

```
In [ ]: pip install Ultralytics
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In [ ]: !pip install roboflow
```

```
In [ ]: from ultralytics import YOLO
```

Creating new Ultralytics Settings v0.0.6 file 

View Ultralytics Settings with 'yolo settings' or at '/root/.config/Ultralytics/settings.json'

Update Settings with 'yolo settings key=value', i.e. 'yolo settings runs_dir=path/to/dir'. For help see <https://docs.ultralytics.com/quickstart/#ultralytics-settings>.

```
In [ ]: !pip install roboflow
```

```
from roboflow import Roboflow
rf = Roboflow(api_key="3YdtxL6KvqQ7V5CXIc05")
project = rf.workspace("brad-dwyer").project("wildfire-smoke")
version = project.version(1)
dataset = version.download("yolov8")
```

```
In [ ]: model= YOLO("/content/Wife Fire Smoke Detection Project/Version_115/weights/last.pt")
```

```
In [ ]: results= model.train(data="/content/Wildfire-Smoke-1/data.yaml",epochs=50,project="Wife Fire Smoke Detection Project",name="Version_1",mul
```

Ultralytics 8.3.5 🚀 Python-3.10.12 torch-2.4.1+cu121 CUDA:0 (Tesla T4, 15102MiB)

engine/trainer: task=detect, mode=train, model=/content/Wife Fire Smoke Detection Project/Version_115/weights/last.pt, data=/content/Wildfire-Smoke-1/data.yaml, epochs=50, time=None, patience=0, batch=16, imgs=640, save=True, save_period=-1, cache=False, device=None, workers=8, project=Wife Fire Smoke Detection Project, name=Version_116, exist_ok=False, pretrained=True, optimizer=auto, verbose=True, seed=0, deterministic=True, single_cls=False, rect=False, cos_lr=False, close_mosaic=10, resume=False, amp=True, fraction=1.0, profile=False, freeze=None, multi_scale=True, overlap_mask=True, mask_ratio=4, dropout=0.0, val=True, split=val, save_json=False, save_hybrid=False, conf=None, iou=0.7, max_det=300, half=False, dnn=False, plots=True, source=None, vid_stride=1, stream_buffer=False, visualize=False, augment=False, agnostic_nms=False, classes=None, retina_masks=False, embed=None, show=False, save_frames=False, save_txt=False, save_conf=False, save_crop=False, show_labels=True, show_conf=True, show_boxes=True, line_width=None, format=torchscript, keras=False, optimize=False, int8=False, dynamic=False, simplify=True, opset=None, workspace=4, nms=False, lr0=0.01, lrf=0.01, momentum=0.937, weight_decay=0.0005, warmup_epochs=3.0, warmup_momentum=0.8, warmup_bias_lr=0.1, box=7.5, cls=0.5, dfl=1.5, pose=12.0, kobj=1.0, label_smoothing=0.0, nbs=64, hsv_h=0.015, hsv_s=0.7, hsv_v=0.4, degrees=0.0, translate=0.1, scale=0.5, shear=0.0, perspective=0.0, flipud=0.0, flip_lr=0.5, bgr=0.0, mosaic=1.0, mixup=0.0, copy_paste=0.0, copy_paste_mode=flip, auto_augment=randaugument, erasing=0.4, crop_fraction=1.0, cfg=None, tracker=botsort.yaml, save_dir=Wife Fire Smoke Detection Project/Version_116

	from	n	params	module	arguments
0		-1 1	928	ultralytics.nn.modules.conv.Conv	[3, 32, 3, 2]
1		-1 1	18560	ultralytics.nn.modules.conv.Conv	[32, 64, 3, 2]
2		-1 1	29056	ultralytics.nn.modules.block.C2f	[64, 64, 1, True]
3		-1 1	73984	ultralytics.nn.modules.conv.Conv	[64, 128, 3, 2]
4		-1 2	197632	ultralytics.nn.modules.block.C2f	[128, 128, 2, True]
5		-1 1	295424	ultralytics.nn.modules.conv.Conv	[128, 256, 3, 2]
6		-1 2	788480	ultralytics.nn.modules.block.C2f	[256, 256, 2, True]
7		-1 1	1180672	ultralytics.nn.modules.conv.Conv	[256, 512, 3, 2]
8		-1 1	1838080	ultralytics.nn.modules.block.C2f	[512, 512, 1, True]
9		-1 1	656896	ultralytics.nn.modules.block.SPPF	[512, 512, 5]
10		-1 1	0	torch.nn.modules.upsampling.Upsample	[None, 2, 'nearest']
11	[-1, 6]	1	0	ultralytics.nn.modules.conv.Concat	[1]
12		-1 1	591360	ultralytics.nn.modules.block.C2f	[768, 256, 1]
13		-1 1	0	torch.nn.modules.upsampling.Upsample	[None, 2, 'nearest']
14	[-1, 4]	1	0	ultralytics.nn.modules.conv.Concat	[1]
15		-1 1	148224	ultralytics.nn.modules.block.C2f	[384, 128, 1]
16		-1 1	147712	ultralytics.nn.modules.conv.Conv	[128, 128, 3, 2]
17	[-1, 12]	1	0	ultralytics.nn.modules.conv.Concat	[1]
18		-1 1	493056	ultralytics.nn.modules.block.C2f	[384, 256, 1]
19		-1 1	590336	ultralytics.nn.modules.conv.Conv	[256, 256, 3, 2]
20	[-1, 9]	1	0	ultralytics.nn.modules.conv.Concat	[1]
21		-1 1	1969152	ultralytics.nn.modules.block.C2f	[768, 512, 1]
22	[15, 18, 21]	1	819795	ultralytics.nn.modules.head.Detect	[1, [128, 256, 512]]

Model summary: 249 layers, 9,839,347 parameters, 9,839,331 gradients, 23.6 GFLOPs

Transferred 391/391 items from pretrained weights

TensorBoard: Start with 'tensorboard --logdir Wife Fire Smoke Detection Project/Version_116', view at <http://localhost:6006/>

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

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

AMP: checks passed 

train: Scanning /content/Wildfire-Smoke-1/train/labels.cache... 516 images, 0 backgrounds, 0 corrupt: 100%|██████████| 516/516 [00:00<?, ?it/s]

augmentations: Blur(p=0.01, blur_limit=(3, 7)), MedianBlur(p=0.01, blur_limit=(3, 7)), ToGray(p=0.01, num_output_channels=3, method='weighted_average'), CLAHE(p=0.01, clip_limit=(1, 4.0), tile_grid_size=(8, 8))

val: Scanning /content/Wildfire-Smoke-1/valid/labels.cache... 147 images, 0 backgrounds, 0 corrupt: 100%|██████████| 147/147 [00:00<?, ?it/s]

Plotting labels to Wife Fire Smoke Detection Project/Version_116/labels.jpg...

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

optimizer: AdamW(lr=0.002, momentum=0.9) with parameter groups 63 weight(decay=0.0), 70 weight(decay=0.0005), 69 bias(decay=0.0)

TensorBoard: model graph visualization added 

Image sizes 640 train, 640 val

Using 8 dataloader workers

Logging results to Wife Fire Smoke Detection Project/Version_116

Starting training for 50 epochs...

Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
1/50	9.6G	1.23	0.7106	1.173	4	928: 100% ██████████ 33/33 [00:09<00:00, 3.30it/s]
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.27it/s]
	all	147	147	0.806	0.623	0.774 0.404
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
2/50	9.09G	1.323	0.785	1.211	5	416: 100% ██████████ 33/33 [00:09<00:00, 3.49it/s]
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.25it/s]
	all	147	147	0.748	0.809	0.827 0.442
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
3/50	9.42G	1.366	0.8404	1.215	9	384: 100% ██████████ 33/33 [00:09<00:00, 3.64it/s]
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.19it/s]
	all	147	147	0.758	0.707	0.766 0.374
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
4/50	10G	1.427	0.929	1.305	8	736: 100% ██████████ 33/33 [00:09<00:00, 3.36it/s]
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.12it/s]
	all	147	147	0.689	0.767	0.725 0.335
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
5/50	10.5G	1.482	0.931	1.288	3	736: 100% ██████████ 33/33 [00:08<00:00, 3.97it/s]
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.43it/s]
	all	147	147	0.705	0.823	0.824 0.405
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size
6/50	10.3G	1.468	0.9233	1.303	3	928: 100% ██████████ 33/33 [00:08<00:00, 3.94it/s]
	Class	Images	Instances	Box(P	R	mAP50 mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.23it/s]

	all	147	147	0.808	0.857	0.883	0.439
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
7/50	10.4G	1.488	0.9522	1.314	10	608: 100%	33/33 [00:09<00:00, 3.30it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.25it/s]
	all	147	147	0.736	0.738	0.737	0.361
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
8/50	9.3G	1.427	0.9582	1.308	6	352: 100%	33/33 [00:09<00:00, 3.38it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.18it/s]
	all	147	147	0.806	0.748	0.82	0.428
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
9/50	9.63G	1.422	0.9135	1.274	11	704: 100%	33/33 [00:08<00:00, 3.85it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.37it/s]
	all	147	147	0.616	0.754	0.733	0.358
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
10/50	9.1G	1.451	0.9315	1.284	5	736: 100%	33/33 [00:10<00:00, 3.27it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.11it/s]
	all	147	147	0.651	0.667	0.662	0.298
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
11/50	9.77G	1.41	0.89	1.252	6	352: 100%	33/33 [00:08<00:00, 4.02it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.35it/s]
	all	147	147	0.827	0.75	0.829	0.433
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
12/50	9.9G	1.425	0.9008	1.27	9	384: 100%	33/33 [00:09<00:00, 3.61it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.07it/s]
	all	147	147	0.73	0.803	0.785	0.391
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
13/50	8.94G	1.391	0.9118	1.27	3	704: 100%	33/33 [00:08<00:00, 3.86it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.27it/s]
	all	147	147	0.804	0.782	0.88	0.46
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
14/50	9.7G	1.416	0.9219	1.289	9	320: 100%	33/33 [00:10<00:00, 3.08it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.30it/s]
	all	147	147	0.761	0.796	0.837	0.434
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
15/50	10.7G	1.355	0.8999	1.239	7	832: 100%	33/33 [00:08<00:00, 3.88it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% 5/5 [00:00<00:00, 5.09it/s]
	all	147	147	0.851	0.857	0.896	0.487
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	

16/50	9.72G	1.338	0.8822	1.257	7	704: 100%	<div></div>	33/33 [00:10<00:00, 3.25it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.35it/s]
	all	147	147	0.76	0.796	0.836	0.441	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
17/50	9.15G	1.354	0.8674	1.241	6	960: 100%	<div></div>	33/33 [00:08<00:00, 3.76it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.19it/s]
	all	147	147	0.806	0.878	0.905	0.496	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
18/50	10.3G	1.434	0.8699	1.346	3	960: 100%	<div></div>	33/33 [00:10<00:00, 3.25it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.32it/s]
	all	147	147	0.734	0.675	0.734	0.35	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
19/50	9.8G	1.446	0.8587	1.266	5	736: 100%	<div></div>	33/33 [00:08<00:00, 3.70it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.08it/s]
	all	147	147	0.841	0.862	0.901	0.483	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
20/50	9.27G	1.372	0.8649	1.211	9	768: 100%	<div></div>	33/33 [00:07<00:00, 4.65it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.35it/s]
	all	147	147	0.811	0.823	0.88	0.474	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
21/50	9.92G	1.335	0.8449	1.227	6	608: 100%	<div></div>	33/33 [00:08<00:00, 3.79it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.20it/s]
	all	147	147	0.803	0.871	0.895	0.465	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
22/50	10.5G	1.33	0.8343	1.232	5	640: 100%	<div></div>	33/33 [00:09<00:00, 3.42it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.22it/s]
	all	147	147	0.872	0.835	0.906	0.467	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
23/50	10.4G	1.327	0.8401	1.255	7	320: 100%	<div></div>	33/33 [00:09<00:00, 3.48it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.19it/s]
	all	147	147	0.858	0.905	0.923	0.51	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
24/50	10.7G	1.288	0.789	1.219	9	416: 100%	<div></div>	33/33 [00:09<00:00, 3.33it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.18it/s]
	all	147	147	0.863	0.891	0.939	0.513	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
25/50	10.5G	1.299	0.8051	1.221	3	576: 100%	<div></div>	33/33 [00:09<00:00, 3.41it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.30it/s]
	all	147	147	0.893	0.853	0.923	0.514	

Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
26/50	10.4G	1.246	0.798	1.195	5	352: 100%	██████████ 33/33 [00:10<00:00, 3.10it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.09it/s]
	all	147	147	0.882	0.884	0.926	0.49
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
27/50	10.3G	1.242	0.7781	1.186	13	736: 100%	██████████ 33/33 [00:08<00:00, 3.86it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.30it/s]
	all	147	147	0.899	0.81	0.904	0.489
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
28/50	9.07G	1.239	0.7825	1.187	6	544: 100%	██████████ 33/33 [00:09<00:00, 3.61it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.17it/s]
	all	147	147	0.846	0.803	0.875	0.452
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
29/50	10.2G	1.297	0.8018	1.222	5	448: 100%	██████████ 33/33 [00:10<00:00, 3.25it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.35it/s]
	all	147	147	0.816	0.918	0.923	0.497
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
30/50	9.07G	1.284	0.7911	1.212	4	608: 100%	██████████ 33/33 [00:09<00:00, 3.63it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.19it/s]
	all	147	147	0.868	0.871	0.917	0.511
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
31/50	9.53G	1.252	0.732	1.19	5	864: 100%	██████████ 33/33 [00:08<00:00, 3.68it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.37it/s]
	all	147	147	0.872	0.834	0.893	0.504
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
32/50	11.1G	1.215	0.7277	1.165	7	736: 100%	██████████ 33/33 [00:09<00:00, 3.39it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.14it/s]
	all	147	147	0.853	0.884	0.91	0.493
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
33/50	10.4G	1.268	0.746	1.203	10	320: 100%	██████████ 33/33 [00:09<00:00, 3.51it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.19it/s]
	all	147	147	0.896	0.878	0.923	0.484
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
34/50	10.3G	1.212	0.7082	1.179	5	928: 100%	██████████ 33/33 [00:10<00:00, 3.23it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100% ██████████ 5/5 [00:00<00:00, 5.25it/s]
	all	147	147	0.91	0.897	0.948	0.511
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	

35/50	10.9G	1.174	0.6943	1.137	4	480: 100%	<div></div>	33/33 [00:09<00:00, 3.61it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.19it/s]
	all	147	147	0.887	0.925	0.94	0.526	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
36/50	10.2G	1.215	0.7066	1.159	9	960: 100%	<div></div>	33/33 [00:08<00:00, 3.87it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.20it/s]
	all	147	147	0.851	0.878	0.905	0.519	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
37/50	9.75G	1.166	0.713	1.133	7	928: 100%	<div></div>	33/33 [00:08<00:00, 3.68it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.11it/s]
	all	147	147	0.894	0.916	0.934	0.538	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
38/50	10.4G	1.173	0.6874	1.139	7	608: 100%	<div></div>	33/33 [00:09<00:00, 3.39it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.32it/s]
	all	147	147	0.853	0.911	0.922	0.519	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
39/50	8.58G	1.119	0.6713	1.129	11	896: 100%	<div></div>	33/33 [00:09<00:00, 3.45it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.07it/s]
	all	147	147	0.843	0.876	0.915	0.51	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
40/50	10G	1.167	0.6778	1.148	9	512: 100%	<div></div>	33/33 [00:09<00:00, 3.49it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.33it/s]
	all	147	147	0.897	0.844	0.916	0.499	
Closing dataloader mosaic								
albumentations: Blur(p=0.01, blur_limit=(3, 7)), MedianBlur(p=0.01, blur_limit=(3, 7)), ToGray(p=0.01, num_output_channels=3, method='weighted_average'), CLAHE(p=0.01, clip_limit=(1, 4.0), tile_grid_size=(8, 8))								
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
41/50	10.1G	1.174	0.666	1.165	4	448: 100%	<div></div>	33/33 [00:11<00:00, 2.99it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.26it/s]
	all	147	147	0.854	0.905	0.935	0.533	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
42/50	10.1G	1.138	0.6449	1.151	4	544: 100%	<div></div>	33/33 [00:10<00:00, 3.21it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.20it/s]
	all	147	147	0.896	0.884	0.93	0.523	
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size		
43/50	10.3G	1.165	0.6517	1.155	3	672: 100%	<div></div>	33/33 [00:09<00:00, 3.34it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	<div></div> 5/5 [00:00<00:00, 5.25it/s]
	all	147	147	0.921	0.905	0.952	0.523	

Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
44/50	10.1G	1.142	0.6217	1.129	4	448: 100%	33/33 [00:08<00:00, 3.67it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%
	all	147	147	0.918	0.913	0.954	0.535
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
45/50	9.66G	1.162	0.6235	1.152	4	864: 100%	33/33 [00:09<00:00, 3.55it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%
	all	147	147	0.901	0.871	0.94	0.548
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
46/50	9.45G	1.14	0.6245	1.144	4	928: 100%	33/33 [00:10<00:00, 3.28it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%
	all	147	147	0.944	0.864	0.953	0.548
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
47/50	10.3G	1.104	0.5995	1.119	4	672: 100%	33/33 [00:08<00:00, 3.69it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%
	all	147	147	0.902	0.898	0.951	0.542
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
48/50	10.8G	1.088	0.5943	1.123	4	864: 100%	33/33 [00:09<00:00, 3.49it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%
	all	147	147	0.935	0.857	0.962	0.553
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
49/50	9.17G	1.079	0.5954	1.118	4	960: 100%	33/33 [00:08<00:00, 3.72it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%
	all	147	147	0.937	0.878	0.962	0.552
Epoch	GPU_mem	box_loss	cls_loss	dfl_loss	Instances	Size	
50/50	9.27G	1.092	0.5938	1.109	4	352: 100%	33/33 [00:08<00:00, 4.06it/s]
	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%
	all	147	147	0.935	0.879	0.959	0.556

50 epochs completed in 0.157 hours.

Optimizer stripped from Wife Fire Smoke Detection Project/Version_116/weights/last.pt, 19.9MB

Optimizer stripped from Wife Fire Smoke Detection Project/Version_116/weights/best.pt, 19.9MB

Validating Wife Fire Smoke Detection Project/Version_116/weights/best.pt...

Ultralytics 8.3.5 🚀 Python-3.10.12 torch-2.4.1+cu121 CUDA:0 (Tesla T4, 15102MiB)

Model summary (fused): 186 layers, 9,828,051 parameters, 0 gradients, 23.3 GFLOPs

	Class	Images	Instances	Box(P	R	mAP50	mAP50-95): 100%	5/5 [00:01<00:00, 3.14it/s]
	all	147	147	0.935	0.879	0.959	0.555	

Speed: 0.2ms preprocess, 3.2ms inference, 0.0ms loss, 2.2ms postprocess per image

Results saved to Wife Fire Smoke Detection Project/Version_116


```
In [1]: import cv2
        from PIL import Image
        from ultralytics import YOLO
```

Real Time:

```
In [20]: # Load a pretrained YOLOv8n model
model = YOLO(r'C:\Users\Shorya Sharma\Desktop\Wildfire Smoke\Final Model Version 2 with 94.9\best.pt')

cap = cv2.VideoCapture(0)
while cap.isOpened():
    # Capture frame-by-frame
    ret, frame = cap.read()

    if not ret:
        break

    frame = cv2.resize(frame, (600, 500))

    # flip the image
    # frame = cv2.flip(frame, -1)

    # Run inference on the current frame
    results = model(frame) # results list

    for r in results:
        frame = r.plot()

    # Display the resulting frame
    cv2.imshow('frame', frame)

    # Press 'q' on keyboard to exit
    if cv2.waitKey(25) & 0xFF == ord('q'):
        break

# After the loop release the cap object and destroy all windows
cap.release()
cv2.destroyAllWindows()
```

0: 544x640 (no detections), 182.9ms
Speed: 9.5ms preprocess, 182.9ms inference, 2.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.4ms
Speed: 5.1ms preprocess, 196.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.2ms
Speed: 6.5ms preprocess, 173.2ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 176.5ms
Speed: 4.8ms preprocess, 176.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 180.0ms
Speed: 4.5ms preprocess, 180.0ms inference, 3.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 169.7ms
Speed: 4.1ms preprocess, 169.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 170.1ms
Speed: 5.5ms preprocess, 170.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 169.6ms
Speed: 6.2ms preprocess, 169.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.8ms
Speed: 5.6ms preprocess, 173.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 180.8ms
Speed: 9.6ms preprocess, 180.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 174.9ms
Speed: 5.8ms preprocess, 174.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 179.9ms
Speed: 0.0ms preprocess, 179.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 170.1ms
Speed: 4.2ms preprocess, 170.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 169.1ms
Speed: 5.5ms preprocess, 169.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 171.3ms
Speed: 3.4ms preprocess, 171.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 167.7ms
Speed: 3.5ms preprocess, 167.7ms inference, 1.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.9ms
Speed: 6.6ms preprocess, 173.9ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 170.0ms
Speed: 4.6ms preprocess, 170.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 183.8ms
Speed: 7.9ms preprocess, 183.8ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 181.0ms
Speed: 4.0ms preprocess, 181.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 175.6ms
Speed: 2.8ms preprocess, 175.6ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 171.8ms
Speed: 5.3ms preprocess, 171.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.7ms
Speed: 5.0ms preprocess, 173.7ms inference, 1.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 165.3ms
Speed: 4.1ms preprocess, 165.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 180.1ms
Speed: 0.0ms preprocess, 180.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.0ms
Speed: 5.0ms preprocess, 173.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 190.7ms
Speed: 7.2ms preprocess, 190.7ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 186.4ms
Speed: 7.5ms preprocess, 186.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 179.6ms
Speed: 4.4ms preprocess, 179.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 182.3ms

Speed: 4.0ms preprocess, 182.3ms inference, 0.7ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 167.9ms

Speed: 4.9ms preprocess, 167.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 168.2ms

Speed: 4.5ms preprocess, 168.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 168.8ms

Speed: 6.3ms preprocess, 168.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 168.4ms

Speed: 3.9ms preprocess, 168.4ms inference, 2.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.2ms

Speed: 5.0ms preprocess, 173.2ms inference, 0.3ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 167.7ms

Speed: 4.8ms preprocess, 167.7ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 191.0ms

Speed: 6.5ms preprocess, 191.0ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 179.3ms

Speed: 5.0ms preprocess, 179.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 171.5ms

Speed: 7.9ms preprocess, 171.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 180.1ms

Speed: 3.5ms preprocess, 180.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 180.3ms

Speed: 0.0ms preprocess, 180.3ms inference, 0.8ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 172.5ms

Speed: 3.6ms preprocess, 172.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 163.0ms

Speed: 4.5ms preprocess, 163.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 163.0ms

Speed: 5.0ms preprocess, 163.0ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 163.5ms
Speed: 3.5ms preprocess, 163.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 175.6ms
Speed: 4.6ms preprocess, 175.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 180.4ms
Speed: 3.5ms preprocess, 180.4ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 179.2ms
Speed: 4.6ms preprocess, 179.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 172.8ms
Speed: 4.0ms preprocess, 172.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 167.1ms
Speed: 6.5ms preprocess, 167.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 175.2ms
Speed: 4.3ms preprocess, 175.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 174.0ms
Speed: 5.6ms preprocess, 174.0ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 170.7ms
Speed: 3.0ms preprocess, 170.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 180.3ms
Speed: 0.0ms preprocess, 180.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 168.4ms
Speed: 4.9ms preprocess, 168.4ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 208.2ms
Speed: 5.0ms preprocess, 208.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 175.9ms
Speed: 5.5ms preprocess, 175.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 179.8ms
Speed: 2.4ms preprocess, 179.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 190.2ms
Speed: 3.5ms preprocess, 190.2ms inference, 0.9ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 184.1ms
Speed: 4.7ms preprocess, 184.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.0ms
Speed: 5.2ms preprocess, 173.0ms inference, 1.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 177.6ms
Speed: 0.0ms preprocess, 177.6ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 169.1ms
Speed: 4.6ms preprocess, 169.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 167.6ms
Speed: 4.4ms preprocess, 167.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 180.2ms
Speed: 4.3ms preprocess, 180.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 182.7ms
Speed: 3.6ms preprocess, 182.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 173.1ms
Speed: 4.1ms preprocess, 173.1ms inference, 0.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 169.5ms
Speed: 5.9ms preprocess, 169.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 183.0ms
Speed: 8.0ms preprocess, 183.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 167.5ms
Speed: 4.6ms preprocess, 167.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 169.1ms
Speed: 4.7ms preprocess, 169.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 166.9ms
Speed: 5.3ms preprocess, 166.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 168.2ms
Speed: 4.5ms preprocess, 168.2ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 230.6ms

Speed: 7.4ms preprocess, 230.6ms inference, 0.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 234.2ms

Speed: 6.6ms preprocess, 234.2ms inference, 3.3ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.9ms

Speed: 4.7ms preprocess, 203.9ms inference, 1.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 177.9ms

Speed: 0.0ms preprocess, 177.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 169.0ms

Speed: 4.8ms preprocess, 169.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 171.5ms

Speed: 4.2ms preprocess, 171.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 174.3ms

Speed: 4.5ms preprocess, 174.3ms inference, 0.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 183.2ms

Speed: 5.5ms preprocess, 183.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 174.6ms

Speed: 5.7ms preprocess, 174.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 186.9ms

Speed: 0.0ms preprocess, 186.9ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 187.5ms

Speed: 4.6ms preprocess, 187.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.9ms

Speed: 5.2ms preprocess, 197.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.0ms

Speed: 9.3ms preprocess, 199.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.2ms

Speed: 8.8ms preprocess, 201.2ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.5ms

Speed: 5.3ms preprocess, 194.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.0ms
Speed: 0.0ms preprocess, 200.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.6ms
Speed: 6.3ms preprocess, 204.6ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.1ms
Speed: 5.5ms preprocess, 196.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.5ms
Speed: 6.6ms preprocess, 205.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 217.2ms
Speed: 6.7ms preprocess, 217.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.0ms
Speed: 5.6ms preprocess, 199.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.0ms
Speed: 8.9ms preprocess, 201.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 191.2ms
Speed: 5.5ms preprocess, 191.2ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.0ms
Speed: 8.8ms preprocess, 194.0ms inference, 3.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.2ms
Speed: 5.3ms preprocess, 197.2ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.0ms
Speed: 4.3ms preprocess, 194.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.8ms
Speed: 6.0ms preprocess, 194.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 208.2ms
Speed: 9.6ms preprocess, 208.2ms inference, 5.4ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 207.0ms
Speed: 4.5ms preprocess, 207.0ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.9ms
Speed: 5.5ms preprocess, 195.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.4ms
Speed: 8.3ms preprocess, 192.4ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.6ms
Speed: 6.3ms preprocess, 193.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.8ms
Speed: 5.8ms preprocess, 193.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.7ms
Speed: 6.0ms preprocess, 193.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.7ms
Speed: 5.9ms preprocess, 194.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 209.7ms
Speed: 2.3ms preprocess, 209.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.2ms
Speed: 7.0ms preprocess, 205.2ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.3ms
Speed: 6.6ms preprocess, 203.3ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.9ms
Speed: 6.1ms preprocess, 193.9ms inference, 1.3ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 190.6ms
Speed: 5.4ms preprocess, 190.6ms inference, 3.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 243.4ms
Speed: 6.5ms preprocess, 243.4ms inference, 1.4ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.8ms
Speed: 4.0ms preprocess, 203.8ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.2ms
Speed: 6.3ms preprocess, 195.2ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 207.3ms
Speed: 8.8ms preprocess, 207.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.3ms

Speed: 5.1ms preprocess, 205.3ms inference, 4.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 206.9ms

Speed: 4.8ms preprocess, 206.9ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 206.9ms

Speed: 8.0ms preprocess, 206.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 189.2ms

Speed: 6.8ms preprocess, 189.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.7ms

Speed: 5.3ms preprocess, 193.7ms inference, 0.8ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.2ms

Speed: 7.5ms preprocess, 201.2ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 188.3ms

Speed: 6.0ms preprocess, 188.3ms inference, 0.9ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.5ms

Speed: 6.1ms preprocess, 205.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.1ms

Speed: 9.2ms preprocess, 200.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 220.4ms

Speed: 9.0ms preprocess, 220.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.7ms

Speed: 5.5ms preprocess, 195.7ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 183.5ms

Speed: 4.7ms preprocess, 183.5ms inference, 7.1ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.1ms

Speed: 5.1ms preprocess, 194.1ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.7ms

Speed: 4.7ms preprocess, 194.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.1ms

Speed: 0.0ms preprocess, 197.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 187.8ms
Speed: 6.2ms preprocess, 187.8ms inference, 1.3ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.3ms
Speed: 6.5ms preprocess, 200.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 218.9ms
Speed: 8.9ms preprocess, 218.9ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.3ms
Speed: 5.9ms preprocess, 196.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.3ms
Speed: 5.5ms preprocess, 197.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.9ms
Speed: 9.1ms preprocess, 201.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 209.4ms
Speed: 0.0ms preprocess, 209.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.1ms
Speed: 5.5ms preprocess, 196.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.6ms
Speed: 7.5ms preprocess, 195.6ms inference, 1.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.3ms
Speed: 5.5ms preprocess, 202.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 211.0ms
Speed: 6.0ms preprocess, 211.0ms inference, 1.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.7ms
Speed: 9.1ms preprocess, 197.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.9ms
Speed: 2.2ms preprocess, 192.9ms inference, 3.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.3ms
Speed: 0.0ms preprocess, 195.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.2ms
Speed: 5.6ms preprocess, 195.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.3ms
Speed: 4.3ms preprocess, 193.3ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.2ms
Speed: 5.0ms preprocess, 195.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 190.3ms
Speed: 4.5ms preprocess, 190.3ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 209.0ms
Speed: 3.6ms preprocess, 209.0ms inference, 7.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 215.2ms
Speed: 8.1ms preprocess, 215.2ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.0ms
Speed: 4.7ms preprocess, 200.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.0ms
Speed: 6.7ms preprocess, 201.0ms inference, 2.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.3ms
Speed: 4.5ms preprocess, 201.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.4ms
Speed: 9.3ms preprocess, 197.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.4ms
Speed: 5.3ms preprocess, 195.4ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.9ms
Speed: 5.5ms preprocess, 199.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.6ms
Speed: 6.8ms preprocess, 201.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 213.8ms
Speed: 8.5ms preprocess, 213.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.5ms
Speed: 4.7ms preprocess, 196.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.8ms

Speed: 6.8ms preprocess, 199.8ms inference, 0.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 207.5ms

Speed: 4.3ms preprocess, 207.5ms inference, 0.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.0ms

Speed: 5.5ms preprocess, 195.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 191.2ms

Speed: 5.5ms preprocess, 191.2ms inference, 4.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.3ms

Speed: 6.7ms preprocess, 195.3ms inference, 1.3ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.2ms

Speed: 6.2ms preprocess, 192.2ms inference, 9.7ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 216.5ms

Speed: 5.6ms preprocess, 216.5ms inference, 1.8ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 214.7ms

Speed: 5.7ms preprocess, 214.7ms inference, 4.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.7ms

Speed: 8.0ms preprocess, 196.7ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.8ms

Speed: 6.1ms preprocess, 195.8ms inference, 4.7ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.9ms

Speed: 4.8ms preprocess, 202.9ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.9ms

Speed: 5.5ms preprocess, 201.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.8ms

Speed: 5.0ms preprocess, 193.8ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.5ms

Speed: 2.5ms preprocess, 200.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 220.7ms

Speed: 8.9ms preprocess, 220.7ms inference, 5.1ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 216.2ms
Speed: 6.1ms preprocess, 216.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.5ms
Speed: 5.5ms preprocess, 192.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.7ms
Speed: 6.3ms preprocess, 200.7ms inference, 1.3ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 198.8ms
Speed: 4.4ms preprocess, 198.8ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.9ms
Speed: 4.1ms preprocess, 194.9ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 189.9ms
Speed: 6.3ms preprocess, 189.9ms inference, 2.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.6ms
Speed: 5.5ms preprocess, 196.6ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 208.3ms
Speed: 5.0ms preprocess, 208.3ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 222.9ms
Speed: 4.1ms preprocess, 222.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.6ms
Speed: 8.0ms preprocess, 201.6ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.3ms
Speed: 6.6ms preprocess, 192.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.5ms
Speed: 4.7ms preprocess, 196.5ms inference, 6.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.7ms
Speed: 6.0ms preprocess, 194.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.2ms
Speed: 8.7ms preprocess, 192.2ms inference, 5.1ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.6ms
Speed: 6.2ms preprocess, 194.6ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.1ms
Speed: 4.5ms preprocess, 200.1ms inference, 3.9ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 212.4ms
Speed: 5.6ms preprocess, 212.4ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 206.5ms
Speed: 6.7ms preprocess, 206.5ms inference, 0.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.4ms
Speed: 4.3ms preprocess, 204.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 213.2ms
Speed: 6.4ms preprocess, 213.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.2ms
Speed: 9.3ms preprocess, 194.2ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.1ms
Speed: 8.3ms preprocess, 196.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 208.5ms
Speed: 4.5ms preprocess, 208.5ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 224.8ms
Speed: 5.6ms preprocess, 224.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 217.3ms
Speed: 9.1ms preprocess, 217.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 206.3ms
Speed: 8.6ms preprocess, 206.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.5ms
Speed: 7.9ms preprocess, 201.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 206.2ms
Speed: 6.5ms preprocess, 206.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 241.9ms
Speed: 6.6ms preprocess, 241.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.2ms

Speed: 8.1ms preprocess, 197.2ms inference, 4.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 198.4ms

Speed: 8.2ms preprocess, 198.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.5ms

Speed: 3.8ms preprocess, 199.5ms inference, 0.9ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 210.1ms

Speed: 5.3ms preprocess, 210.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 208.3ms

Speed: 1.5ms preprocess, 208.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.6ms

Speed: 6.2ms preprocess, 204.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.6ms

Speed: 9.2ms preprocess, 202.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.0ms

Speed: 9.1ms preprocess, 192.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.2ms

Speed: 6.0ms preprocess, 194.2ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.2ms

Speed: 3.2ms preprocess, 204.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.2ms

Speed: 5.7ms preprocess, 202.2ms inference, 3.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 214.1ms

Speed: 7.5ms preprocess, 214.1ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 208.8ms

Speed: 4.8ms preprocess, 208.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 189.4ms

Speed: 5.2ms preprocess, 189.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.7ms

Speed: 9.0ms preprocess, 205.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.7ms
Speed: 8.3ms preprocess, 196.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 191.7ms
Speed: 5.6ms preprocess, 191.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.6ms
Speed: 7.7ms preprocess, 193.6ms inference, 5.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 207.4ms
Speed: 5.8ms preprocess, 207.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 236.7ms
Speed: 3.8ms preprocess, 236.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 252.0ms
Speed: 6.3ms preprocess, 252.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 248.8ms
Speed: 3.6ms preprocess, 248.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 228.1ms
Speed: 8.8ms preprocess, 228.1ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.4ms
Speed: 6.5ms preprocess, 203.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 190.2ms
Speed: 8.8ms preprocess, 190.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.1ms
Speed: 7.2ms preprocess, 196.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.5ms
Speed: 0.0ms preprocess, 200.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.8ms
Speed: 6.3ms preprocess, 199.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 214.0ms
Speed: 4.5ms preprocess, 214.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 218.5ms
Speed: 6.2ms preprocess, 218.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.9ms
Speed: 5.0ms preprocess, 196.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.6ms
Speed: 9.3ms preprocess, 193.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.6ms
Speed: 5.7ms preprocess, 197.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.5ms
Speed: 2.7ms preprocess, 202.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.0ms
Speed: 4.5ms preprocess, 199.0ms inference, 2.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 189.1ms
Speed: 5.7ms preprocess, 189.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.9ms
Speed: 5.0ms preprocess, 199.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 223.0ms
Speed: 7.0ms preprocess, 223.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.3ms
Speed: 5.5ms preprocess, 202.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.9ms
Speed: 5.5ms preprocess, 196.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.4ms
Speed: 4.6ms preprocess, 203.4ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.3ms
Speed: 5.0ms preprocess, 202.3ms inference, 1.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.7ms
Speed: 4.0ms preprocess, 200.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.5ms
Speed: 1.1ms preprocess, 203.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 206.6ms

Speed: 2.7ms preprocess, 206.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 219.0ms

Speed: 9.1ms preprocess, 219.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.7ms

Speed: 9.8ms preprocess, 197.7ms inference, 8.1ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.1ms

Speed: 7.2ms preprocess, 196.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 198.0ms

Speed: 6.9ms preprocess, 198.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.0ms

Speed: 5.0ms preprocess, 199.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.7ms

Speed: 5.5ms preprocess, 193.7ms inference, 4.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 198.7ms

Speed: 6.1ms preprocess, 198.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.9ms

Speed: 6.0ms preprocess, 196.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 211.5ms

Speed: 7.9ms preprocess, 211.5ms inference, 1.7ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.1ms

Speed: 5.5ms preprocess, 199.1ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.3ms

Speed: 4.5ms preprocess, 200.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.8ms

Speed: 4.7ms preprocess, 193.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.7ms

Speed: 5.5ms preprocess, 201.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.6ms

Speed: 5.0ms preprocess, 204.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.3ms
Speed: 6.7ms preprocess, 192.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.2ms
Speed: 5.2ms preprocess, 193.2ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.3ms
Speed: 8.3ms preprocess, 203.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 213.4ms
Speed: 5.5ms preprocess, 213.4ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.4ms
Speed: 2.1ms preprocess, 199.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.4ms
Speed: 8.7ms preprocess, 197.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.4ms
Speed: 3.2ms preprocess, 192.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 241.0ms
Speed: 6.2ms preprocess, 241.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.1ms
Speed: 5.3ms preprocess, 195.1ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 189.4ms
Speed: 5.5ms preprocess, 189.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 208.2ms
Speed: 7.3ms preprocess, 208.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.9ms
Speed: 3.7ms preprocess, 204.9ms inference, 8.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.2ms
Speed: 6.5ms preprocess, 194.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.9ms
Speed: 5.1ms preprocess, 196.9ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 196.0ms
Speed: 5.5ms preprocess, 196.0ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.6ms
Speed: 3.8ms preprocess, 201.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 189.7ms
Speed: 2.7ms preprocess, 189.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 191.1ms
Speed: 5.6ms preprocess, 191.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.8ms
Speed: 5.8ms preprocess, 199.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 214.4ms
Speed: 9.3ms preprocess, 214.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.8ms
Speed: 4.7ms preprocess, 205.8ms inference, 3.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 211.7ms
Speed: 4.9ms preprocess, 211.7ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 213.1ms
Speed: 6.2ms preprocess, 213.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 219.4ms
Speed: 1.9ms preprocess, 219.4ms inference, 1.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.7ms
Speed: 4.0ms preprocess, 202.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.4ms
Speed: 6.8ms preprocess, 193.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 209.7ms
Speed: 2.5ms preprocess, 209.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 198.9ms
Speed: 6.1ms preprocess, 198.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 2 smokes, 199.5ms
Speed: 6.6ms preprocess, 199.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 194.7ms

Speed: 7.0ms preprocess, 194.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 202.0ms

Speed: 3.0ms preprocess, 202.0ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 194.5ms

Speed: 9.7ms preprocess, 194.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 209.9ms

Speed: 6.5ms preprocess, 209.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 200.4ms

Speed: 0.0ms preprocess, 200.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 209.8ms

Speed: 3.4ms preprocess, 209.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.8ms

Speed: 5.6ms preprocess, 205.8ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.4ms

Speed: 5.2ms preprocess, 195.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 223.3ms

Speed: 6.0ms preprocess, 223.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 209.7ms

Speed: 4.5ms preprocess, 209.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 195.8ms

Speed: 3.0ms preprocess, 195.8ms inference, 2.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 201.6ms

Speed: 3.2ms preprocess, 201.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 193.0ms

Speed: 6.1ms preprocess, 193.0ms inference, 2.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.1ms

Speed: 3.0ms preprocess, 204.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 214.8ms

Speed: 3.2ms preprocess, 214.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 213.5ms
Speed: 4.1ms preprocess, 213.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.0ms
Speed: 3.2ms preprocess, 204.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 199.2ms
Speed: 5.5ms preprocess, 199.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 203.1ms
Speed: 6.9ms preprocess, 203.1ms inference, 0.9ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.7ms
Speed: 4.4ms preprocess, 192.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 204.8ms
Speed: 9.3ms preprocess, 204.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 210.0ms
Speed: 6.8ms preprocess, 210.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 212.5ms
Speed: 5.1ms preprocess, 212.5ms inference, 5.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 220.2ms
Speed: 3.7ms preprocess, 220.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.2ms
Speed: 2.7ms preprocess, 197.2ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.8ms
Speed: 1.7ms preprocess, 205.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 197.4ms
Speed: 9.3ms preprocess, 197.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 192.6ms
Speed: 7.6ms preprocess, 192.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 206.3ms
Speed: 0.0ms preprocess, 206.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 205.3ms
Speed: 1.7ms preprocess, 205.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 209.9ms

Speed: 8.6ms preprocess, 209.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 211.9ms

Speed: 6.5ms preprocess, 211.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

Inference Through Images:

```
In [13]: import glob
```

```
In [15]: # Load a pretrained YOLOv8n model
model = YOLO(r'C:\Users\Shorya Sharma\Desktop\Wildfire Smoke\Final Model Version 2 with 94.9\best.pt')

images= r"C:\Users\Shorya Sharma\Desktop\Wildfire Smoke\images"
images= glob.glob(images+"*.jpg")

c= 0

for img in images:

    # Load an image file
    img = cv2.imread(img) # replace with your image path

    # Resize the image (optional)
    img = cv2.resize(img, (600, 500))

    # Run inference on the image
    results = model(img, conf=0.50) # results list

    # Plot the results on the image
    for r in results:
        img = r.plot()

    # Display the resulting image
    # cv2.imshow('image', img)
    cv2.imwrite(f"output/pred{c}.jpg",img)

    c= c+1

    # Press 'q' on keyboard to exit
```



```
if cv2.waitKey(0) & 0xFF == ord('q'):  
    cv2.destroyAllWindows()
```

0: 544x640 1 smoke, 182.8ms
Speed: 4.2ms preprocess, 182.8ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 184.0ms
Speed: 4.3ms preprocess, 184.0ms inference, 2.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 207.1ms
Speed: 5.0ms preprocess, 207.1ms inference, 2.5ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 195.4ms
Speed: 0.0ms preprocess, 195.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 200.4ms
Speed: 12.0ms preprocess, 200.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 200.1ms
Speed: 4.8ms preprocess, 200.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 174.6ms
Speed: 3.8ms preprocess, 174.6ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 177.0ms
Speed: 5.3ms preprocess, 177.0ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 165.1ms
Speed: 15.8ms preprocess, 165.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 151.8ms
Speed: 7.7ms preprocess, 151.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 184.6ms
Speed: 0.0ms preprocess, 184.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 156.4ms
Speed: 2.3ms preprocess, 156.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 142.8ms
Speed: 18.2ms preprocess, 142.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 248.4ms
Speed: 2.4ms preprocess, 248.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 161.9ms
Speed: 7.9ms preprocess, 161.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 163.4ms
Speed: 0.0ms preprocess, 163.4ms inference, 15.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 176.1ms
Speed: 0.9ms preprocess, 176.1ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 157.6ms
Speed: 10.4ms preprocess, 157.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 171.8ms
Speed: 11.9ms preprocess, 171.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 150.9ms
Speed: 8.5ms preprocess, 150.9ms inference, 15.6ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 161.0ms
Speed: 1.7ms preprocess, 161.0ms inference, 2.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 193.8ms
Speed: 6.0ms preprocess, 193.8ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 168.3ms
Speed: 13.2ms preprocess, 168.3ms inference, 8.3ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 179.5ms
Speed: 2.9ms preprocess, 179.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 179.4ms
Speed: 2.7ms preprocess, 179.4ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 165.7ms
Speed: 5.6ms preprocess, 165.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 180.5ms
Speed: 11.2ms preprocess, 180.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 223.3ms
Speed: 2.2ms preprocess, 223.3ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 181.9ms
Speed: 17.9ms preprocess, 181.9ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 168.6ms

Speed: 11.9ms preprocess, 168.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 172.7ms

Speed: 6.4ms preprocess, 172.7ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 171.3ms

Speed: 16.3ms preprocess, 171.3ms inference, 5.1ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 167.0ms

Speed: 9.9ms preprocess, 167.0ms inference, 1.2ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 (no detections), 160.5ms

Speed: 0.0ms preprocess, 160.5ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)

0: 544x640 1 smoke, 168.6ms

Speed: 11.7ms preprocess, 168.6ms inference, 0.0ms postprocess per image at shape (1, 3, 544, 640)





A grayscale photograph of a mountain peak with a radio tower. A blue box highlights a plume of smoke on the left side of the image. The text "smoke 0.88" is overlaid on the box.



smoke 0.82

