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

Layer (type) Output Shape Param # Connected to

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

input\_14 (InputLayer) [(None, 224, 224, 3 0 []

)]

conv1\_pad (ZeroPadding2D) (None, 230, 230, 3) 0 ['input\_14[0][0]']

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

)

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

)

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

conv2\_block1\_preact\_bn (BatchN (None, 56, 56, 64) 256 ['pool1\_pool[0][0]']

ormalization)

conv2\_block1\_preact\_relu (Acti (None, 56, 56, 64) 0 ['conv2\_block1\_preact\_bn[0][0]']

vation)

conv2\_block1\_1\_conv (Conv2D) (None, 56, 56, 64) 4096 ['conv2\_block1\_preact\_relu[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\_pad (ZeroPaddin (None, 58, 58, 64) 0 ['conv2\_block1\_1\_relu[0][0]']

g2D)

conv2\_block1\_2\_conv (Conv2D) (None, 56, 56, 64) 36864 ['conv2\_block1\_2\_pad[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 ['conv2\_block1\_preact\_relu[0][0]'

]

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

conv2\_block1\_out (Add) (None, 56, 56, 256) 0 ['conv2\_block1\_0\_conv[0][0]',

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

conv2\_block2\_preact\_bn (BatchN (None, 56, 56, 256) 1024 ['conv2\_block1\_out[0][0]']

ormalization)

conv2\_block2\_preact\_relu (Acti (None, 56, 56, 256) 0 ['conv2\_block2\_preact\_bn[0][0]']

vation)

conv2\_block2\_1\_conv (Conv2D) (None, 56, 56, 64) 16384 ['conv2\_block2\_preact\_relu[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\_pad (ZeroPaddin (None, 58, 58, 64) 0 ['conv2\_block2\_1\_relu[0][0]']

g2D)

conv2\_block2\_2\_conv (Conv2D) (None, 56, 56, 64) 36864 ['conv2\_block2\_2\_pad[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\_out (Add) (None, 56, 56, 256) 0 ['conv2\_block1\_out[0][0]',

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

conv2\_block3\_preact\_bn (BatchN (None, 56, 56, 256) 1024 ['conv2\_block2\_out[0][0]']

ormalization)

conv2\_block3\_preact\_relu (Acti (None, 56, 56, 256) 0 ['conv2\_block3\_preact\_bn[0][0]']

vation)

conv2\_block3\_1\_conv (Conv2D) (None, 56, 56, 64) 16384 ['conv2\_block3\_preact\_relu[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\_pad (ZeroPaddin (None, 58, 58, 64) 0 ['conv2\_block3\_1\_relu[0][0]']

g2D)

conv2\_block3\_2\_conv (Conv2D) (None, 28, 28, 64) 36864 ['conv2\_block3\_2\_pad[0][0]']

conv2\_block3\_2\_bn (BatchNormal (None, 28, 28, 64) 256 ['conv2\_block3\_2\_conv[0][0]']

ization)

conv2\_block3\_2\_relu (Activatio (None, 28, 28, 64) 0 ['conv2\_block3\_2\_bn[0][0]']

n)

max\_pooling2d\_9 (MaxPooling2D) (None, 28, 28, 256) 0 ['conv2\_block2\_out[0][0]']

conv2\_block3\_3\_conv (Conv2D) (None, 28, 28, 256) 16640 ['conv2\_block3\_2\_relu[0][0]']

conv2\_block3\_out (Add) (None, 28, 28, 256) 0 ['max\_pooling2d\_9[0][0]',

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

conv3\_block1\_preact\_bn (BatchN (None, 28, 28, 256) 1024 ['conv2\_block3\_out[0][0]']

ormalization)

conv3\_block1\_preact\_relu (Acti (None, 28, 28, 256) 0 ['conv3\_block1\_preact\_bn[0][0]']

vation)

conv3\_block1\_1\_conv (Conv2D) (None, 28, 28, 128) 32768 ['conv3\_block1\_preact\_relu[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\_pad (ZeroPaddin (None, 30, 30, 128) 0 ['conv3\_block1\_1\_relu[0][0]']

g2D)

conv3\_block1\_2\_conv (Conv2D) (None, 28, 28, 128) 147456 ['conv3\_block1\_2\_pad[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 ['conv3\_block1\_preact\_relu[0][0]'

]

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

conv3\_block1\_out (Add) (None, 28, 28, 512) 0 ['conv3\_block1\_0\_conv[0][0]',

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

conv3\_block2\_preact\_bn (BatchN (None, 28, 28, 512) 2048 ['conv3\_block1\_out[0][0]']

ormalization)

conv3\_block2\_preact\_relu (Acti (None, 28, 28, 512) 0 ['conv3\_block2\_preact\_bn[0][0]']

vation)

conv3\_block2\_1\_conv (Conv2D) (None, 28, 28, 128) 65536 ['conv3\_block2\_preact\_relu[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\_pad (ZeroPaddin (None, 30, 30, 128) 0 ['conv3\_block2\_1\_relu[0][0]']

g2D)

conv3\_block2\_2\_conv (Conv2D) (None, 28, 28, 128) 147456 ['conv3\_block2\_2\_pad[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\_out (Add) (None, 28, 28, 512) 0 ['conv3\_block1\_out[0][0]',

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

conv3\_block3\_preact\_bn (BatchN (None, 28, 28, 512) 2048 ['conv3\_block2\_out[0][0]']

ormalization)

conv3\_block3\_preact\_relu (Acti (None, 28, 28, 512) 0 ['conv3\_block3\_preact\_bn[0][0]']

vation)

conv3\_block3\_1\_conv (Conv2D) (None, 28, 28, 128) 65536 ['conv3\_block3\_preact\_relu[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\_pad (ZeroPaddin (None, 30, 30, 128) 0 ['conv3\_block3\_1\_relu[0][0]']

g2D)

conv3\_block3\_2\_conv (Conv2D) (None, 28, 28, 128) 147456 ['conv3\_block3\_2\_pad[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\_out (Add) (None, 28, 28, 512) 0 ['conv3\_block2\_out[0][0]',

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

conv3\_block4\_preact\_bn (BatchN (None, 28, 28, 512) 2048 ['conv3\_block3\_out[0][0]']

ormalization)

conv3\_block4\_preact\_relu (Acti (None, 28, 28, 512) 0 ['conv3\_block4\_preact\_bn[0][0]']

vation)

conv3\_block4\_1\_conv (Conv2D) (None, 28, 28, 128) 65536 ['conv3\_block4\_preact\_relu[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\_pad (ZeroPaddin (None, 30, 30, 128) 0 ['conv3\_block4\_1\_relu[0][0]']

g2D)

conv3\_block4\_2\_conv (Conv2D) (None, 14, 14, 128) 147456 ['conv3\_block4\_2\_pad[0][0]']

conv3\_block4\_2\_bn (BatchNormal (None, 14, 14, 128) 512 ['conv3\_block4\_2\_conv[0][0]']

ization)

conv3\_block4\_2\_relu (Activatio (None, 14, 14, 128) 0 ['conv3\_block4\_2\_bn[0][0]']

n)

max\_pooling2d\_10 (MaxPooling2D (None, 14, 14, 512) 0 ['conv3\_block3\_out[0][0]']

)

conv3\_block4\_3\_conv (Conv2D) (None, 14, 14, 512) 66048 ['conv3\_block4\_2\_relu[0][0]']

conv3\_block4\_out (Add) (None, 14, 14, 512) 0 ['max\_pooling2d\_10[0][0]',

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

conv4\_block1\_preact\_bn (BatchN (None, 14, 14, 512) 2048 ['conv3\_block4\_out[0][0]']

ormalization)

conv4\_block1\_preact\_relu (Acti (None, 14, 14, 512) 0 ['conv4\_block1\_preact\_bn[0][0]']

vation)

conv4\_block1\_1\_conv (Conv2D) (None, 14, 14, 256) 131072 ['conv4\_block1\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block1\_1\_relu[0][0]']

g2D)

conv4\_block1\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block1\_2\_pad[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 ['conv4\_block1\_preact\_relu[0][0]'

) ]

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

)

conv4\_block1\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block1\_0\_conv[0][0]',

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

conv4\_block2\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block1\_out[0][0]']

ormalization) )

conv4\_block2\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block2\_preact\_bn[0][0]']

vation) )

conv4\_block2\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block2\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block2\_1\_relu[0][0]']

g2D)

conv4\_block2\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block2\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block1\_out[0][0]',

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

conv4\_block3\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block2\_out[0][0]']

ormalization) )

conv4\_block3\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block3\_preact\_bn[0][0]']

vation) )

conv4\_block3\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block3\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block3\_1\_relu[0][0]']

g2D)

conv4\_block3\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block3\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block2\_out[0][0]',

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

conv4\_block4\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block3\_out[0][0]']

ormalization) )

conv4\_block4\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block4\_preact\_bn[0][0]']

vation) )

conv4\_block4\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block4\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block4\_1\_relu[0][0]']

g2D)

conv4\_block4\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block4\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block3\_out[0][0]',

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

conv4\_block5\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block4\_out[0][0]']

ormalization) )

conv4\_block5\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block5\_preact\_bn[0][0]']

vation) )

conv4\_block5\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block5\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block5\_1\_relu[0][0]']

g2D)

conv4\_block5\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block5\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block4\_out[0][0]',

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

conv4\_block6\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block5\_out[0][0]']

ormalization) )

conv4\_block6\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block6\_preact\_bn[0][0]']

vation) )

conv4\_block6\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block6\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block6\_1\_relu[0][0]']

g2D)

conv4\_block6\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block6\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block5\_out[0][0]',

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

conv4\_block7\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block6\_out[0][0]']

ormalization) )

conv4\_block7\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block7\_preact\_bn[0][0]']

vation) )

conv4\_block7\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block7\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block7\_1\_relu[0][0]']

g2D)

conv4\_block7\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block7\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block6\_out[0][0]',

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

conv4\_block8\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block7\_out[0][0]']

ormalization) )

conv4\_block8\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block8\_preact\_bn[0][0]']

vation) )

conv4\_block8\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block8\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block8\_1\_relu[0][0]']

g2D)

conv4\_block8\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block8\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block7\_out[0][0]',

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

conv4\_block9\_preact\_bn (BatchN (None, 14, 14, 1024 4096 ['conv4\_block8\_out[0][0]']

ormalization) )

conv4\_block9\_preact\_relu (Acti (None, 14, 14, 1024 0 ['conv4\_block9\_preact\_bn[0][0]']

vation) )

conv4\_block9\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block9\_preact\_relu[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\_pad (ZeroPaddin (None, 16, 16, 256) 0 ['conv4\_block9\_1\_relu[0][0]']

g2D)

conv4\_block9\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block9\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block8\_out[0][0]',

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

conv4\_block10\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block9\_out[0][0]']

Normalization) )

conv4\_block10\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block10\_preact\_bn[0][0]']

ivation) )

conv4\_block10\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block10\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block10\_1\_relu[0][0]']

ng2D)

conv4\_block10\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block10\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block9\_out[0][0]',

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

conv4\_block11\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block10\_out[0][0]']

Normalization) )

conv4\_block11\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block11\_preact\_bn[0][0]']

ivation) )

conv4\_block11\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block11\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block11\_1\_relu[0][0]']

ng2D)

conv4\_block11\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block11\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block10\_out[0][0]',

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

conv4\_block12\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block11\_out[0][0]']

Normalization) )

conv4\_block12\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block12\_preact\_bn[0][0]']

ivation) )

conv4\_block12\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block12\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block12\_1\_relu[0][0]']

ng2D)

conv4\_block12\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block12\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block11\_out[0][0]',

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

conv4\_block13\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block12\_out[0][0]']

Normalization) )

conv4\_block13\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block13\_preact\_bn[0][0]']

ivation) )

conv4\_block13\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block13\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block13\_1\_relu[0][0]']

ng2D)

conv4\_block13\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block13\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block12\_out[0][0]',

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

conv4\_block14\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block13\_out[0][0]']

Normalization) )

conv4\_block14\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block14\_preact\_bn[0][0]']

ivation) )

conv4\_block14\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block14\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block14\_1\_relu[0][0]']

ng2D)

conv4\_block14\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block14\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block13\_out[0][0]',

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

conv4\_block15\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block14\_out[0][0]']

Normalization) )

conv4\_block15\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block15\_preact\_bn[0][0]']

ivation) )

conv4\_block15\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block15\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block15\_1\_relu[0][0]']

ng2D)

conv4\_block15\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block15\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block14\_out[0][0]',

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

conv4\_block16\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block15\_out[0][0]']

Normalization) )

conv4\_block16\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block16\_preact\_bn[0][0]']

ivation) )

conv4\_block16\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block16\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block16\_1\_relu[0][0]']

ng2D)

conv4\_block16\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block16\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block15\_out[0][0]',

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

conv4\_block17\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block16\_out[0][0]']

Normalization) )

conv4\_block17\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block17\_preact\_bn[0][0]']

ivation) )

conv4\_block17\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block17\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block17\_1\_relu[0][0]']

ng2D)

conv4\_block17\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block17\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block16\_out[0][0]',

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

conv4\_block18\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block17\_out[0][0]']

Normalization) )

conv4\_block18\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block18\_preact\_bn[0][0]']

ivation) )

conv4\_block18\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block18\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block18\_1\_relu[0][0]']

ng2D)

conv4\_block18\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block18\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block17\_out[0][0]',

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

conv4\_block19\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block18\_out[0][0]']

Normalization) )

conv4\_block19\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block19\_preact\_bn[0][0]']

ivation) )

conv4\_block19\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block19\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block19\_1\_relu[0][0]']

ng2D)

conv4\_block19\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block19\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block18\_out[0][0]',

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

conv4\_block20\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block19\_out[0][0]']

Normalization) )

conv4\_block20\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block20\_preact\_bn[0][0]']

ivation) )

conv4\_block20\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block20\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block20\_1\_relu[0][0]']

ng2D)

conv4\_block20\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block20\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block19\_out[0][0]',

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

conv4\_block21\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block20\_out[0][0]']

Normalization) )

conv4\_block21\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block21\_preact\_bn[0][0]']

ivation) )

conv4\_block21\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block21\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block21\_1\_relu[0][0]']

ng2D)

conv4\_block21\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block21\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block20\_out[0][0]',

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

conv4\_block22\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block21\_out[0][0]']

Normalization) )

conv4\_block22\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block22\_preact\_bn[0][0]']

ivation) )

conv4\_block22\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block22\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block22\_1\_relu[0][0]']

ng2D)

conv4\_block22\_2\_conv (Conv2D) (None, 14, 14, 256) 589824 ['conv4\_block22\_2\_pad[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\_out (Add) (None, 14, 14, 1024 0 ['conv4\_block21\_out[0][0]',

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

conv4\_block23\_preact\_bn (Batch (None, 14, 14, 1024 4096 ['conv4\_block22\_out[0][0]']

Normalization) )

conv4\_block23\_preact\_relu (Act (None, 14, 14, 1024 0 ['conv4\_block23\_preact\_bn[0][0]']

ivation) )

conv4\_block23\_1\_conv (Conv2D) (None, 14, 14, 256) 262144 ['conv4\_block23\_preact\_relu[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\_pad (ZeroPaddi (None, 16, 16, 256) 0 ['conv4\_block23\_1\_relu[0][0]']

ng2D)

conv4\_block23\_2\_conv (Conv2D) (None, 7, 7, 256) 589824 ['conv4\_block23\_2\_pad[0][0]']

conv4\_block23\_2\_bn (BatchNorma (None, 7, 7, 256) 1024 ['conv4\_block23\_2\_conv[0][0]']

lization)

conv4\_block23\_2\_relu (Activati (None, 7, 7, 256) 0 ['conv4\_block23\_2\_bn[0][0]']

on)

max\_pooling2d\_11 (MaxPooling2D (None, 7, 7, 1024) 0 ['conv4\_block22\_out[0][0]']

)

conv4\_block23\_3\_conv (Conv2D) (None, 7, 7, 1024) 263168 ['conv4\_block23\_2\_relu[0][0]']

conv4\_block23\_out (Add) (None, 7, 7, 1024) 0 ['max\_pooling2d\_11[0][0]',

'conv4\_block23\_3\_conv[0][0]']

conv5\_block1\_preact\_bn (BatchN (None, 7, 7, 1024) 4096 ['conv4\_block23\_out[0][0]']

ormalization)

conv5\_block1\_preact\_relu (Acti (None, 7, 7, 1024) 0 ['conv5\_block1\_preact\_bn[0][0]']

vation)

conv5\_block1\_1\_conv (Conv2D) (None, 7, 7, 512) 524288 ['conv5\_block1\_preact\_relu[0][0]'

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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\_pad (ZeroPaddin (None, 9, 9, 512) 0 ['conv5\_block1\_1\_relu[0][0]']

g2D)

conv5\_block1\_2\_conv (Conv2D) (None, 7, 7, 512) 2359296 ['conv5\_block1\_2\_pad[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 ['conv5\_block1\_preact\_relu[0][0]'

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

conv5\_block1\_out (Add) (None, 7, 7, 2048) 0 ['conv5\_block1\_0\_conv[0][0]',

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

conv5\_block2\_preact\_bn (BatchN (None, 7, 7, 2048) 8192 ['conv5\_block1\_out[0][0]']

ormalization)

conv5\_block2\_preact\_relu (Acti (None, 7, 7, 2048) 0 ['conv5\_block2\_preact\_bn[0][0]']

vation)

conv5\_block2\_1\_conv (Conv2D) (None, 7, 7, 512) 1048576 ['conv5\_block2\_preact\_relu[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\_pad (ZeroPaddin (None, 9, 9, 512) 0 ['conv5\_block2\_1\_relu[0][0]']

g2D)

conv5\_block2\_2\_conv (Conv2D) (None, 7, 7, 512) 2359296 ['conv5\_block2\_2\_pad[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\_out (Add) (None, 7, 7, 2048) 0 ['conv5\_block1\_out[0][0]',

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

conv5\_block3\_preact\_bn (BatchN (None, 7, 7, 2048) 8192 ['conv5\_block2\_out[0][0]']

ormalization)

conv5\_block3\_preact\_relu (Acti (None, 7, 7, 2048) 0 ['conv5\_block3\_preact\_bn[0][0]']

vation)

conv5\_block3\_1\_conv (Conv2D) (None, 7, 7, 512) 1048576 ['conv5\_block3\_preact\_relu[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\_pad (ZeroPaddin (None, 9, 9, 512) 0 ['conv5\_block3\_1\_relu[0][0]']

g2D)

conv5\_block3\_2\_conv (Conv2D) (None, 7, 7, 512) 2359296 ['conv5\_block3\_2\_pad[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\_out (Add) (None, 7, 7, 2048) 0 ['conv5\_block2\_out[0][0]',

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

post\_bn (BatchNormalization) (None, 7, 7, 2048) 8192 ['conv5\_block3\_out[0][0]']

post\_relu (Activation) (None, 7, 7, 2048) 0 ['post\_bn[0][0]']

flatten\_6 (Flatten) (None, 100352) 0 ['post\_relu[0][0]']

dense\_6 (Dense) (None, 1) 100353 ['flatten\_6[0][0]']

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

Total params: 42,726,913

Trainable params: 100,353

Non-trainable params: 42,626,560

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Epoch 1/100

17/17 [==============================] - 20s 639ms/step - loss: 1.9548 - accuracy: 0.6648 - val\_loss: 0.9673 - val\_accuracy: 0.7687 - lr: 0.0010

Epoch 2/100

17/17 [==============================] - 8s 462ms/step - loss: 0.2638 - accuracy: 0.9330 - val\_loss: 0.9924 - val\_accuracy: 0.7761 - lr: 0.0010

Epoch 3/100

17/17 [==============================] - 8s 481ms/step - loss: 0.0261 - accuracy: 0.9907 - val\_loss: 0.8372 - val\_accuracy: 0.7910 - lr: 0.0010

Epoch 4/100

17/17 [==============================] - 9s 512ms/step - loss: 0.0034 - accuracy: 1.0000 - val\_loss: 0.8713 - val\_accuracy: 0.8134 - lr: 0.0010

Epoch 5/100

17/17 [==============================] - 8s 461ms/step - loss: 0.0022 - accuracy: 1.0000 - val\_loss: 0.8621 - val\_accuracy: 0.8060 - lr: 0.0010

Epoch 6/100

17/17 [==============================] - 8s 464ms/step - loss: 9.2171e-04 - accuracy: 1.0000 - val\_loss: 0.8549 - val\_accuracy: 0.8060 - lr: 0.0010

Epoch 7/100

17/17 [==============================] - 8s 465ms/step - loss: 5.0870e-04 - accuracy: 1.0000 - val\_loss: 0.8543 - val\_accuracy: 0.8060 - lr: 1.0000e-04

Epoch 8/100

17/17 [==============================] - 8s 482ms/step - loss: 4.8519e-04 - accuracy: 1.0000 - val\_loss: 0.8540 - val\_accuracy: 0.8060 - lr: 1.0000e-04

INFO:tensorflow:Assets written to: /content/drive/MyDrive/CTResNet101V2Split0.9noAug/assets

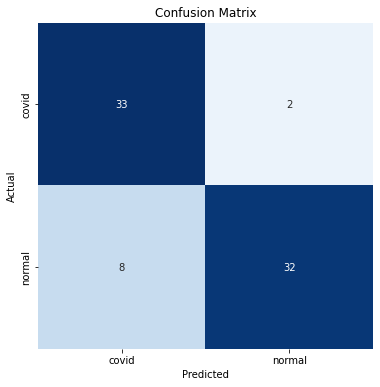
Test Loss: 0.86198

Test Accuracy: 86.67%

WARNING:tensorflow:5 out of the last 17 calls to <function Model.make\_predict\_function.<locals>.predict\_function at 0x7f025222cef0> 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 0.80 0.94 0.87 35

normal 0.94 0.80 0.86 40

accuracy 0.87 75

macro avg 0.87 0.87 0.87 75

weighted avg 0.88 0.87 0.87 75

