

YOLOv8n summary: 129 layers, 3,157,200 parameters, 0 gradients, 8.9 GFLOPs

{0: 'person', 1: 'bicycle', 2: 'car', 3: 'motorcycle', 4: 'airplane', 5: 'bus', 6: 'train', 7: 'truck', 8: 'boat', 9: 'traffic light', 10: 'fire hydrant', 11: 'stop sign', 12: 'parking meter', 13: 'bench', 14: 'bird', 15: 'cat', 16: 'dog', 17: 'horse', 18: 'sheep', 19: 'cow', 20: 'elephant', 21: 'bear', 22: 'zebra', 23: 'giraffe', 24: 'backpack', 25: 'umbrella', 26: 'handbag', 27: 'tie', 28: 'suitcase', 29: 'frisbee', 30: 'skis', 31: 'snowboard', 32: 'sports ball', 33: 'kite', 34: 'baseball bat', 35: 'baseball glove', 36: 'skateboard', 37: 'surfboard', 38: 'tennis racket', 39: 'bottle', 40: 'wine glass', 41: 'cup', 42: 'fork', 43: 'knife', 44: 'spoon', 45: 'bowl', 46: 'banana', 47: 'apple', 48: 'sandwich', 49: 'orange', 50: 'broccoli', 51: 'carrot', 52: 'hot dog', 53: 'pizza', 54: 'donut', 55: 'cake', 56: 'chair', 57: 'couch', 58: 'potted plant', 59: 'bed', 60: 'dining table', 61: 'toilet', 62: 'tv', 63: 'laptop', 64: 'mouse', 65: 'remote', 66: 'keyboard', 67: 'cell phone', 68: 'microwave', 69: 'oven', 70: 'toaster', 71: 'sink', 72: 'refrigerator', 73: 'book', 74: 'clock', 75: 'vase', 76: 'scissors', 77: 'teddy bear', 78: 'hair drier', 79: 'toothbrush'}

DetectionModel(

(model): Sequential(

(0): Conv(

(conv): Conv2d(3, 16, kernel\_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)

(bn): BatchNorm2d(16, eps=0.001, momentum=0.03, affine=True, track\_running\_stats=True)

(act): SiLU(inplace=True)

)

(1): Conv(

(conv): Conv2d(16, 32, kernel\_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)

(bn): BatchNorm2d(32, eps=0.001, momentum=0.03, affine=True, track\_running\_stats=True)

(act): SiLU(inplace=True)

)

(2): C2f(

(cv1): Conv(

(conv): Conv2d(32, 32, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn): BatchNorm2d(32, eps=0.001, momentum=0.03, affine=True, track\_running\_stats=True)

(act): SiLU(inplace=True)

)

(cv2): Conv(

(conv): Conv2d(48, 32, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn): BatchNorm2d(32, eps=0.001, momentum=0.03, affine=True, track\_running\_stats=True)

(act): SiLU(inplace=True)

```

)
(m): ModuleList(
  (0): Bottleneck(
    (cv1): Conv(
      (conv): Conv2d(16, 16, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(16, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (cv2): Conv(
      (conv): Conv2d(16, 16, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(16, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
  )
)
)
(3): Conv(
  (conv): Conv2d(32, 64, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)
  (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(4): C2f(
  (cv1): Conv(
    (conv): Conv2d(64, 64, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (cv2): Conv(
    (conv): Conv2d(128, 64, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
)

```

```

)
(m): ModuleList(
  (0-1): 2 x Bottleneck(
    (cv1): Conv(
      (conv): Conv2d(32, 32, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(32, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (cv2): Conv(
      (conv): Conv2d(32, 32, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(32, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
  )
)
)
)
(5): Conv(
  (conv): Conv2d(64, 128, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)
  (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(6): C2f(
  (cv1): Conv(
    (conv): Conv2d(128, 128, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (cv2): Conv(
    (conv): Conv2d(256, 128, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
)

```

```

)
(m): ModuleList(
  (0-1): 2 x Bottleneck(
    (cv1): Conv(
      (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (cv2): Conv(
      (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
  )
)
)
)
(7): Conv(
  (conv): Conv2d(128, 256, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)
  (bn): BatchNorm2d(256, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(8): C2f(
  (cv1): Conv(
    (conv): Conv2d(256, 256, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(256, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (cv2): Conv(
    (conv): Conv2d(384, 256, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(256, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
)

```

```

)
(m): ModuleList(
  (0): Bottleneck(
    (cv1): Conv(
      (conv): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (cv2): Conv(
      (conv): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
  )
)
)
)
(9): SPPF(
  (cv1): Conv(
    (conv): Conv2d(256, 128, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (cv2): Conv(
    (conv): Conv2d(512, 256, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(256, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (m): MaxPool2d(kernel_size=5, stride=1, padding=2, dilation=1, ceil_mode=False)
)
(10): Upsample(scale_factor=2.0, mode='nearest')
(11): Concat()

```

```

(12): C2f(
  (cv1): Conv(
    (conv): Conv2d(384, 128, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (cv2): Conv(
    (conv): Conv2d(192, 128, kernel_size=(1, 1), stride=(1, 1), bias=False)
    (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (m): ModuleList(
    (0): Bottleneck(
      (cv1): Conv(
        (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
        (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
        (act): SiLU(inplace=True)
      )
      (cv2): Conv(
        (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
        (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
        (act): SiLU(inplace=True)
      )
    )
  )
)
(13): Upsample(scale_factor=2.0, mode='nearest')
(14): Concat()
(15): C2f(
  (cv1): Conv(
    (conv): Conv2d(192, 64, kernel_size=(1, 1), stride=(1, 1), bias=False)

```

```

    (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
)
(cv2): Conv(
  (conv): Conv2d(96, 64, kernel_size=(1, 1), stride=(1, 1), bias=False)
  (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(m): ModuleList(
  (0): Bottleneck(
    (cv1): Conv(
      (conv): Conv2d(32, 32, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(32, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (cv2): Conv(
      (conv): Conv2d(32, 32, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(32, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
  )
)
)
(16): Conv(
  (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)
  (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(17): Concat()
(18): C2f(
  (cv1): Conv(

```

```

(conv): Conv2d(192, 128, kernel_size=(1, 1), stride=(1, 1), bias=False)
(bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
(act): SiLU(inplace=True)
)
(cv2): Conv(
  (conv): Conv2d(192, 128, kernel_size=(1, 1), stride=(1, 1), bias=False)
  (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(m): ModuleList(
  (0): Bottleneck(
    (cv1): Conv(
      (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (cv2): Conv(
      (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
  )
)
)
)
)
(19): Conv(
  (conv): Conv2d(128, 128, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)
  (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(20): Concat()
(21): C2f(

```



```

(cv1): Conv(
  (conv): Conv2d(384, 256, kernel_size=(1, 1), stride=(1, 1), bias=False)
  (bn): BatchNorm2d(256, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(cv2): Conv(
  (conv): Conv2d(384, 256, kernel_size=(1, 1), stride=(1, 1), bias=False)
  (bn): BatchNorm2d(256, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(m): ModuleList(
  (0): Bottleneck(
    (cv1): Conv(
      (conv): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (cv2): Conv(
      (conv): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(128, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
  )
)
)
(22): Detect(
  (cv2): ModuleList(
    (0): Sequential(
      (0): Conv(
        (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
        (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)

```

```

    (act): SiLU(inplace=True)
)
(1): Conv(
  (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
  (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
  (act): SiLU(inplace=True)
)
(2): Conv2d(64, 64, kernel_size=(1, 1), stride=(1, 1))
)
(1): Sequential(
  (0): Conv(
    (conv): Conv2d(128, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
    (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (1): Conv(
    (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
    (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (2): Conv2d(64, 64, kernel_size=(1, 1), stride=(1, 1))
)
(2): Sequential(
  (0): Conv(
    (conv): Conv2d(256, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
    (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (1): Conv(
    (conv): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
    (bn): BatchNorm2d(64, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)

```

```

    (act): SiLU(inplace=True)
  )
  (2): Conv2d(64, 64, kernel_size=(1, 1), stride=(1, 1))
)
)
(cv3): ModuleList(
  (0): Sequential(
    (0): Conv(
      (conv): Conv2d(64, 80, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(80, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (1): Conv(
      (conv): Conv2d(80, 80, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(80, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (2): Conv2d(80, 80, kernel_size=(1, 1), stride=(1, 1))
  )
  (1): Sequential(
    (0): Conv(
      (conv): Conv2d(128, 80, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(80, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (1): Conv(
      (conv): Conv2d(80, 80, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn): BatchNorm2d(80, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
      (act): SiLU(inplace=True)
    )
    (2): Conv2d(80, 80, kernel_size=(1, 1), stride=(1, 1))
  )
)

```

```
)
(2): Sequential(
  (0): Conv(
    (conv): Conv2d(256, 80, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
    (bn): BatchNorm2d(80, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (1): Conv(
    (conv): Conv2d(80, 80, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
    (bn): BatchNorm2d(80, eps=0.001, momentum=0.03, affine=True, track_running_stats=True)
    (act): SiLU(inplace=True)
  )
  (2): Conv2d(80, 80, kernel_size=(1, 1), stride=(1, 1))
)
)
(df1): DFL(
  (conv): Conv2d(16, 1, kernel_size=(1, 1), stride=(1, 1), bias=False)
)
)
)
)
```