\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Layer (type) Output Shape Param # Connected to

==================================================================================================

input\_16 (InputLayer) [(None, 224, 224, 3 0 []

)]

conv1\_pad (ZeroPadding2D) (None, 230, 230, 3) 0 ['input\_16[0][0]']

conv1\_conv (Conv2D) (None, 112, 112, 64 9472 ['conv1\_pad[0][0]']

)

conv1\_bn (BatchNormalization) (None, 112, 112, 64 256 ['conv1\_conv[0][0]']

)

conv1\_relu (Activation) (None, 112, 112, 64 0 ['conv1\_bn[0][0]']

)

pool1\_pad (ZeroPadding2D) (None, 114, 114, 64 0 ['conv1\_relu[0][0]']

)

pool1\_pool (MaxPooling2D) (None, 56, 56, 64) 0 ['pool1\_pad[0][0]']

conv2\_block1\_1\_conv (Conv2D) (None, 56, 56, 64) 4160 ['pool1\_pool[0][0]']

conv2\_block1\_1\_bn (BatchNormal (None, 56, 56, 64) 256 ['conv2\_block1\_1\_conv[0][0]']

ization)

conv2\_block1\_1\_relu (Activatio (None, 56, 56, 64) 0 ['conv2\_block1\_1\_bn[0][0]']

n)

conv2\_block1\_2\_conv (Conv2D) (None, 56, 56, 64) 36928 ['conv2\_block1\_1\_relu[0][0]']

conv2\_block1\_2\_bn (BatchNormal (None, 56, 56, 64) 256 ['conv2\_block1\_2\_conv[0][0]']

ization)

conv2\_block1\_2\_relu (Activatio (None, 56, 56, 64) 0 ['conv2\_block1\_2\_bn[0][0]']

n)

conv2\_block1\_0\_conv (Conv2D) (None, 56, 56, 256) 16640 ['pool1\_pool[0][0]']

conv2\_block1\_3\_conv (Conv2D) (None, 56, 56, 256) 16640 ['conv2\_block1\_2\_relu[0][0]']

conv2\_block1\_0\_bn (BatchNormal (None, 56, 56, 256) 1024 ['conv2\_block1\_0\_conv[0][0]']

ization)

conv2\_block1\_3\_bn (BatchNormal (None, 56, 56, 256) 1024 ['conv2\_block1\_3\_conv[0][0]']

ization)

conv2\_block1\_add (Add) (None, 56, 56, 256) 0 ['conv2\_block1\_0\_bn[0][0]',

'conv2\_block1\_3\_bn[0][0]']

conv2\_block1\_out (Activation) (None, 56, 56, 256) 0 ['conv2\_block1\_add[0][0]']

conv2\_block2\_1\_conv (Conv2D) (None, 56, 56, 64) 16448 ['conv2\_block1\_out[0][0]']

conv2\_block2\_1\_bn (BatchNormal (None, 56, 56, 64) 256 ['conv2\_block2\_1\_conv[0][0]']

ization)

conv2\_block2\_1\_relu (Activatio (None, 56, 56, 64) 0 ['conv2\_block2\_1\_bn[0][0]']

n)

conv2\_block2\_2\_conv (Conv2D) (None, 56, 56, 64) 36928 ['conv2\_block2\_1\_relu[0][0]']

conv2\_block2\_2\_bn (BatchNormal (None, 56, 56, 64) 256 ['conv2\_block2\_2\_conv[0][0]']

ization)

conv2\_block2\_2\_relu (Activatio (None, 56, 56, 64) 0 ['conv2\_block2\_2\_bn[0][0]']

n)

conv2\_block2\_3\_conv (Conv2D) (None, 56, 56, 256) 16640 ['conv2\_block2\_2\_relu[0][0]']

conv2\_block2\_3\_bn (BatchNormal (None, 56, 56, 256) 1024 ['conv2\_block2\_3\_conv[0][0]']

ization)

conv2\_block2\_add (Add) (None, 56, 56, 256) 0 ['conv2\_block1\_out[0][0]',

'conv2\_block2\_3\_bn[0][0]']

conv2\_block2\_out (Activation) (None, 56, 56, 256) 0 ['conv2\_block2\_add[0][0]']

conv2\_block3\_1\_conv (Conv2D) (None, 56, 56, 64) 16448 ['conv2\_block2\_out[0][0]']

conv2\_block3\_1\_bn (BatchNormal (None, 56, 56, 64) 256 ['conv2\_block3\_1\_conv[0][0]']

ization)

conv2\_block3\_1\_relu (Activatio (None, 56, 56, 64) 0 ['conv2\_block3\_1\_bn[0][0]']

n)

conv2\_block3\_2\_conv (Conv2D) (None, 56, 56, 64) 36928 ['conv2\_block3\_1\_relu[0][0]']

conv2\_block3\_2\_bn (BatchNormal (None, 56, 56, 64) 256 ['conv2\_block3\_2\_conv[0][0]']

ization)

conv2\_block3\_2\_relu (Activatio (None, 56, 56, 64) 0 ['conv2\_block3\_2\_bn[0][0]']

n)

conv2\_block3\_3\_conv (Conv2D) (None, 56, 56, 256) 16640 ['conv2\_block3\_2\_relu[0][0]']

conv2\_block3\_3\_bn (BatchNormal (None, 56, 56, 256) 1024 ['conv2\_block3\_3\_conv[0][0]']

ization)

conv2\_block3\_add (Add) (None, 56, 56, 256) 0 ['conv2\_block2\_out[0][0]',

'conv2\_block3\_3\_bn[0][0]']

conv2\_block3\_out (Activation) (None, 56, 56, 256) 0 ['conv2\_block3\_add[0][0]']

conv3\_block1\_1\_conv (Conv2D) (None, 28, 28, 128) 32896 ['conv2\_block3\_out[0][0]']

conv3\_block1\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block1\_1\_conv[0][0]']

ization)

conv3\_block1\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block1\_1\_bn[0][0]']

n)

conv3\_block1\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block1\_1\_relu[0][0]']

conv3\_block1\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block1\_2\_conv[0][0]']

ization)

conv3\_block1\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block1\_2\_bn[0][0]']

n)

conv3\_block1\_0\_conv (Conv2D) (None, 28, 28, 512) 131584 ['conv2\_block3\_out[0][0]']

conv3\_block1\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block1\_2\_relu[0][0]']

conv3\_block1\_0\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block1\_0\_conv[0][0]']

ization)

conv3\_block1\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block1\_3\_conv[0][0]']

ization)

conv3\_block1\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block1\_0\_bn[0][0]',

'conv3\_block1\_3\_bn[0][0]']

conv3\_block1\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block1\_add[0][0]']

conv3\_block2\_1\_conv (Conv2D) (None, 28, 28, 128) 65664 ['conv3\_block1\_out[0][0]']

conv3\_block2\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block2\_1\_conv[0][0]']

ization)

conv3\_block2\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block2\_1\_bn[0][0]']

n)

conv3\_block2\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block2\_1\_relu[0][0]']

conv3\_block2\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block2\_2\_conv[0][0]']

ization)

conv3\_block2\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block2\_2\_bn[0][0]']

n)

conv3\_block2\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block2\_2\_relu[0][0]']

conv3\_block2\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block2\_3\_conv[0][0]']

ization)

conv3\_block2\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block1\_out[0][0]',

'conv3\_block2\_3\_bn[0][0]']

conv3\_block2\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block2\_add[0][0]']

conv3\_block3\_1\_conv (Conv2D) (None, 28, 28, 128) 65664 ['conv3\_block2\_out[0][0]']

conv3\_block3\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block3\_1\_conv[0][0]']

ization)

conv3\_block3\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block3\_1\_bn[0][0]']

n)

conv3\_block3\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block3\_1\_relu[0][0]']

conv3\_block3\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block3\_2\_conv[0][0]']

ization)

conv3\_block3\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block3\_2\_bn[0][0]']

n)

conv3\_block3\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block3\_2\_relu[0][0]']

conv3\_block3\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block3\_3\_conv[0][0]']

ization)

conv3\_block3\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block2\_out[0][0]',

'conv3\_block3\_3\_bn[0][0]']

conv3\_block3\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block3\_add[0][0]']

conv3\_block4\_1\_conv (Conv2D) (None, 28, 28, 128) 65664 ['conv3\_block3\_out[0][0]']

conv3\_block4\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block4\_1\_conv[0][0]']

ization)

conv3\_block4\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block4\_1\_bn[0][0]']

n)

conv3\_block4\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block4\_1\_relu[0][0]']

conv3\_block4\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block4\_2\_conv[0][0]']

ization)

conv3\_block4\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block4\_2\_bn[0][0]']

n)

conv3\_block4\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block4\_2\_relu[0][0]']

conv3\_block4\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block4\_3\_conv[0][0]']

ization)

conv3\_block4\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block3\_out[0][0]',

'conv3\_block4\_3\_bn[0][0]']

conv3\_block4\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block4\_add[0][0]']

conv3\_block5\_1\_conv (Conv2D) (None, 28, 28, 128) 65664 ['conv3\_block4\_out[0][0]']

conv3\_block5\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block5\_1\_conv[0][0]']

ization)

conv3\_block5\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block5\_1\_bn[0][0]']

n)

conv3\_block5\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block5\_1\_relu[0][0]']

conv3\_block5\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block5\_2\_conv[0][0]']

ization)

conv3\_block5\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block5\_2\_bn[0][0]']

n)

conv3\_block5\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block5\_2\_relu[0][0]']

conv3\_block5\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block5\_3\_conv[0][0]']

ization)

conv3\_block5\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block4\_out[0][0]',

'conv3\_block5\_3\_bn[0][0]']

conv3\_block5\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block5\_add[0][0]']

conv3\_block6\_1\_conv (Conv2D) (None, 28, 28, 128) 65664 ['conv3\_block5\_out[0][0]']

conv3\_block6\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block6\_1\_conv[0][0]']

ization)

conv3\_block6\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block6\_1\_bn[0][0]']

n)

conv3\_block6\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block6\_1\_relu[0][0]']

conv3\_block6\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block6\_2\_conv[0][0]']

ization)

conv3\_block6\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block6\_2\_bn[0][0]']

n)

conv3\_block6\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block6\_2\_relu[0][0]']

conv3\_block6\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block6\_3\_conv[0][0]']

ization)

conv3\_block6\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block5\_out[0][0]',

'conv3\_block6\_3\_bn[0][0]']

conv3\_block6\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block6\_add[0][0]']

conv3\_block7\_1\_conv (Conv2D) (None, 28, 28, 128) 65664 ['conv3\_block6\_out[0][0]']

conv3\_block7\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block7\_1\_conv[0][0]']

ization)

conv3\_block7\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block7\_1\_bn[0][0]']

n)

conv3\_block7\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block7\_1\_relu[0][0]']

conv3\_block7\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block7\_2\_conv[0][0]']

ization)

conv3\_block7\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block7\_2\_bn[0][0]']

n)

conv3\_block7\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block7\_2\_relu[0][0]']

conv3\_block7\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block7\_3\_conv[0][0]']

ization)

conv3\_block7\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block6\_out[0][0]',

'conv3\_block7\_3\_bn[0][0]']

conv3\_block7\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block7\_add[0][0]']

conv3\_block8\_1\_conv (Conv2D) (None, 28, 28, 128) 65664 ['conv3\_block7\_out[0][0]']

conv3\_block8\_1\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block8\_1\_conv[0][0]']

ization)

conv3\_block8\_1\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block8\_1\_bn[0][0]']

n)

conv3\_block8\_2\_conv (Conv2D) (None, 28, 28, 128) 147584 ['conv3\_block8\_1\_relu[0][0]']

conv3\_block8\_2\_bn (BatchNormal (None, 28, 28, 128) 512 ['conv3\_block8\_2\_conv[0][0]']

ization)

conv3\_block8\_2\_relu (Activatio (None, 28, 28, 128) 0 ['conv3\_block8\_2\_bn[0][0]']

n)

conv3\_block8\_3\_conv (Conv2D) (None, 28, 28, 512) 66048 ['conv3\_block8\_2\_relu[0][0]']

conv3\_block8\_3\_bn (BatchNormal (None, 28, 28, 512) 2048 ['conv3\_block8\_3\_conv[0][0]']

ization)

conv3\_block8\_add (Add) (None, 28, 28, 512) 0 ['conv3\_block7\_out[0][0]',

'conv3\_block8\_3\_bn[0][0]']

conv3\_block8\_out (Activation) (None, 28, 28, 512) 0 ['conv3\_block8\_add[0][0]']

conv4\_block1\_1\_conv (Conv2D) (None, 14, 14, 256) 131328 ['conv3\_block8\_out[0][0]']

conv4\_block1\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block1\_1\_conv[0][0]']

ization)

conv4\_block1\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block1\_1\_bn[0][0]']

n)

conv4\_block1\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block1\_1\_relu[0][0]']

conv4\_block1\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block1\_2\_conv[0][0]']

ization)

conv4\_block1\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block1\_2\_bn[0][0]']

n)

conv4\_block1\_0\_conv (Conv2D) (None, 14, 14, 1024 525312 ['conv3\_block8\_out[0][0]']

)

conv4\_block1\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block1\_2\_relu[0][0]']

)

conv4\_block1\_0\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block1\_0\_conv[0][0]']

ization) )

conv4\_block1\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block1\_3\_conv[0][0]']

ization) )

conv4\_block1\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block1\_0\_bn[0][0]',

) 'conv4\_block1\_3\_bn[0][0]']

conv4\_block1\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block1\_add[0][0]']

)

conv4\_block2\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block1\_out[0][0]']

conv4\_block2\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block2\_1\_conv[0][0]']

ization)

conv4\_block2\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block2\_1\_bn[0][0]']

n)

conv4\_block2\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block2\_1\_relu[0][0]']

conv4\_block2\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block2\_2\_conv[0][0]']

ization)

conv4\_block2\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block2\_2\_bn[0][0]']

n)

conv4\_block2\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block2\_2\_relu[0][0]']

)

conv4\_block2\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block2\_3\_conv[0][0]']

ization) )

conv4\_block2\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block1\_out[0][0]',

) 'conv4\_block2\_3\_bn[0][0]']

conv4\_block2\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block2\_add[0][0]']

)

conv4\_block3\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block2\_out[0][0]']

conv4\_block3\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block3\_1\_conv[0][0]']

ization)

conv4\_block3\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block3\_1\_bn[0][0]']

n)

conv4\_block3\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block3\_1\_relu[0][0]']

conv4\_block3\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block3\_2\_conv[0][0]']

ization)

conv4\_block3\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block3\_2\_bn[0][0]']

n)

conv4\_block3\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block3\_2\_relu[0][0]']

)

conv4\_block3\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block3\_3\_conv[0][0]']

ization) )

conv4\_block3\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block2\_out[0][0]',

) 'conv4\_block3\_3\_bn[0][0]']

conv4\_block3\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block3\_add[0][0]']

)

conv4\_block4\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block3\_out[0][0]']

conv4\_block4\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block4\_1\_conv[0][0]']

ization)

conv4\_block4\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block4\_1\_bn[0][0]']

n)

conv4\_block4\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block4\_1\_relu[0][0]']

conv4\_block4\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block4\_2\_conv[0][0]']

ization)

conv4\_block4\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block4\_2\_bn[0][0]']

n)

conv4\_block4\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block4\_2\_relu[0][0]']

)

conv4\_block4\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block4\_3\_conv[0][0]']

ization) )

conv4\_block4\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block3\_out[0][0]',

) 'conv4\_block4\_3\_bn[0][0]']

conv4\_block4\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block4\_add[0][0]']

)

conv4\_block5\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block4\_out[0][0]']

conv4\_block5\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block5\_1\_conv[0][0]']

ization)

conv4\_block5\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block5\_1\_bn[0][0]']

n)

conv4\_block5\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block5\_1\_relu[0][0]']

conv4\_block5\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block5\_2\_conv[0][0]']

ization)

conv4\_block5\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block5\_2\_bn[0][0]']

n)

conv4\_block5\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block5\_2\_relu[0][0]']

)

conv4\_block5\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block5\_3\_conv[0][0]']

ization) )

conv4\_block5\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block4\_out[0][0]',

) 'conv4\_block5\_3\_bn[0][0]']

conv4\_block5\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block5\_add[0][0]']

)

conv4\_block6\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block5\_out[0][0]']

conv4\_block6\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block6\_1\_conv[0][0]']

ization)

conv4\_block6\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block6\_1\_bn[0][0]']

n)

conv4\_block6\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block6\_1\_relu[0][0]']

conv4\_block6\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block6\_2\_conv[0][0]']

ization)

conv4\_block6\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block6\_2\_bn[0][0]']

n)

conv4\_block6\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block6\_2\_relu[0][0]']

)

conv4\_block6\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block6\_3\_conv[0][0]']

ization) )

conv4\_block6\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block5\_out[0][0]',

) 'conv4\_block6\_3\_bn[0][0]']

conv4\_block6\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block6\_add[0][0]']

)

conv4\_block7\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block6\_out[0][0]']

conv4\_block7\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block7\_1\_conv[0][0]']

ization)

conv4\_block7\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block7\_1\_bn[0][0]']

n)

conv4\_block7\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block7\_1\_relu[0][0]']

conv4\_block7\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block7\_2\_conv[0][0]']

ization)

conv4\_block7\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block7\_2\_bn[0][0]']

n)

conv4\_block7\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block7\_2\_relu[0][0]']

)

conv4\_block7\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block7\_3\_conv[0][0]']

ization) )

conv4\_block7\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block6\_out[0][0]',

) 'conv4\_block7\_3\_bn[0][0]']

conv4\_block7\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block7\_add[0][0]']

)

conv4\_block8\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block7\_out[0][0]']

conv4\_block8\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block8\_1\_conv[0][0]']

ization)

conv4\_block8\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block8\_1\_bn[0][0]']

n)

conv4\_block8\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block8\_1\_relu[0][0]']

conv4\_block8\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block8\_2\_conv[0][0]']

ization)

conv4\_block8\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block8\_2\_bn[0][0]']

n)

conv4\_block8\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block8\_2\_relu[0][0]']

)

conv4\_block8\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block8\_3\_conv[0][0]']

ization) )

conv4\_block8\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block7\_out[0][0]',

) 'conv4\_block8\_3\_bn[0][0]']

conv4\_block8\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block8\_add[0][0]']

)

conv4\_block9\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block8\_out[0][0]']

conv4\_block9\_1\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block9\_1\_conv[0][0]']

ization)

conv4\_block9\_1\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block9\_1\_bn[0][0]']

n)

conv4\_block9\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block9\_1\_relu[0][0]']

conv4\_block9\_2\_bn (BatchNormal (None, 14, 14, 256) 1024 ['conv4\_block9\_2\_conv[0][0]']

ization)

conv4\_block9\_2\_relu (Activatio (None, 14, 14, 256) 0 ['conv4\_block9\_2\_bn[0][0]']

n)

conv4\_block9\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block9\_2\_relu[0][0]']

)

conv4\_block9\_3\_bn (BatchNormal (None, 14, 14, 1024 4096 ['conv4\_block9\_3\_conv[0][0]']

ization) )

conv4\_block9\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block8\_out[0][0]',

) 'conv4\_block9\_3\_bn[0][0]']

conv4\_block9\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block9\_add[0][0]']

)

conv4\_block10\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block9\_out[0][0]']

conv4\_block10\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block10\_1\_conv[0][0]']

lization)

conv4\_block10\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block10\_1\_bn[0][0]']

on)

conv4\_block10\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block10\_1\_relu[0][0]']

conv4\_block10\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block10\_2\_conv[0][0]']

lization)

conv4\_block10\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block10\_2\_bn[0][0]']

on)

conv4\_block10\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block10\_2\_relu[0][0]']

)

conv4\_block10\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block10\_3\_conv[0][0]']

lization) )

conv4\_block10\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block9\_out[0][0]',

) 'conv4\_block10\_3\_bn[0][0]']

conv4\_block10\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block10\_add[0][0]']

)

conv4\_block11\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block10\_out[0][0]']

conv4\_block11\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block11\_1\_conv[0][0]']

lization)

conv4\_block11\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block11\_1\_bn[0][0]']

on)

conv4\_block11\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block11\_1\_relu[0][0]']

conv4\_block11\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block11\_2\_conv[0][0]']

lization)

conv4\_block11\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block11\_2\_bn[0][0]']

on)

conv4\_block11\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block11\_2\_relu[0][0]']

)

conv4\_block11\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block11\_3\_conv[0][0]']

lization) )

conv4\_block11\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block10\_out[0][0]',

) 'conv4\_block11\_3\_bn[0][0]']

conv4\_block11\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block11\_add[0][0]']

)

conv4\_block12\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block11\_out[0][0]']

conv4\_block12\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block12\_1\_conv[0][0]']

lization)

conv4\_block12\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block12\_1\_bn[0][0]']

on)

conv4\_block12\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block12\_1\_relu[0][0]']

conv4\_block12\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block12\_2\_conv[0][0]']

lization)

conv4\_block12\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block12\_2\_bn[0][0]']

on)

conv4\_block12\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block12\_2\_relu[0][0]']

)

conv4\_block12\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block12\_3\_conv[0][0]']

lization) )

conv4\_block12\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block11\_out[0][0]',

) 'conv4\_block12\_3\_bn[0][0]']

conv4\_block12\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block12\_add[0][0]']

)

conv4\_block13\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block12\_out[0][0]']

conv4\_block13\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block13\_1\_conv[0][0]']

lization)

conv4\_block13\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block13\_1\_bn[0][0]']

on)

conv4\_block13\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block13\_1\_relu[0][0]']

conv4\_block13\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block13\_2\_conv[0][0]']

lization)

conv4\_block13\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block13\_2\_bn[0][0]']

on)

conv4\_block13\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block13\_2\_relu[0][0]']

)

conv4\_block13\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block13\_3\_conv[0][0]']

lization) )

conv4\_block13\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block12\_out[0][0]',

) 'conv4\_block13\_3\_bn[0][0]']

conv4\_block13\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block13\_add[0][0]']

)

conv4\_block14\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block13\_out[0][0]']

conv4\_block14\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block14\_1\_conv[0][0]']

lization)

conv4\_block14\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block14\_1\_bn[0][0]']

on)

conv4\_block14\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block14\_1\_relu[0][0]']

conv4\_block14\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block14\_2\_conv[0][0]']

lization)

conv4\_block14\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block14\_2\_bn[0][0]']

on)

conv4\_block14\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block14\_2\_relu[0][0]']

)

conv4\_block14\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block14\_3\_conv[0][0]']

lization) )

conv4\_block14\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block13\_out[0][0]',

) 'conv4\_block14\_3\_bn[0][0]']

conv4\_block14\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block14\_add[0][0]']

)

conv4\_block15\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block14\_out[0][0]']

conv4\_block15\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block15\_1\_conv[0][0]']

lization)

conv4\_block15\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block15\_1\_bn[0][0]']

on)

conv4\_block15\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block15\_1\_relu[0][0]']

conv4\_block15\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block15\_2\_conv[0][0]']

lization)

conv4\_block15\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block15\_2\_bn[0][0]']

on)

conv4\_block15\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block15\_2\_relu[0][0]']

)

conv4\_block15\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block15\_3\_conv[0][0]']

lization) )

conv4\_block15\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block14\_out[0][0]',

) 'conv4\_block15\_3\_bn[0][0]']

conv4\_block15\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block15\_add[0][0]']

)

conv4\_block16\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block15\_out[0][0]']

conv4\_block16\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block16\_1\_conv[0][0]']

lization)

conv4\_block16\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block16\_1\_bn[0][0]']

on)

conv4\_block16\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block16\_1\_relu[0][0]']

conv4\_block16\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block16\_2\_conv[0][0]']

lization)

conv4\_block16\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block16\_2\_bn[0][0]']

on)

conv4\_block16\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block16\_2\_relu[0][0]']

)

conv4\_block16\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block16\_3\_conv[0][0]']

lization) )

conv4\_block16\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block15\_out[0][0]',

) 'conv4\_block16\_3\_bn[0][0]']

conv4\_block16\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block16\_add[0][0]']

)

conv4\_block17\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block16\_out[0][0]']

conv4\_block17\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block17\_1\_conv[0][0]']

lization)

conv4\_block17\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block17\_1\_bn[0][0]']

on)

conv4\_block17\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block17\_1\_relu[0][0]']

conv4\_block17\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block17\_2\_conv[0][0]']

lization)

conv4\_block17\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block17\_2\_bn[0][0]']

on)

conv4\_block17\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block17\_2\_relu[0][0]']

)

conv4\_block17\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block17\_3\_conv[0][0]']

lization) )

conv4\_block17\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block16\_out[0][0]',

) 'conv4\_block17\_3\_bn[0][0]']

conv4\_block17\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block17\_add[0][0]']

)

conv4\_block18\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block17\_out[0][0]']

conv4\_block18\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block18\_1\_conv[0][0]']

lization)

conv4\_block18\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block18\_1\_bn[0][0]']

on)

conv4\_block18\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block18\_1\_relu[0][0]']

conv4\_block18\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block18\_2\_conv[0][0]']

lization)

conv4\_block18\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block18\_2\_bn[0][0]']

on)

conv4\_block18\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block18\_2\_relu[0][0]']

)

conv4\_block18\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block18\_3\_conv[0][0]']

lization) )

conv4\_block18\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block17\_out[0][0]',

) 'conv4\_block18\_3\_bn[0][0]']

conv4\_block18\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block18\_add[0][0]']

)

conv4\_block19\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block18\_out[0][0]']

conv4\_block19\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block19\_1\_conv[0][0]']

lization)

conv4\_block19\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block19\_1\_bn[0][0]']

on)

conv4\_block19\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block19\_1\_relu[0][0]']

conv4\_block19\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block19\_2\_conv[0][0]']

lization)

conv4\_block19\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block19\_2\_bn[0][0]']

on)

conv4\_block19\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block19\_2\_relu[0][0]']

)

conv4\_block19\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block19\_3\_conv[0][0]']

lization) )

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) 'conv4\_block19\_3\_bn[0][0]']

conv4\_block19\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block19\_add[0][0]']

)

conv4\_block20\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block19\_out[0][0]']

conv4\_block20\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block20\_1\_conv[0][0]']

lization)

conv4\_block20\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block20\_1\_bn[0][0]']

on)

conv4\_block20\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block20\_1\_relu[0][0]']

conv4\_block20\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block20\_2\_conv[0][0]']

lization)

conv4\_block20\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block20\_2\_bn[0][0]']

on)

conv4\_block20\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block20\_2\_relu[0][0]']

)

conv4\_block20\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block20\_3\_conv[0][0]']

lization) )

conv4\_block20\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block19\_out[0][0]',

) 'conv4\_block20\_3\_bn[0][0]']

conv4\_block20\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block20\_add[0][0]']

)

conv4\_block21\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block20\_out[0][0]']

conv4\_block21\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block21\_1\_conv[0][0]']

lization)

conv4\_block21\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block21\_1\_bn[0][0]']

on)

conv4\_block21\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block21\_1\_relu[0][0]']

conv4\_block21\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block21\_2\_conv[0][0]']

lization)

conv4\_block21\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block21\_2\_bn[0][0]']

on)

conv4\_block21\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block21\_2\_relu[0][0]']

)

conv4\_block21\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block21\_3\_conv[0][0]']

lization) )

conv4\_block21\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block20\_out[0][0]',

) 'conv4\_block21\_3\_bn[0][0]']

conv4\_block21\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block21\_add[0][0]']

)

conv4\_block22\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block21\_out[0][0]']

conv4\_block22\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block22\_1\_conv[0][0]']

lization)

conv4\_block22\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block22\_1\_bn[0][0]']

on)

conv4\_block22\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block22\_1\_relu[0][0]']

conv4\_block22\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block22\_2\_conv[0][0]']

lization)

conv4\_block22\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block22\_2\_bn[0][0]']

on)

conv4\_block22\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block22\_2\_relu[0][0]']

)

conv4\_block22\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block22\_3\_conv[0][0]']

lization) )

conv4\_block22\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block21\_out[0][0]',

) 'conv4\_block22\_3\_bn[0][0]']

conv4\_block22\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block22\_add[0][0]']

)

conv4\_block23\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block22\_out[0][0]']

conv4\_block23\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block23\_1\_conv[0][0]']

lization)

conv4\_block23\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block23\_1\_bn[0][0]']

on)

conv4\_block23\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block23\_1\_relu[0][0]']

conv4\_block23\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block23\_2\_conv[0][0]']

lization)

conv4\_block23\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block23\_2\_bn[0][0]']

on)

conv4\_block23\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block23\_2\_relu[0][0]']

)

conv4\_block23\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block23\_3\_conv[0][0]']

lization) )

conv4\_block23\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block22\_out[0][0]',

) 'conv4\_block23\_3\_bn[0][0]']

conv4\_block23\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block23\_add[0][0]']

)

conv4\_block24\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block23\_out[0][0]']

conv4\_block24\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block24\_1\_conv[0][0]']

lization)

conv4\_block24\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block24\_1\_bn[0][0]']

on)

conv4\_block24\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block24\_1\_relu[0][0]']

conv4\_block24\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block24\_2\_conv[0][0]']

lization)

conv4\_block24\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block24\_2\_bn[0][0]']

on)

conv4\_block24\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block24\_2\_relu[0][0]']

)

conv4\_block24\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block24\_3\_conv[0][0]']

lization) )

conv4\_block24\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block23\_out[0][0]',

) 'conv4\_block24\_3\_bn[0][0]']

conv4\_block24\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block24\_add[0][0]']

)

conv4\_block25\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block24\_out[0][0]']

conv4\_block25\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block25\_1\_conv[0][0]']

lization)

conv4\_block25\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block25\_1\_bn[0][0]']

on)

conv4\_block25\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block25\_1\_relu[0][0]']

conv4\_block25\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block25\_2\_conv[0][0]']

lization)

conv4\_block25\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block25\_2\_bn[0][0]']

on)

conv4\_block25\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block25\_2\_relu[0][0]']

)

conv4\_block25\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block25\_3\_conv[0][0]']

lization) )

conv4\_block25\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block24\_out[0][0]',

) 'conv4\_block25\_3\_bn[0][0]']

conv4\_block25\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block25\_add[0][0]']

)

conv4\_block26\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block25\_out[0][0]']

conv4\_block26\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block26\_1\_conv[0][0]']

lization)

conv4\_block26\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block26\_1\_bn[0][0]']

on)

conv4\_block26\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block26\_1\_relu[0][0]']

conv4\_block26\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block26\_2\_conv[0][0]']

lization)

conv4\_block26\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block26\_2\_bn[0][0]']

on)

conv4\_block26\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block26\_2\_relu[0][0]']

)

conv4\_block26\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block26\_3\_conv[0][0]']

lization) )

conv4\_block26\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block25\_out[0][0]',

) 'conv4\_block26\_3\_bn[0][0]']

conv4\_block26\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block26\_add[0][0]']

)

conv4\_block27\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block26\_out[0][0]']

conv4\_block27\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block27\_1\_conv[0][0]']

lization)

conv4\_block27\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block27\_1\_bn[0][0]']

on)

conv4\_block27\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block27\_1\_relu[0][0]']

conv4\_block27\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block27\_2\_conv[0][0]']

lization)

conv4\_block27\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block27\_2\_bn[0][0]']

on)

conv4\_block27\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block27\_2\_relu[0][0]']

)

conv4\_block27\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block27\_3\_conv[0][0]']

lization) )

conv4\_block27\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block26\_out[0][0]',

) 'conv4\_block27\_3\_bn[0][0]']

conv4\_block27\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block27\_add[0][0]']

)

conv4\_block28\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block27\_out[0][0]']

conv4\_block28\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block28\_1\_conv[0][0]']

lization)

conv4\_block28\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block28\_1\_bn[0][0]']

on)

conv4\_block28\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block28\_1\_relu[0][0]']

conv4\_block28\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block28\_2\_conv[0][0]']

lization)

conv4\_block28\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block28\_2\_bn[0][0]']

on)

conv4\_block28\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block28\_2\_relu[0][0]']

)

conv4\_block28\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block28\_3\_conv[0][0]']

lization) )

conv4\_block28\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block27\_out[0][0]',

) 'conv4\_block28\_3\_bn[0][0]']

conv4\_block28\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block28\_add[0][0]']

)

conv4\_block29\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block28\_out[0][0]']

conv4\_block29\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block29\_1\_conv[0][0]']

lization)

conv4\_block29\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block29\_1\_bn[0][0]']

on)

conv4\_block29\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block29\_1\_relu[0][0]']

conv4\_block29\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block29\_2\_conv[0][0]']

lization)

conv4\_block29\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block29\_2\_bn[0][0]']

on)

conv4\_block29\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block29\_2\_relu[0][0]']

)

conv4\_block29\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block29\_3\_conv[0][0]']

lization) )

conv4\_block29\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block28\_out[0][0]',

) 'conv4\_block29\_3\_bn[0][0]']

conv4\_block29\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block29\_add[0][0]']

)

conv4\_block30\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block29\_out[0][0]']

conv4\_block30\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block30\_1\_conv[0][0]']

lization)

conv4\_block30\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block30\_1\_bn[0][0]']

on)

conv4\_block30\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block30\_1\_relu[0][0]']

conv4\_block30\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block30\_2\_conv[0][0]']

lization)

conv4\_block30\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block30\_2\_bn[0][0]']

on)

conv4\_block30\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block30\_2\_relu[0][0]']

)

conv4\_block30\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block30\_3\_conv[0][0]']

lization) )

conv4\_block30\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block29\_out[0][0]',

) 'conv4\_block30\_3\_bn[0][0]']

conv4\_block30\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block30\_add[0][0]']

)

conv4\_block31\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block30\_out[0][0]']

conv4\_block31\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block31\_1\_conv[0][0]']

lization)

conv4\_block31\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block31\_1\_bn[0][0]']

on)

conv4\_block31\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block31\_1\_relu[0][0]']

conv4\_block31\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block31\_2\_conv[0][0]']

lization)

conv4\_block31\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block31\_2\_bn[0][0]']

on)

conv4\_block31\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block31\_2\_relu[0][0]']

)

conv4\_block31\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block31\_3\_conv[0][0]']

lization) )

conv4\_block31\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block30\_out[0][0]',

) 'conv4\_block31\_3\_bn[0][0]']

conv4\_block31\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block31\_add[0][0]']

)

conv4\_block32\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block31\_out[0][0]']

conv4\_block32\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block32\_1\_conv[0][0]']

lization)

conv4\_block32\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block32\_1\_bn[0][0]']

on)

conv4\_block32\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block32\_1\_relu[0][0]']

conv4\_block32\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block32\_2\_conv[0][0]']

lization)

conv4\_block32\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block32\_2\_bn[0][0]']

on)

conv4\_block32\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block32\_2\_relu[0][0]']

)

conv4\_block32\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block32\_3\_conv[0][0]']

lization) )

conv4\_block32\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block31\_out[0][0]',

) 'conv4\_block32\_3\_bn[0][0]']

conv4\_block32\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block32\_add[0][0]']

)

conv4\_block33\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block32\_out[0][0]']

conv4\_block33\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block33\_1\_conv[0][0]']

lization)

conv4\_block33\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block33\_1\_bn[0][0]']

on)

conv4\_block33\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block33\_1\_relu[0][0]']

conv4\_block33\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block33\_2\_conv[0][0]']

lization)

conv4\_block33\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block33\_2\_bn[0][0]']

on)

conv4\_block33\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block33\_2\_relu[0][0]']

)

conv4\_block33\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block33\_3\_conv[0][0]']

lization) )

conv4\_block33\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block32\_out[0][0]',

) 'conv4\_block33\_3\_bn[0][0]']

conv4\_block33\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block33\_add[0][0]']

)

conv4\_block34\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block33\_out[0][0]']

conv4\_block34\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block34\_1\_conv[0][0]']

lization)

conv4\_block34\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block34\_1\_bn[0][0]']

on)

conv4\_block34\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block34\_1\_relu[0][0]']

conv4\_block34\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block34\_2\_conv[0][0]']

lization)

conv4\_block34\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block34\_2\_bn[0][0]']

on)

conv4\_block34\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block34\_2\_relu[0][0]']

)

conv4\_block34\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block34\_3\_conv[0][0]']

lization) )

conv4\_block34\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block33\_out[0][0]',

) 'conv4\_block34\_3\_bn[0][0]']

conv4\_block34\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block34\_add[0][0]']

)

conv4\_block35\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block34\_out[0][0]']

conv4\_block35\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block35\_1\_conv[0][0]']

lization)

conv4\_block35\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block35\_1\_bn[0][0]']

on)

conv4\_block35\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block35\_1\_relu[0][0]']

conv4\_block35\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block35\_2\_conv[0][0]']

lization)

conv4\_block35\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block35\_2\_bn[0][0]']

on)

conv4\_block35\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block35\_2\_relu[0][0]']

)

conv4\_block35\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block35\_3\_conv[0][0]']

lization) )

conv4\_block35\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block34\_out[0][0]',

) 'conv4\_block35\_3\_bn[0][0]']

conv4\_block35\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block35\_add[0][0]']

)

conv4\_block36\_1\_conv (Conv2D) (None, 14, 14, 256) 262400 ['conv4\_block35\_out[0][0]']

conv4\_block36\_1\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block36\_1\_conv[0][0]']

lization)

conv4\_block36\_1\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block36\_1\_bn[0][0]']

on)

conv4\_block36\_2\_conv (Conv2D) (None, 14, 14, 256) 590080 ['conv4\_block36\_1\_relu[0][0]']

conv4\_block36\_2\_bn (BatchNorma (None, 14, 14, 256) 1024 ['conv4\_block36\_2\_conv[0][0]']

lization)

conv4\_block36\_2\_relu (Activati (None, 14, 14, 256) 0 ['conv4\_block36\_2\_bn[0][0]']

on)

conv4\_block36\_3\_conv (Conv2D) (None, 14, 14, 1024 263168 ['conv4\_block36\_2\_relu[0][0]']

)

conv4\_block36\_3\_bn (BatchNorma (None, 14, 14, 1024 4096 ['conv4\_block36\_3\_conv[0][0]']

lization) )

conv4\_block36\_add (Add) (None, 14, 14, 1024 0 ['conv4\_block35\_out[0][0]',

) 'conv4\_block36\_3\_bn[0][0]']

conv4\_block36\_out (Activation) (None, 14, 14, 1024 0 ['conv4\_block36\_add[0][0]']

)

conv5\_block1\_1\_conv (Conv2D) (None, 7, 7, 512) 524800 ['conv4\_block36\_out[0][0]']

conv5\_block1\_1\_bn (BatchNormal (None, 7, 7, 512) 2048 ['conv5\_block1\_1\_conv[0][0]']

ization)

conv5\_block1\_1\_relu (Activatio (None, 7, 7, 512) 0 ['conv5\_block1\_1\_bn[0][0]']

n)

conv5\_block1\_2\_conv (Conv2D) (None, 7, 7, 512) 2359808 ['conv5\_block1\_1\_relu[0][0]']

conv5\_block1\_2\_bn (BatchNormal (None, 7, 7, 512) 2048 ['conv5\_block1\_2\_conv[0][0]']

ization)

conv5\_block1\_2\_relu (Activatio (None, 7, 7, 512) 0 ['conv5\_block1\_2\_bn[0][0]']

n)

conv5\_block1\_0\_conv (Conv2D) (None, 7, 7, 2048) 2099200 ['conv4\_block36\_out[0][0]']

conv5\_block1\_3\_conv (Conv2D) (None, 7, 7, 2048) 1050624 ['conv5\_block1\_2\_relu[0][0]']

conv5\_block1\_0\_bn (BatchNormal (None, 7, 7, 2048) 8192 ['conv5\_block1\_0\_conv[0][0]']

ization)

conv5\_block1\_3\_bn (BatchNormal (None, 7, 7, 2048) 8192 ['conv5\_block1\_3\_conv[0][0]']

ization)

conv5\_block1\_add (Add) (None, 7, 7, 2048) 0 ['conv5\_block1\_0\_bn[0][0]',

'conv5\_block1\_3\_bn[0][0]']

conv5\_block1\_out (Activation) (None, 7, 7, 2048) 0 ['conv5\_block1\_add[0][0]']

conv5\_block2\_1\_conv (Conv2D) (None, 7, 7, 512) 1049088 ['conv5\_block1\_out[0][0]']

conv5\_block2\_1\_bn (BatchNormal (None, 7, 7, 512) 2048 ['conv5\_block2\_1\_conv[0][0]']

ization)

conv5\_block2\_1\_relu (Activatio (None, 7, 7, 512) 0 ['conv5\_block2\_1\_bn[0][0]']

n)

conv5\_block2\_2\_conv (Conv2D) (None, 7, 7, 512) 2359808 ['conv5\_block2\_1\_relu[0][0]']

conv5\_block2\_2\_bn (BatchNormal (None, 7, 7, 512) 2048 ['conv5\_block2\_2\_conv[0][0]']

ization)

conv5\_block2\_2\_relu (Activatio (None, 7, 7, 512) 0 ['conv5\_block2\_2\_bn[0][0]']

n)

conv5\_block2\_3\_conv (Conv2D) (None, 7, 7, 2048) 1050624 ['conv5\_block2\_2\_relu[0][0]']

conv5\_block2\_3\_bn (BatchNormal (None, 7, 7, 2048) 8192 ['conv5\_block2\_3\_conv[0][0]']

ization)

conv5\_block2\_add (Add) (None, 7, 7, 2048) 0 ['conv5\_block1\_out[0][0]',

'conv5\_block2\_3\_bn[0][0]']

conv5\_block2\_out (Activation) (None, 7, 7, 2048) 0 ['conv5\_block2\_add[0][0]']

conv5\_block3\_1\_conv (Conv2D) (None, 7, 7, 512) 1049088 ['conv5\_block2\_out[0][0]']

conv5\_block3\_1\_bn (BatchNormal (None, 7, 7, 512) 2048 ['conv5\_block3\_1\_conv[0][0]']

ization)

conv5\_block3\_1\_relu (Activatio (None, 7, 7, 512) 0 ['conv5\_block3\_1\_bn[0][0]']

n)

conv5\_block3\_2\_conv (Conv2D) (None, 7, 7, 512) 2359808 ['conv5\_block3\_1\_relu[0][0]']

conv5\_block3\_2\_bn (BatchNormal (None, 7, 7, 512) 2048 ['conv5\_block3\_2\_conv[0][0]']

ization)

conv5\_block3\_2\_relu (Activatio (None, 7, 7, 512) 0 ['conv5\_block3\_2\_bn[0][0]']

n)

conv5\_block3\_3\_conv (Conv2D) (None, 7, 7, 2048) 1050624 ['conv5\_block3\_2\_relu[0][0]']

conv5\_block3\_3\_bn (BatchNormal (None, 7, 7, 2048) 8192 ['conv5\_block3\_3\_conv[0][0]']

ization)

conv5\_block3\_add (Add) (None, 7, 7, 2048) 0 ['conv5\_block2\_out[0][0]',

'conv5\_block3\_3\_bn[0][0]']

conv5\_block3\_out (Activation) (None, 7, 7, 2048) 0 ['conv5\_block3\_add[0][0]']

flatten\_7 (Flatten) (None, 100352) 0 ['conv5\_block3\_out[0][0]']

dense\_7 (Dense) (None, 1) 100353 ['flatten\_7[0][0]']

==================================================================================================

Total params: 58,471,297

Trainable params: 100,353

Non-trainable params: 58,370,944

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Epoch 1/100

17/17 [==============================] - 30s 1s/step - loss: 2.4712 - accuracy: 0.4711 - val\_loss: 1.6902 - val\_accuracy: 0.5597 - lr: 0.0010

Epoch 2/100

17/17 [==============================] - 13s 760ms/step - loss: 0.8528 - accuracy: 0.5940 - val\_loss: 0.6111 - val\_accuracy: 0.6567 - lr: 0.0010

Epoch 3/100

17/17 [==============================] - 12s 726ms/step - loss: 0.5239 - accuracy: 0.7169 - val\_loss: 0.6164 - val\_accuracy: 0.6567 - lr: 0.0010

Epoch 4/100

17/17 [==============================] - 13s 778ms/step - loss: 0.4556 - accuracy: 0.7840 - val\_loss: 0.5072 - val\_accuracy: 0.7612 - lr: 0.0010

Epoch 5/100

17/17 [==============================] - 13s 729ms/step - loss: 0.4207 - accuracy: 0.8156 - val\_loss: 0.6451 - val\_accuracy: 0.6343 - lr: 0.0010

Epoch 6/100

17/17 [==============================] - 13s 755ms/step - loss: 0.4812 - accuracy: 0.7449 - val\_loss: 0.4822 - val\_accuracy: 0.7612 - lr: 0.0010

Epoch 7/100

17/17 [==============================] - 13s 730ms/step - loss: 0.3842 - accuracy: 0.8361 - val\_loss: 0.5580 - val\_accuracy: 0.6940 - lr: 0.0010

Epoch 8/100

17/17 [==============================] - 13s 729ms/step - loss: 0.3603 - accuracy: 0.8547 - val\_loss: 0.4943 - val\_accuracy: 0.7313 - lr: 0.0010

Epoch 9/100

17/17 [==============================] - 13s 752ms/step - loss: 0.3283 - accuracy: 0.8827 - val\_loss: 0.4822 - val\_accuracy: 0.7836 - lr: 0.0010

Epoch 10/100

17/17 [==============================] - 13s 753ms/step - loss: 0.2943 - accuracy: 0.9162 - val\_loss: 0.4810 - val\_accuracy: 0.7761 - lr: 1.0000e-04

Epoch 11/100

17/17 [==============================] - 13s 750ms/step - loss: 0.2938 - accuracy: 0.9106 - val\_loss: 0.4805 - val\_accuracy: 0.7761 - lr: 1.0000e-04

Epoch 12/100

17/17 [==============================] - 12s 724ms/step - loss: 0.2980 - accuracy: 0.8939 - val\_loss: 0.5260 - val\_accuracy: 0.7164 - lr: 1.0000e-04

Epoch 13/100

17/17 [==============================] - 13s 751ms/step - loss: 0.2915 - accuracy: 0.8976 - val\_loss: 0.4737 - val\_accuracy: 0.7761 - lr: 1.0000e-04

Epoch 14/100

17/17 [==============================] - 12s 726ms/step - loss: 0.2858 - accuracy: 0.9125 - val\_loss: 0.4740 - val\_accuracy: 0.8060 - lr: 1.0000e-04

Epoch 15/100

17/17 [==============================] - 13s 752ms/step - loss: 0.2859 - accuracy: 0.9181 - val\_loss: 0.4727 - val\_accuracy: 0.7836 - lr: 1.0000e-04

Epoch 16/100

17/17 [==============================] - 12s 728ms/step - loss: 0.2835 - accuracy: 0.9181 - val\_loss: 0.4738 - val\_accuracy: 0.7836 - lr: 1.0000e-04

Epoch 17/100

17/17 [==============================] - 12s 732ms/step - loss: 0.2789 - accuracy: 0.9236 - val\_loss: 0.4740 - val\_accuracy: 0.7836 - lr: 1.0000e-04

Epoch 18/100

17/17 [==============================] - 12s 729ms/step - loss: 0.2776 - accuracy: 0.9255 - val\_loss: 0.4812 - val\_accuracy: 0.7761 - lr: 1.0000e-04

Epoch 19/100

17/17 [==============================] - 12s 726ms/step - loss: 0.2762 - accuracy: 0.9274 - val\_loss: 0.4769 - val\_accuracy: 0.7836 - lr: 1.0000e-05

Epoch 20/100

17/17 [==============================] - 13s 755ms/step - loss: 0.2750 - accuracy: 0.9311 - val\_loss: 0.4741 - val\_accuracy: 0.7836 - lr: 1.0000e-05

INFO:tensorflow:Assets written to: /content/drive/MyDrive/CTResNet152Split0.9noAug/assets

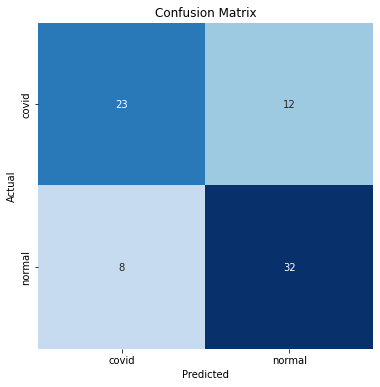
Test Loss: 0.55645

Test Accuracy: 73.33%

WARNING:tensorflow:5 out of the last 13 calls to <function Model.make\_predict\_function.<locals>.predict\_function at 0x7f02c39405f0> triggered tf.function retracing. Tracing is expensive and the excessive number of tracings could be due to (1) creating @tf.function repeatedly in a loop, (2) passing tensors with different shapes, (3) passing Python objects instead of tensors. For (1), please define your @tf.function outside of the loop. For (2), @tf.function has experimental\_relax\_shapes=True option that relaxes argument shapes that can avoid unnecessary retracing. For (3), please refer to <https://www.tensorflow.org/guide/function#controlling_retracing> and <https://www.tensorflow.org/api_docs/python/tf/function> for more details.

/usr/local/lib/python3.7/dist-packages/ipykernel\_launcher.py:123: DeprecationWarning: `np.int` is a deprecated alias for the builtin `int`. To silence this warning, use `int` by itself. Doing this will not modify any behavior and is safe. When replacing `np.int`, you may wish to use e.g. `np.int64` or `np.int32` to specify the precision. If you wish to review your current use, check the release note link for additional information.

Deprecated in NumPy 1.20; for more details and guidance: <https://numpy.org/devdocs/release/1.20.0-notes.html#deprecations>



Classification Report:

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precision recall f1-score support

covid 0.74 0.66 0.70 35

normal 0.73 0.80 0.76 40

accuracy 0.73 75

macro avg 0.73 0.73 0.73 75

weighted avg 0.73 0.73 0.73 75

