

```
from huggingface_hub import hf_hub_download
path = hf_hub_download(
    repo_id = "rupesh002/pothole_dataset_2",
    repo_type = "dataset",
    filename = "pothole_yolo_dataset.zip"
)
```

/usr/local/lib/python3.12/dist-packages/huggingface\_hub/utils/\_auth.py:94: UserWarning:  
The secret `HF\_TOKEN` does not exist in your Colab secrets.  
To authenticate with the Hugging Face Hub, create a token in your settings tab (<https://huggingface.co/settings/tokens>), set  
You will be able to reuse this secret in all of your notebooks.  
Please note that authentication is recommended but still optional to access public models or datasets.

```
warnings.warn(
pothole_yolo_dataset.zip: 100% 351M/351M [00:04<00:00, 201MB/s]
```

```
!unzip -q {path} -d /content/pothole_dataset
```

```
!pip install ultralytics
```

Collecting ultralytics

```
Downloading ultralytics-8.3.222-py3-none-any.whl.metadata (37 kB)
Requirement already satisfied: numpy>=1.23.0 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (2.0.2)
Requirement already satisfied: matplotlib>=3.3.0 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (3.10.0)
Requirement already satisfied: opencv-python>=4.6.0 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (4.12.0.88)
Requirement already satisfied: pillow>=7.1.2 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (11.3.0)
Requirement already satisfied: pyyaml>=5.3.1 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (6.0.3)
Requirement already satisfied: requests>=2.23.0 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (2.32.4)
Requirement already satisfied: scipy>=1.4.1 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (1.16.2)
Requirement already satisfied: torch>=1.8.0 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (2.8.0+cu126)
Requirement already satisfied: torchvision>=0.9.0 in /usr/local/lib/python3.12/dist-packages (from ultralytics) (0.23.0+cu126)
Requirement already satisfied: psutil in /usr/local/lib/python3.12/dist-packages (from ultralytics) (5.9.5)
Requirement already satisfied: polars in /usr/local/lib/python3.12/dist-packages (from ultralytics) (1.25.2)
Collecting ultralytics-thop>=2.0.0 (from ultralytics)
Downloading ultralytics_thop-2.0.17-py3-none-any.whl.metadata (14 kB)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.12/dist-packages (from matplotlib>=3.3.0->ultralytics) (1.3.0)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.12/dist-packages (from matplotlib>=3.3.0->ultralytics) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.12/dist-packages (from matplotlib>=3.3.0->ultralytics) (4.53.0)
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.12/dist-packages (from matplotlib>=3.3.0->ultralytics) (1.4.7)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.12/dist-packages (from matplotlib>=3.3.0->ultralytics) (25.0)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.12/dist-packages (from matplotlib>=3.3.0->ultralytics) (3.2.0)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.12/dist-packages (from matplotlib>=3.3.0->ultralytics) (2.9.0)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.12/dist-packages (from requests>=2.23.0->ultralytics) (3.4.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.12/dist-packages (from requests>=2.23.0->ultralytics) (3.10.1)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.12/dist-packages (from requests>=2.23.0->ultralytics) (2.3.0)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.12/dist-packages (from requests>=2.23.0->ultralytics) (2025.1.1)
Requirement already satisfied: filelock in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (3.16.1)
Requirement already satisfied: typing-extensions>=4.10.0 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (4.12.0)
Requirement already satisfied: setuptools in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (75.2.0)
Requirement already satisfied: sympy>=1.13.3 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (1.13.3)
Requirement already satisfied: networkx in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (3.5)
Requirement already satisfied: Jinja2 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (3.1.6)
Requirement already satisfied: fsspec in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (2025.3.0)
Requirement already satisfied: nvidia-cuda-nvrtc-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (12.6.77)
Requirement already satisfied: nvidia-cuda-runtime-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (12.6.77)
Requirement already satisfied: nvidia-cuda-cupti-cu12==12.6.80 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (12.6.80)
Requirement already satisfied: nvidia-cudnn-cu12==9.10.2.21 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (9.10.2.21)
Requirement already satisfied: nvidia-cublas-cu12==12.6.4.1 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (12.6.4.1)
Requirement already satisfied: nvidia-cufft-cu12==11.3.0.4 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (11.3.0.4)
Requirement already satisfied: nvidia-curand-cu12==10.3.7.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (10.3.7.77)
Requirement already satisfied: nvidia-cusolver-cu12==11.7.1.2 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (11.7.1.2)
Requirement already satisfied: nvidia-cusparselt-cu12==0.7.1 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (0.7.1)
Requirement already satisfied: nvidia-nccl-cu12==2.27.3 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (2.27.3)
Requirement already satisfied: nvidia-nvtx-cu12==12.6.77 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (12.6.77)
Requirement already satisfied: nvidia-nvjitlink-cu12==12.6.85 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (12.6.85)
Requirement already satisfied: nvidia-cufile-cu12==1.11.1.6 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (1.11.1.6)
Requirement already satisfied: triton==3.4.0 in /usr/local/lib/python3.12/dist-packages (from torch>=1.8.0->ultralytics) (3.4.0)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.12/dist-packages (from python-dateutil>=2.7->matplotlib>=3.3.0->ultralytics) (1.17.0)
Requirement already satisfied: mpmath<1.4,>=1.1.0 in /usr/local/lib/python3.12/dist-packages (from sympy>=1.13.3->torch>=1.8.0->ultralytics) (1.3.0)
Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.12/dist-packages (from Jinja2->torch>=1.8.0->ultralytics) (3.0.2)
Downloading ultralytics-8.3.222-py3-none-any.whl (1.1 MB)
1.1/1.1 MB 34.6 MB/s eta 0:00:00
Downloading ultralytics_thop-2.0.17-py3-none-any.whl (28 kB)
Installing collected packages: ultralytics-thop, ultralytics
Successfully installed ultralytics-8.3.222 ultralytics-thop-2.0.17
```

```
!ls /content/pothole_dataset/pothole_yolo_dataset/train/images | head
!ls /content/pothole_dataset/pothole_yolo_dataset/valid/images | head
```

```
potholes0.png
potholes100.png
potholes101.png
potholes102.png
potholes103.png
potholes104.png
potholes105.png
potholes106.png
potholes107.png
potholes108.png
potholes116.png
potholes11.png
potholes120.png
potholes123.png
potholes124.png
potholes126.png
potholes130.png
potholes131.png
potholes139.png
potholes13.png
```

```
!ls -R /content/pothole_dataset/pothole_yolo_dataset/ | head
```

```
/content/pothole_dataset/pothole_yolo_dataset/:
data.yaml
train
valid

/content/pothole_dataset/pothole_yolo_dataset/train:
images
labels

/content/pothole_dataset/pothole_yolo_dataset/train/images:
```

```
!ls -R /content/pothole_dataset/pothole_yolo_dataset/data.yaml | head
```




```
/content/pothole_dataset/pothole_yolo_dataset/data.yaml
```

```
!yolo detect train \
  data="/content/pothole_dataset/pothole_yolo_dataset/data.yaml" \
  model=yolov8m.pt \
  epochs=120 \
  imgsz=1280 \
  batch=8 \
  hsv_h=0.02 hsv_s=0.7 hsv_v=0.4 \
  degrees=10 translate=0.1 scale=0.8 flipplr=0.5 mosaic=1.0 \
  patience=50 \
  name=pothole_strong
```

Ultralytics 8.3.222 🚀 Python-3.12.12 torch-2.8.0+cu126 CUDA:0 (Tesla T4, 15095MiB)  
**engine/trainer:** agnostic\_nms=False, amp=True, augment=False, auto\_augment=randaugument, batch=8, bgr=0.0, box=7.5, cache=Fa  
 Downloading <https://ultralytics.com/assets/Arial.ttf> to '/root/.config/Ultralytics/Arial.ttf': 100% ————— 755.1KB 2  
 Overriding model.yaml nc=80 with nc=1

	from	n	params	module	arguments
0	-1	1	1392	ultralytics.nn.modules.conv.Conv	[3, 48, 3, 2]
1	-1	1	41664	ultralytics.nn.modules.conv.Conv	[48, 96, 3, 2]
2	-1	2	111360	ultralytics.nn.modules.block.C2f	[96, 96, 2, True]
3	-1	1	166272	ultralytics.nn.modules.conv.Conv	[96, 192, 3, 2]
4	-1	4	813312	ultralytics.nn.modules.block.C2f	[192, 192, 4, True]
5	-1	1	664320	ultralytics.nn.modules.conv.Conv	[192, 384, 3, 2]
6	-1	4	3248640	ultralytics.nn.modules.block.C2f	[384, 384, 4, True]
7	-1	1	1991808	ultralytics.nn.modules.conv.Conv	[384, 576, 3, 2]
8	-1	2	3985920	ultralytics.nn.modules.block.C2f	[576, 576, 2, True]
9	-1	1	831168	ultralytics.nn.modules.block.SPPF	[576, 576, 5]
10	-1	1	0	torch.nn.modules.upsampling.Upsample	[None, 2, 'nearest']
11	[-1, 6]	1	0	ultralytics.nn.modules.conv.Concat	[1]
12	-1	2	1993728	ultralytics.nn.modules.block.C2f	[960, 384, 2]
13	-1	1	0	torch.nn.modules.upsampling.Upsample	[None, 2, 'nearest']
14	[-1, 4]	1	0	ultralytics.nn.modules.conv.Concat	[1]
15	-1	2	517632	ultralytics.nn.modules.block.C2f	[576, 192, 2]
16	-1	1	332160	ultralytics.nn.modules.conv.Conv	[192, 192, 3, 2]
17	[-1, 12]	1	0	ultralytics.nn.modules.conv.Concat	[1]
18	-1	2	1846272	ultralytics.nn.modules.block.C2f	[576, 384, 2]
19	-1	1	1327872	ultralytics.nn.modules.conv.Conv	[384, 384, 3, 2]
20	[-1, 9]	1	0	ultralytics.nn.modules.conv.Concat	[1]
21	-1	2	4207104	ultralytics.nn.modules.block.C2f	[960, 576, 2]
22	[15, 18, 21]	1	3776275	ultralytics.nn.modules.head.Detect	[1, [192, 384, 576]]

Model summary: 169 layers, 25,856,899 parameters, 25,856,883 gradients, 79.1 GFLOPs

Transferred 469/475 items from pretrained weights  
Freezing layer 'model.22.dfl.conv.weight'  
**AMP:** running Automatic Mixed Precision (AMP) checks...  
Downloading <https://github.com/ultralytics/assets/releases/download/v8.3.0/yolo11n.pt> to 'yolo11n.pt': 100% ————— 5  
**AMP:** checks passed   
**train:** Fast image access  (ping: 0.0±0.0 ms, read: 3310.1±814.4 MB/s, size: 353.2 KB)  
**train:** Scanning /content/pothole\_dataset/pothole\_yolo\_dataset/train/labels... 532 images, 0 backgrounds, 0 corrupt: 100% —  
**train:** New cache created: /content/pothole\_dataset/pothole\_yolo\_dataset/train/labels.cache  
**augmentations:** Blur(p=0.01, blur\_limit=(3, 7)), MedianBlur(p=0.01, blur\_limit=(3, 7)), ToGray(p=0.01, method='weighted\_av  
**val:** Fast image access  (ping: 0.0±0.0 ms, read: 1514.2±1129.2 MB/s, size: 255.5 KB)  
**val:** Scanning /content/pothole\_dataset/pothole\_yolo\_dataset/valid/labels... 133 images, 0 backgrounds, 0 corrupt: 100% —  
**val:** New cache created: /content/pothole\_dataset/pothole\_yolo\_dataset/valid/labels.cache  
Plotting labels to /content/runs/detect/pothole\_strong2/labels.jpg...  
**optimizer:** 'optimizer=auto' found, ignoring 'lr0=0.01' and 'momentum=0.937' and determining best 'optimizer', 'lr0' and 'm  
**optimizer:** AdamW(lr=0.002, momentum=0.9) with parameter groups 77 weight(decay=0.0), 84 weight(decay=0.0005), 83 bias(deca  
Image sizes 1280 train, 1280 val  
Using 2 dataloader workers  
Logging results to /content/runs/detect/pothole\_strong2  
Starting training for 120 epochs...


Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
1/120	12.8G	1.973	2.994	2.066	23	1280: 100% —————	67/67 1.0it/s 1:06
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ————— 9/9 1.4it/s 6.
	all	133	324	0.0276	0.309	0.0169	0.00564

Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
2/120	15.0G	1.064	2.403	2.004	16	1280: 100% —————	67/67 1.0it/s 1:07

```
from google.colab import files
files.download('/content/runs/detect/pothole_strong2/weights/best.pt')
files.download('/content/runs/detect/pothole_strong2/weights/last.pt')
```




```
files.download('/content/runs/detect/pothole_strong2/weights/last.pt')
```

```
!yolo detect train \
  data="/content/pothole_dataset/pothole_yolo_dataset/data.yaml" \
  model="/content/runs/detect/pothole_strong2/weights/best.pt" \
  epochs=50 \
  batch=4 \
  imgsz=1280 \
  lr0=0.005 \
  name=pothole_finetuned
```

Ultralytics 8.3.222  Python-3.12.12 torch-2.8.0+cu126 CUDA:0 (Tesla T4, 15095MiB)  
**engine/trainer:** agnostic\_nms=False, amp=True, augment=False, auto\_augment=randaugument, batch=4, bgr=0.0, box=7.5, cache=Fa

	from	n	params	module	arguments
0	-1	1	1392	ultralytics.nn.modules.conv.Conv	[3, 48, 3, 2]
1	-1	1	41664	ultralytics.nn.modules.conv.Conv	[48, 96, 3, 2]
2	-1	2	111360	ultralytics.nn.modules.block.C2f	[96, 96, 2, True]
3	-1	1	166272	ultralytics.nn.modules.conv.Conv	[96, 192, 3, 2]
4	-1	4	813312	ultralytics.nn.modules.block.C2f	[192, 192, 4, True]
5	-1	1	664320	ultralytics.nn.modules.conv.Conv	[192, 384, 3, 2]
6	-1	4	3248640	ultralytics.nn.modules.block.C2f	[384, 384, 4, True]
7	-1	1	1991808	ultralytics.nn.modules.conv.Conv	[384, 576, 3, 2]
8	-1	2	3985920	ultralytics.nn.modules.block.C2f	[576, 576, 2, True]
9	-1	1	831168	ultralytics.nn.modules.block.SPPF	[576, 576, 5]
10	-1	1	0	torch.nn.modules.upsampling.Upsample	[None, 2, 'nearest']
11	[-1, 6]	1	0	ultralytics.nn.modules.conv.Concat	[1]
12	-1	2	1993728	ultralytics.nn.modules.block.C2f	[960, 384, 2]
13	-1	1	0	torch.nn.modules.upsampling.Upsample	[None, 2, 'nearest']
14	[-1, 4]	1	0	ultralytics.nn.modules.conv.Concat	[1]
15	-1	2	517632	ultralytics.nn.modules.block.C2f	[576, 192, 2]
16	-1	1	332160	ultralytics.nn.modules.conv.Conv	[192, 192, 3, 2]
17	[-1, 12]	1	0	ultralytics.nn.modules.conv.Concat	[1]
18	-1	2	1846272	ultralytics.nn.modules.block.C2f	[576, 384, 2]
19	-1	1	1327872	ultralytics.nn.modules.conv.Conv	[384, 384, 3, 2]
20	[-1, 9]	1	0	ultralytics.nn.modules.conv.Concat	[1]
21	-1	2	4207104	ultralytics.nn.modules.block.C2f	[960, 576, 2]
22	[15, 18, 21]	1	3776275	ultralytics.nn.modules.head.Detect	[1, [192, 384, 576]]

Model summary: 169 layers, 25,856,899 parameters, 25,856,883 gradients, 79.1 GFLOPs

Transferred 475/475 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: 0.0±0.0 ms, read: 3427.4±941.0 MB/s, size: 353.2 KB)  
**train:** Scanning /content/pothole\_dataset/pothole\_yolo\_dataset/train/labels.cache... 532 images, 0 backgrounds, 0 corrupt:  
**augmentations:** Blur(p=0.01, blur\_limit=(3, 7)), MedianBlur(p=0.01, blur\_limit=(3, 7)), ToGray(p=0.01, method='weighted\_av  
**val:** Fast image access  (ping: 0.0±0.0 ms, read: 1693.5±1632.6 MB/s, size: 255.5 KB)  
**val:** Scanning /content/pothole\_dataset/pothole\_yolo\_dataset/valid/labels.cache... 133 images, 0 backgrounds, 0 corrupt: 10  
Plotting labels to /content/runs/detect/pothole\_finetuned/labels.jpg...

**optimizer:** 'optimizer=auto' found, ignoring 'lr0=0.005' and 'momentum=0.937' and determining best 'optimizer', 'lr0' and '  
**optimizer:** AdamW(lr=0.002, momentum=0.9) with parameter groups 77 weight(decay=0.0), 84 weight(decay=0.0005), 83 bias(deca  
 Image sizes 1280 train, 1280 val  
 Using 2 dataloader workers  
 Logging results to /content/runs/detect/pothole\_finetuned  
 Starting training for 50 epochs...

Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
1/50	6.59G	1.12	0.8259	1.398	13	1280: 100% 133/133 1.9it/s 1:09
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% 17/17 2.9it/s
	all	133	324	0.785	0.657	0.74 0.441
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
2/50	6.9G	1.155	1.032	1.435	9	1280: 100% 133/133 1.9it/s 1:10
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% 17/17 3.1it/s
	all	133	324	0.685	0.614	0.677 0.393
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size

```
files.download('/content/runs/detect/pothole_finetuned/weights/best.pt')
```

```
files.download('/content/runs/detect/pothole_finetuned/weights/last.pt')
```

```
!yolo detect predict \
  model="/content/runs/detect/pothole_finetuned/weights/best.pt" \
  source="//content/Dashcam_pothole3.mp4" \
  conf=0.35 \
  iou=0.6 \
  save=True
```

```
File "/tmp/ipython-input-3612024288.py", line 2
  model="/content/runs/detect/pothole_finetuned/weights/best.pt"
  ^
IndentationError: unexpected indent
```

```
!yolo detect predict \
  model="/content/runs/detect/pothole_finetuned/weights/best.pt" \
  source="//content/Dashcam_pothole2.mp4" \
  conf=0.35 \
  iou=0.6 \
  save=True
```

Ultralytics 8.3.222 Python-3.12.12 torch-2.8.0+cu126 CUDA:0 (Tesla T4, 15095MiB)  
 Model summary (fused): 92 layers, 25,840,339 parameters, 0 gradients, 78.7 GFLOPs

```
video 1/1 (frame 1/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 60.6ms
video 1/1 (frame 2/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 58.2ms
video 1/1 (frame 3/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 58.1ms
video 1/1 (frame 4/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 44.6ms
video 1/1 (frame 5/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 43.4ms
video 1/1 (frame 6/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 40.1ms
video 1/1 (frame 7/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 39.3ms
video 1/1 (frame 8/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 39.4ms
video 1/1 (frame 9/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.8ms
video 1/1 (frame 10/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.5ms
video 1/1 (frame 11/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 12/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.9ms
video 1/1 (frame 13/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.8ms
video 1/1 (frame 14/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.4ms
video 1/1 (frame 15/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.3ms
video 1/1 (frame 16/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.4ms
video 1/1 (frame 17/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 18/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.0ms
video 1/1 (frame 19/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 20/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.8ms
video 1/1 (frame 21/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 38.0ms
video 1/1 (frame 22/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.5ms
video 1/1 (frame 23/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.6ms
video 1/1 (frame 24/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.1ms
video 1/1 (frame 25/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 26/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.1ms
video 1/1 (frame 27/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.8ms
video 1/1 (frame 28/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.7ms
video 1/1 (frame 29/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 30/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.0ms
video 1/1 (frame 31/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.1ms
video 1/1 (frame 32/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.5ms
video 1/1 (frame 33/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.5ms
video 1/1 (frame 34/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.7ms
```

```

video 1/1 (frame 35/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 36/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.6ms
video 1/1 (frame 37/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.1ms
video 1/1 (frame 38/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 39/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.4ms
video 1/1 (frame 40/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 41/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.4ms
video 1/1 (frame 42/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.6ms
video 1/1 (frame 43/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.5ms
video 1/1 (frame 44/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.2ms
video 1/1 (frame 45/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 41.8ms
video 1/1 (frame 46/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.0ms
video 1/1 (frame 47/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.0ms
video 1/1 (frame 48/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.0ms
video 1/1 (frame 49/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.5ms
video 1/1 (frame 50/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 51/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.9ms
video 1/1 (frame 52/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 53/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 36.5ms
video 1/1 (frame 54/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 38.0ms
video 1/1 (frame 55/832) //content/Dashcam_pothole2.mp4: 736x1280 (no detections), 37.7ms

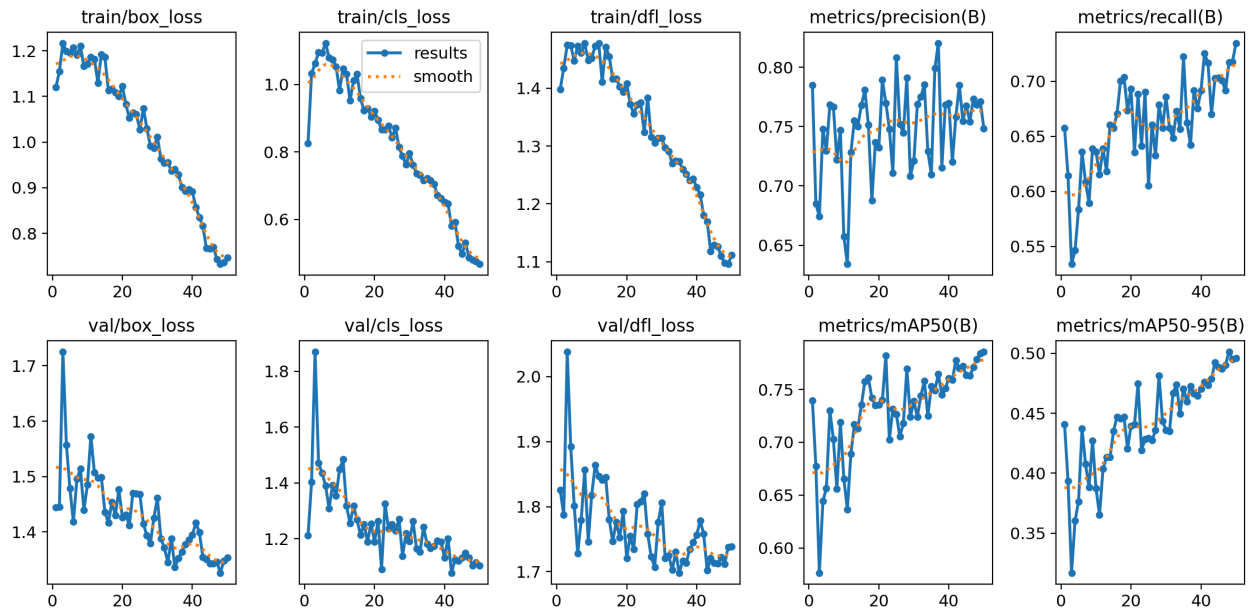
```

```
files.download('/content/runs/detect/predict2/Dashcam_pothole2.avi')
```

```

from IPython.display import Image
Image(filename='/content/runs/detect/pothole_finetuned/results.png', width=2000)

```



```

!yolo detect predict \
  model="/content/runs/detect/pothole_finetuned/weights/best.pt" \
  source="/content/Dashcam_Pothole1.mp4" \
  conf=0.35 \
  iou=0.6 \
  save=True

```

Ultralytics 8.3.222 Python-3.12.12 torch-2.8.0+cu126 CUDA:0 (Tesla T4, 15095MiB)  
 Model summary (fused): 92 layers, 25,840,339 parameters, 0 gradients, 78.7 GFLOPs

```

video 1/1 (frame 1/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 76.7ms
video 1/1 (frame 2/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 72.4ms
video 1/1 (frame 3/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 72.4ms
video 1/1 (frame 4/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 45.7ms
video 1/1 (frame 5/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 44.8ms
video 1/1 (frame 6/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 42.1ms
video 1/1 (frame 7/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 41.6ms
video 1/1 (frame 8/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 41.4ms
video 1/1 (frame 9/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.5ms

```



```

video 1/1 (frame 10/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 38.0ms
video 1/1 (frame 11/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 12/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.8ms
video 1/1 (frame 13/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.8ms
video 1/1 (frame 14/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 15/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 16/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.4ms
video 1/1 (frame 17/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.2ms
video 1/1 (frame 18/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.5ms
video 1/1 (frame 19/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 20/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.4ms
video 1/1 (frame 21/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.9ms
video 1/1 (frame 22/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.9ms
video 1/1 (frame 23/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.3ms
video 1/1 (frame 24/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.8ms
video 1/1 (frame 25/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 38.0ms
video 1/1 (frame 26/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.7ms
video 1/1 (frame 27/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.4ms
video 1/1 (frame 28/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.6ms
video 1/1 (frame 29/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.8ms
video 1/1 (frame 30/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.7ms
video 1/1 (frame 31/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 38.0ms
video 1/1 (frame 32/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.8ms
video 1/1 (frame 33/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.0ms
video 1/1 (frame 34/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 35/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 36/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.4ms
video 1/1 (frame 37/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.7ms
video 1/1 (frame 38/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.9ms
video 1/1 (frame 39/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 41.4ms
video 1/1 (frame 40/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.0ms
video 1/1 (frame 41/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 39.5ms
video 1/1 (frame 42/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 38.8ms
video 1/1 (frame 43/814) /content/Dashcam_Pothole1.mp4: 736x1280 1 pothole, 36.4ms
video 1/1 (frame 44/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 35.4ms
video 1/1 (frame 45/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.7ms
video 1/1 (frame 46/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 38.8ms
video 1/1 (frame 47/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.8ms
video 1/1 (frame 48/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 38.4ms
video 1/1 (frame 49/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.4ms
video 1/1 (frame 50/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.6ms
video 1/1 (frame 51/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.3ms
video 1/1 (frame 52/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 37.3ms
video 1/1 (frame 53/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 36.0ms
video 1/1 (frame 54/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 39.7ms
video 1/1 (frame 55/814) /content/Dashcam_Pothole1.mp4: 736x1280 (no detections), 40.2ms

```

```
files.download('/content/runs/detect/predict3/Dashcam_Pothole1.avi')
```

```

from IPython.display import Image
Image(filename='/content/runs/detect/predict/Pothole-002_jpg.rf.211f94f7dd339a1266bc76cc8445fd3b.jpg', width=600)

```

