 100%		0.5526 80 [00:05<0			102	64
0		Class	Images 6/6	Instances	Box(P	R /s]	mAP5
5	0.664	all	182	715	0.942	0.805	0.88
е	Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Siz
0 :	255/500 100%	2.38G 80/8		0.3564 9:00, 14.18		134	64
0	mAP50-95):	Class	Images	Instances	Box(P 00, 8.88it		mAP5
4	0.666	all	182	715	0.945	0.799	0.88

EarlyStopping: Training stopped early as no improvement observed in last 50 epochs. Best results observed at epoch 205, best model saved as best.pt. To update EarlyStopping(patience=50) pass a new patience value, i.e. `patien ce=300` or use `patience=0` to disable EarlyStopping.

255 epochs completed in 0.470 hours.

Optimizer stripped from vehicle-license-plate-detection\near-complete\imgsz6 40-2\weights\last.pt, 6.3MB

Optimizer stripped from vehicle-license-plate-detection\near-complete\imgsz6 40-2\weights\best.pt, 6.3MB

Validating vehicle-license-plate-detection\near-complete\imgsz640-2\weights \best.nt...

Ultralytics 8.3.131 Python-3.13.3 torch-2.7.0+cu128 CUDA:0 (NVIDIA GeForce RTX 5070 Ti, 16303MiB)

Model summary (fused): 72 layers, 3,006,038 parameters, 0 gradients, 8.1 GFL OPs

		Class	Images	Instances	Box(P	R	mAP5
0	mAP50-95):	100%	6/6	[00:00<00:00,	6.16it/s]		

		all	182	715	0.93	0.825	0.89		
2	0.676			-					
7	0.573	carplate	181	259	0.964	0.815	0.87		
•		vehicle	182	456	0.895	0.836	0.90		
<pre>7 0.779 Speed: 0.1ms preprocess, 0.5ms inference, 0.0ms loss, 0.9ms postprocess per image Results saved to vehicle-license-plate-detection\near-complete\imgsz640-2 Ultralytics 8.3.131 Python-3.13.3 torch-2.7.0+cu128 CPU (AMD Ryzen 7 9700X 8-Core Processor)</pre>									
		(fused): 72 la	yers, 3,006	,038 para	meters, 0 g	radients, 8.	1 GFL		
<pre>PyTorch: starting from 'vehicle-license-plate-detection\near-complete\imgsz6 40-2\weights\best.pt' with input shape (1, 3, 640, 640) BCHW and output shap e(s) (1, 6, 8400) (6.0 MB)</pre>									
<pre>ONNX: starting export with onnx 1.18.0 opset 19 ONNX: slimming with onnxslim 0.1.52 ONNX: export success 0.5s, saved as 'vehicle-license-plate-detection\near-c omplete\imgsz640-2\weights\best.onnx' (11.7 MB)</pre>									
Export complete (0.7s) Results saved to C:\Users\herma\dev\IS\yolo\vehicle-license-plate-detection \near-complete\imgsz640-2\weights Predict: yolo predict task=detect model=vehicle-license-plate-detect ion\near-complete\imgsz640-2\weights\best.onnx imgsz=640 Validate: yolo val task=detect model=vehicle-license-plate-detection \near-complete\imgsz640-2\weights\best.onnx imgsz=640 data=datasets/Vehicle- License-Plate-Detection\data.yaml Visualize: https://netron.app									

Save Model Architecture & Hyperparamaters used

```
os.replace(best_weights, os.path.join(ARCHITECTURE_DIR, "best_{EXPERIMEN print("→ Copied best.onnx with custom name")
```

- → Hyperparameters written to vehicle-license-plate-detection\near-complete\impsz640-2\architecture\hyperparameters.json
- \rightarrow Model architecture written to vehicle-license-plate-detection\near-complet e\imgsz640-2\architecture\model_architecture.txt

Testing Dataset Evaluation

```
In [28]: if name == " main ":
             # 🔟 Load the model once, with task pre-declared
             model = YOLO(TRAINED MODEL WEIGHTS, task="detect")
             # 2 Evaluate at several confidence thresholds
             for conf in (0.25, 0.50, 0.75):
                 model.val(
                     data=DATA YAML,
                     split="test",
                     project=EVALUATION DIR,
                                               # root evaluation folder
                     name=f"{conf:.2f}",
                                                # e.g. "0.25", "0.50", "0.75"
                     exist_ok=True,
                     workers=NUM OF WORKERS,
                     conf=conf,
                                                 # ← varying threshold
                     device=DEVICE,
                     save json=True,
                     half=False,
                     imgsz=IMAGE SIZE,
                 print(f"Finished evaluation at conf={conf:.2f}")
       Ultralytics 8.3.131 Python-3.13.3 torch-2.7.0+cu128 CUDA:0 (NVIDIA GeForce
       RTX 5070 Ti, 16303MiB)
       Loading vehicle-license-plate-detection\near-complete\imgsz640-2\weights\bes
        t.onnx for ONNX Runtime inference...
       Using ONNX Runtime CUDAExecutionProvider
        Setting batch=1 input of shape (1, 3, 640, 640)
        val: Fast image access (ping: 0.00.0 ms, read: 788.8699.9 MB/s, size: 563.3
       KB)
        val: Scanning C:\Users\herma\dev\IS\yolo\datasets\Vehicle-License-Plate-Dete
        ction\test\labels.cache... 253 images, 0 backgrounds, 0 corrupt: 100%
        | 253/253 [00:00<?, ?it/s]
                                  Images Instances
                                                                              mAP5
                        Class
                                                         Box (P
                                | 253/253 [00:02<00:00, 114.67it/s]
       0 mAP50-95): 100%
```

		all	253	1494	0.912	0.683	0.8
2	0.627	carplate	251	512	0.965	0.645	0.81
1	0.558	·					
8	0 696	vehicle	253	982	0.859	0.721	0.82

Speed: 0.3ms preprocess, 4.2ms inference, 0.0ms loss, 1.0ms postprocess per image

Saving vehicle-license-plate-detection\near-complete\imgsz640-2\evaluation \0.25\predictions.json...

Results saved to vehicle-license-plate-detection\near-complete\imgsz640-2\ev
aluation\0.25

Finished evaluation at conf=0.25

Ultralytics 8.3.131 Python-3.13.3 torch-2.7.0+cu128 CUDA:0 (NVIDIA GeForce RTX 5070 Ti, 16303MiB)

Loading vehicle-license-plate-detection\near-complete\imgsz640-2\weights\best.onnx for ONNX Runtime inference...

Using ONNX Runtime CUDAExecutionProvider

Setting batch=1 input of shape (1, 3, 640, 640)

val: Fast image access (ping: 0.00.0 ms, read: 2390.61708.5 MB/s, size: 50
2.5 KB)

val: Scanning C:\Users\herma\dev\IS\yolo\datasets\Vehicle-License-Plate-Dete ction\test\labels.cache... 253 images, 0 backgrounds, 0 corrupt: 100%| | 253/253 [00:00<?, ?it/s] mAP5 Class Images Instances Box (P R 0 mAP50-95): 100% | 253/253 [00:02<00:00, 114.12it/s] 0.80 all 253 1494 0.944 0.649 5 0.632 251 0.975 0.607 0.78 carplate 512 6 0.557

3 0.706

Speed: 0.3ms preprocess, 4.4ms inference, 0.0ms loss, 1.1ms postprocess per image

253

982

0.914

0.691

0.82

Saving vehicle-license-plate-detection\near-complete\imgsz640-2\evaluation \0.50\predictions.json...

Results saved to vehicle-license-plate-detection\near-complete\imgsz640-2\ev
aluation\0.50

Finished evaluation at conf=0.50

vehicle

Ultralytics 8.3.131 Python-3.13.3 torch-2.7.0+cu128 CUDA:0 (NVIDIA GeForce RTX 5070 Ti, 16303MiB)

Loading vehicle-license-plate-detection\near-complete\imgsz640-2\weights\best.onnx for ONNX Runtime inference...

Using ONNX Runtime CUDAExecutionProvider

Setting batch=1 input of shape (1, 3, 640, 640)

val: Fast image access (ping: 0.00.0 ms, read: 2194.71742.5 MB/s, size: 36
9.1 KB)

0 mAP50-95): 100%| 253/253 [00:02<00:00, 125.33it/s]

		all	253	1494	0.976	0.548	0.7
6	0.619						
		carplate	251	512	0.973	0.492	0.72
9	0.534						
		vehicle	253	982	0.979	0.603	0.79
2	0.705						

Speed: 0.2ms preprocess, 3.9ms inference, 0.0ms loss, 1.0ms postprocess per image

Saving vehicle-license-plate-detection\near-complete\imgsz640-2\evaluation 0.75\predictions.json...

Results saved to vehicle-license-plate-detection\near-complete\imgsz640-2\ev
aluation\0.75

Finished evaluation at conf=0.75

This notebook was converted with convert.ploomber.io