**Conv2d(3, 64, kernel\_size=(7, 7), stride=(2, 2), padding=(3, 3), bias=False) -------------------------**

BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

ReLU(inplace=True)

MaxPool2d(kernel\_size=3, stride=2, padding=1, dilation=1, ceil\_mode=False)

Sequential(

(0): Bottleneck(

**(conv1): Conv2d(64, 64, kernel\_size=(1, 1), stride=(1, 1), bias=False)**

(bn1): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv2): Conv2d(64, 64, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)**

(bn2): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv3): Conv2d(64, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)**

(bn3): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

(downsample): Sequential(

(0): **Conv2d(64, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False) --- LOOKS AT THE BACKGROUND**

(1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

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(1): Bottleneck(

**(conv1): Conv2d(256, 64, kernel\_size=(1, 1), stride=(1, 1), bias=False) ------- SPARSE HEAT MAP**

(bn1): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv2): Conv2d(64, 64, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False) – SPARSER / ALMOST NULL**

(bn2): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv3): Conv2d(64, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False) ----- COMPARITIVELY DENSER. DETECTING EDGES**

(bn3): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(2): Bottleneck(

**(conv1): Conv2d(256, 64, kernel\_size=(1, 1), stride=(1, 1), bias=False) --- DENSER THAN 1.Bottleneck’s conv1**

(bn1): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv2): Conv2d(64, 64, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False) --- slightly different from the above conv**

(bn2): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv3): Conv2d(64, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False) – much denser heat map**

(bn3): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

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Sequential(

(0): Bottleneck(

**(conv1): Conv2d(256, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False) – focuses on few dots over the image**

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False) -gets very dense**

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False) – sparser than the previous conv layer**

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

(downsample): Sequential(

**(0): Conv2d(256, 512, kernel\_size=(1, 1), stride=(2, 2), bias=False) – HAVE NO PATTERN OF RESETTING/ IS SPARSER THAN THE PREVIOUS LAYER**

(1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

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(1): Bottleneck(

**(conv1): Conv2d(512, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False) – LOOKING AT THE BORDERS AGAIN. BORDERS AT A SPECIFIC ANGLE.**

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False) – THE BORDERS AT A SPECIFIC ANGLE BUT SLIGTHLY DIFFERENT THAN PREVIOUS**

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False) – THE HEAT MAP BECOMES SPARSE SALIENCE OBJECTS LIMITS TO CURVES OF 30DEG INCLINATION**

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(2): Bottleneck(

**(conv1): Conv2d(512, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False) – THE HEAT MAP DETECTS BORDERS AT AN ANGLE COMPLEMENTARY TO THE PREVIOUS DETECTIONS**

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False) – HEATMAP SPARSE**

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False) – STARTING TO DETECT TINY OBJECTS**

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(3): Bottleneck(

**(conv1): Conv2d(512, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False) – HEAT MAP RESET JUST DETECTING SMALL OBJECTS**

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False) -**

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

**(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False) – getting sparser**

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(4): Bottleneck(

**(conv1): Conv2d(512, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False) – heat map suggests that only horizontal and vertical detections lines**

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(5): Bottleneck(

(conv1): Conv2d(512, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(6): Bottleneck(

(conv1): Conv2d(512, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(7): Bottleneck(

(conv1): Conv2d(512, 128, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(128, 128, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(128, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

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Sequential(

(0): Bottleneck(

(conv1): Conv2d(512, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

(downsample): Sequential(

(0): Conv2d(512, 1024, kernel\_size=(1, 1), stride=(2, 2), bias=False)

(1): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

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)

(1): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(2): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(3): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(4): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(5): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(6): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(7): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(8): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(9): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(10): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(11): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(12): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(13): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(14): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(15): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(16): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(17): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(18): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(19): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(20): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(21): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(22): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(23): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(24): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(25): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(26): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(27): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(28): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(29): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(30): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

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(31): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(32): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(33): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(34): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(35): Bottleneck(

(conv1): Conv2d(1024, 256, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(256, 256, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(256, 1024, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(1024, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

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Sequential(

(0): Bottleneck(

(conv1): Conv2d(1024, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(512, 512, kernel\_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(512, 2048, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(2048, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

(downsample): Sequential(

(0): Conv2d(1024, 2048, kernel\_size=(1, 1), stride=(2, 2), bias=False)

(1): BatchNorm2d(2048, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

)

)

(1): Bottleneck(

(conv1): Conv2d(2048, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(512, 512, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(512, 2048, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(2048, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

(2): Bottleneck(

(conv1): Conv2d(2048, 512, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv2): Conv2d(512, 512, kernel\_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

(bn2): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(conv3): Conv2d(512, 2048, kernel\_size=(1, 1), stride=(1, 1), bias=False)

(bn3): BatchNorm2d(2048, eps=1e-05, momentum=0.1, affine=True, track\_running\_stats=True)

(relu): ReLU(inplace=True)

)

)

AdaptiveAvgPool2d(output\_size=(1, 1))