Layer (type) Output Shape Param # Connected to

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2d\_input (InputLayer) (None, 224, 224, 3) 0

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zero\_padding2d\_1 (ZeroPadding2D (None, 230, 230, 3) 0 2d\_input[0][0]

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conv1/conv (Conv2D) (None, 112, 112, 64) 9408 zero\_padding2d\_1[0][0]

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conv1/bn (BatchNormalization) (None, 112, 112, 64) 256 conv1/conv[0][0]

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conv1/relu (Activation) (None, 112, 112, 64) 0 conv1/bn[0][0]

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zero\_padding2d\_2 (ZeroPadding2D (None, 114, 114, 64) 0 conv1/relu[0][0]

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pool1 (MaxPooling2D) (None, 56, 56, 64) 0 zero\_padding2d\_2[0][0]

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conv2\_block1\_0\_bn (BatchNormali (None, 56, 56, 64) 256 pool1[0][0]

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conv2\_block1\_0\_relu (Activation (None, 56, 56, 64) 0 conv2\_block1\_0\_bn[0][0]

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conv2\_block1\_1\_conv (Conv2D) (None, 56, 56, 128) 8192 conv2\_block1\_0\_relu[0][0]

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conv2\_block1\_1\_bn (BatchNormali (None, 56, 56, 128) 512 conv2\_block1\_1\_conv[0][0]

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conv2\_block1\_1\_relu (Activation (None, 56, 56, 128) 0 conv2\_block1\_1\_bn[0][0]

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conv2\_block1\_2\_conv (Conv2D) (None, 56, 56, 32) 36864 conv2\_block1\_1\_relu[0][0]

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conv2\_block1\_concat (Concatenat (None, 56, 56, 96) 0 pool1[0][0]

conv2\_block1\_2\_conv[0][0]

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conv2\_block2\_0\_bn (BatchNormali (None, 56, 56, 96) 384 conv2\_block1\_concat[0][0]

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conv2\_block2\_0\_relu (Activation (None, 56, 56, 96) 0 conv2\_block2\_0\_bn[0][0]

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conv2\_block2\_1\_conv (Conv2D) (None, 56, 56, 128) 12288 conv2\_block2\_0\_relu[0][0]

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conv2\_block2\_1\_bn (BatchNormali (None, 56, 56, 128) 512 conv2\_block2\_1\_conv[0][0]

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conv2\_block2\_1\_relu (Activation (None, 56, 56, 128) 0 conv2\_block2\_1\_bn[0][0]

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conv2\_block2\_2\_conv (Conv2D) (None, 56, 56, 32) 36864 conv2\_block2\_1\_relu[0][0]

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conv2\_block2\_concat (Concatenat (None, 56, 56, 128) 0 conv2\_block1\_concat[0][0]

conv2\_block2\_2\_conv[0][0]

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conv2\_block3\_0\_bn (BatchNormali (None, 56, 56, 128) 512 conv2\_block2\_concat[0][0]

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conv2\_block3\_0\_relu (Activation (None, 56, 56, 128) 0 conv2\_block3\_0\_bn[0][0]

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conv2\_block3\_1\_conv (Conv2D) (None, 56, 56, 128) 16384 conv2\_block3\_0\_relu[0][0]

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conv2\_block3\_1\_bn (BatchNormali (None, 56, 56, 128) 512 conv2\_block3\_1\_conv[0][0]

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conv2\_block3\_1\_relu (Activation (None, 56, 56, 128) 0 conv2\_block3\_1\_bn[0][0]

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conv2\_block3\_2\_conv (Conv2D) (None, 56, 56, 32) 36864 conv2\_block3\_1\_relu[0][0]

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conv2\_block3\_concat (Concatenat (None, 56, 56, 160) 0 conv2\_block2\_concat[0][0]

conv2\_block3\_2\_conv[0][0]

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conv2\_block4\_0\_bn (BatchNormali (None, 56, 56, 160) 640 conv2\_block3\_concat[0][0]

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conv2\_block4\_0\_relu (Activation (None, 56, 56, 160) 0 conv2\_block4\_0\_bn[0][0]

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conv2\_block4\_1\_conv (Conv2D) (None, 56, 56, 128) 20480 conv2\_block4\_0\_relu[0][0]

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conv2\_block4\_1\_bn (BatchNormali (None, 56, 56, 128) 512 conv2\_block4\_1\_conv[0][0]

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conv2\_block4\_1\_relu (Activation (None, 56, 56, 128) 0 conv2\_block4\_1\_bn[0][0]

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conv2\_block4\_2\_conv (Conv2D) (None, 56, 56, 32) 36864 conv2\_block4\_1\_relu[0][0]

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conv2\_block4\_concat (Concatenat (None, 56, 56, 192) 0 conv2\_block3\_concat[0][0]

conv2\_block4\_2\_conv[0][0]

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conv2\_block5\_0\_bn (BatchNormali (None, 56, 56, 192) 768 conv2\_block4\_concat[0][0]

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conv2\_block5\_0\_relu (Activation (None, 56, 56, 192) 0 conv2\_block5\_0\_bn[0][0]

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conv2\_block5\_1\_conv (Conv2D) (None, 56, 56, 128) 24576 conv2\_block5\_0\_relu[0][0]

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conv2\_block5\_1\_bn (BatchNormali (None, 56, 56, 128) 512 conv2\_block5\_1\_conv[0][0]

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conv2\_block5\_1\_relu (Activation (None, 56, 56, 128) 0 conv2\_block5\_1\_bn[0][0]

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conv2\_block5\_2\_conv (Conv2D) (None, 56, 56, 32) 36864 conv2\_block5\_1\_relu[0][0]

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conv2\_block5\_concat (Concatenat (None, 56, 56, 224) 0 conv2\_block4\_concat[0][0]

conv2\_block5\_2\_conv[0][0]

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conv2\_block6\_0\_bn (BatchNormali (None, 56, 56, 224) 896 conv2\_block5\_concat[0][0]

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conv2\_block6\_0\_relu (Activation (None, 56, 56, 224) 0 conv2\_block6\_0\_bn[0][0]

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conv2\_block6\_1\_conv (Conv2D) (None, 56, 56, 128) 28672 conv2\_block6\_0\_relu[0][0]

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conv2\_block6\_1\_bn (BatchNormali (None, 56, 56, 128) 512 conv2\_block6\_1\_conv[0][0]

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conv2\_block6\_1\_relu (Activation (None, 56, 56, 128) 0 conv2\_block6\_1\_bn[0][0]

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conv2\_block6\_2\_conv (Conv2D) (None, 56, 56, 32) 36864 conv2\_block6\_1\_relu[0][0]

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conv2\_block6\_concat (Concatenat (None, 56, 56, 256) 0 conv2\_block5\_concat[0][0]

conv2\_block6\_2\_conv[0][0]

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pool2\_bn (BatchNormalization) (None, 56, 56, 256) 1024 conv2\_block6\_concat[0][0]

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pool2\_relu (Activation) (None, 56, 56, 256) 0 pool2\_bn[0][0]

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pool2\_conv (Conv2D) (None, 56, 56, 128) 32768 pool2\_relu[0][0]

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pool2\_pool (AveragePooling2D) (None, 28, 28, 128) 0 pool2\_conv[0][0]

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conv3\_block1\_0\_bn (BatchNormali (None, 28, 28, 128) 512 pool2\_pool[0][0]

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conv3\_block1\_0\_relu (Activation (None, 28, 28, 128) 0 conv3\_block1\_0\_bn[0][0]

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conv3\_block1\_1\_conv (Conv2D) (None, 28, 28, 128) 16384 conv3\_block1\_0\_relu[0][0]

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

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

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conv3\_block1\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block1\_1\_relu[0][0]

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conv3\_block1\_concat (Concatenat (None, 28, 28, 160) 0 pool2\_pool[0][0]

conv3\_block1\_2\_conv[0][0]

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conv3\_block2\_0\_bn (BatchNormali (None, 28, 28, 160) 640 conv3\_block1\_concat[0][0]

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conv3\_block2\_0\_relu (Activation (None, 28, 28, 160) 0 conv3\_block2\_0\_bn[0][0]

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conv3\_block2\_1\_conv (Conv2D) (None, 28, 28, 128) 20480 conv3\_block2\_0\_relu[0][0]

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

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

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conv3\_block2\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block2\_1\_relu[0][0]

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conv3\_block2\_concat (Concatenat (None, 28, 28, 192) 0 conv3\_block1\_concat[0][0]

conv3\_block2\_2\_conv[0][0]

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conv3\_block3\_0\_bn (BatchNormali (None, 28, 28, 192) 768 conv3\_block2\_concat[0][0]

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conv3\_block3\_0\_relu (Activation (None, 28, 28, 192) 0 conv3\_block3\_0\_bn[0][0]

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conv3\_block3\_1\_conv (Conv2D) (None, 28, 28, 128) 24576 conv3\_block3\_0\_relu[0][0]

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

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

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conv3\_block3\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block3\_1\_relu[0][0]

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conv3\_block3\_concat (Concatenat (None, 28, 28, 224) 0 conv3\_block2\_concat[0][0]

conv3\_block3\_2\_conv[0][0]

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conv3\_block4\_0\_bn (BatchNormali (None, 28, 28, 224) 896 conv3\_block3\_concat[0][0]

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conv3\_block4\_0\_relu (Activation (None, 28, 28, 224) 0 conv3\_block4\_0\_bn[0][0]

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conv3\_block4\_1\_conv (Conv2D) (None, 28, 28, 128) 28672 conv3\_block4\_0\_relu[0][0]

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

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

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conv3\_block4\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block4\_1\_relu[0][0]

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conv3\_block4\_concat (Concatenat (None, 28, 28, 256) 0 conv3\_block3\_concat[0][0]

conv3\_block4\_2\_conv[0][0]

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conv3\_block5\_0\_bn (BatchNormali (None, 28, 28, 256) 1024 conv3\_block4\_concat[0][0]

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conv3\_block5\_0\_relu (Activation (None, 28, 28, 256) 0 conv3\_block5\_0\_bn[0][0]

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conv3\_block5\_1\_conv (Conv2D) (None, 28, 28, 128) 32768 conv3\_block5\_0\_relu[0][0]

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

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

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conv3\_block5\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block5\_1\_relu[0][0]

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conv3\_block5\_concat (Concatenat (None, 28, 28, 288) 0 conv3\_block4\_concat[0][0]

conv3\_block5\_2\_conv[0][0]

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conv3\_block6\_0\_bn (BatchNormali (None, 28, 28, 288) 1152 conv3\_block5\_concat[0][0]

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conv3\_block6\_0\_relu (Activation (None, 28, 28, 288) 0 conv3\_block6\_0\_bn[0][0]

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conv3\_block6\_1\_conv (Conv2D) (None, 28, 28, 128) 36864 conv3\_block6\_0\_relu[0][0]

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

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

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conv3\_block6\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block6\_1\_relu[0][0]

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conv3\_block6\_concat (Concatenat (None, 28, 28, 320) 0 conv3\_block5\_concat[0][0]

conv3\_block6\_2\_conv[0][0]

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conv3\_block7\_0\_bn (BatchNormali (None, 28, 28, 320) 1280 conv3\_block6\_concat[0][0]

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conv3\_block7\_0\_relu (Activation (None, 28, 28, 320) 0 conv3\_block7\_0\_bn[0][0]

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conv3\_block7\_1\_conv (Conv2D) (None, 28, 28, 128) 40960 conv3\_block7\_0\_relu[0][0]

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

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

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conv3\_block7\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block7\_1\_relu[0][0]

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conv3\_block7\_concat (Concatenat (None, 28, 28, 352) 0 conv3\_block6\_concat[0][0]

conv3\_block7\_2\_conv[0][0]

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conv3\_block8\_0\_bn (BatchNormali (None, 28, 28, 352) 1408 conv3\_block7\_concat[0][0]

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conv3\_block8\_0\_relu (Activation (None, 28, 28, 352) 0 conv3\_block8\_0\_bn[0][0]

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conv3\_block8\_1\_conv (Conv2D) (None, 28, 28, 128) 45056 conv3\_block8\_0\_relu[0][0]

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

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

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conv3\_block8\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block8\_1\_relu[0][0]

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conv3\_block8\_concat (Concatenat (None, 28, 28, 384) 0 conv3\_block7\_concat[0][0]

conv3\_block8\_2\_conv[0][0]

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conv3\_block9\_0\_bn (BatchNormali (None, 28, 28, 384) 1536 conv3\_block8\_concat[0][0]

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conv3\_block9\_0\_relu (Activation (None, 28, 28, 384) 0 conv3\_block9\_0\_bn[0][0]

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conv3\_block9\_1\_conv (Conv2D) (None, 28, 28, 128) 49152 conv3\_block9\_0\_relu[0][0]

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conv3\_block9\_1\_bn (BatchNormali (None, 28, 28, 128) 512 conv3\_block9\_1\_conv[0][0]

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conv3\_block9\_1\_relu (Activation (None, 28, 28, 128) 0 conv3\_block9\_1\_bn[0][0]

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conv3\_block9\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block9\_1\_relu[0][0]

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conv3\_block9\_concat (Concatenat (None, 28, 28, 416) 0 conv3\_block8\_concat[0][0]

conv3\_block9\_2\_conv[0][0]

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conv3\_block10\_0\_bn (BatchNormal (None, 28, 28, 416) 1664 conv3\_block9\_concat[0][0]

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conv3\_block10\_0\_relu (Activatio (None, 28, 28, 416) 0 conv3\_block10\_0\_bn[0][0]

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conv3\_block10\_1\_conv (Conv2D) (None, 28, 28, 128) 53248 conv3\_block10\_0\_relu[0][0]

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conv3\_block10\_1\_bn (BatchNormal (None, 28, 28, 128) 512 conv3\_block10\_1\_conv[0][0]

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conv3\_block10\_1\_relu (Activatio (None, 28, 28, 128) 0 conv3\_block10\_1\_bn[0][0]

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conv3\_block10\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block10\_1\_relu[0][0]

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conv3\_block10\_concat (Concatena (None, 28, 28, 448) 0 conv3\_block9\_concat[0][0]

conv3\_block10\_2\_conv[0][0]

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conv3\_block11\_0\_bn (BatchNormal (None, 28, 28, 448) 1792 conv3\_block10\_concat[0][0]

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conv3\_block11\_0\_relu (Activatio (None, 28, 28, 448) 0 conv3\_block11\_0\_bn[0][0]

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conv3\_block11\_1\_conv (Conv2D) (None, 28, 28, 128) 57344 conv3\_block11\_0\_relu[0][0]

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conv3\_block11\_1\_bn (BatchNormal (None, 28, 28, 128) 512 conv3\_block11\_1\_conv[0][0]

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conv3\_block11\_1\_relu (Activatio (None, 28, 28, 128) 0 conv3\_block11\_1\_bn[0][0]

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conv3\_block11\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block11\_1\_relu[0][0]

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conv3\_block11\_concat (Concatena (None, 28, 28, 480) 0 conv3\_block10\_concat[0][0]

conv3\_block11\_2\_conv[0][0]

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conv3\_block12\_0\_bn (BatchNormal (None, 28, 28, 480) 1920 conv3\_block11\_concat[0][0]

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conv3\_block12\_0\_relu (Activatio (None, 28, 28, 480) 0 conv3\_block12\_0\_bn[0][0]

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conv3\_block12\_1\_conv (Conv2D) (None, 28, 28, 128) 61440 conv3\_block12\_0\_relu[0][0]

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conv3\_block12\_1\_bn (BatchNormal (None, 28, 28, 128) 512 conv3\_block12\_1\_conv[0][0]

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conv3\_block12\_1\_relu (Activatio (None, 28, 28, 128) 0 conv3\_block12\_1\_bn[0][0]

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conv3\_block12\_2\_conv (Conv2D) (None, 28, 28, 32) 36864 conv3\_block12\_1\_relu[0][0]

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conv3\_block12\_concat (Concatena (None, 28, 28, 512) 0 conv3\_block11\_concat[0][0]

conv3\_block12\_2\_conv[0][0]

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pool3\_bn (BatchNormalization) (None, 28, 28, 512) 2048 conv3\_block12\_concat[0][0]

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pool3\_relu (Activation) (None, 28, 28, 512) 0 pool3\_bn[0][0]

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pool3\_conv (Conv2D) (None, 28, 28, 256) 131072 pool3\_relu[0][0]

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pool3\_pool (AveragePooling2D) (None, 14, 14, 256) 0 pool3\_conv[0][0]

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conv4\_block1\_0\_bn (BatchNormali (None, 14, 14, 256) 1024 pool3\_pool[0][0]

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conv4\_block1\_0\_relu (Activation (None, 14, 14, 256) 0 conv4\_block1\_0\_bn[0][0]

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conv4\_block1\_1\_conv (Conv2D) (None, 14, 14, 128) 32768 conv4\_block1\_0\_relu[0][0]

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conv4\_block1\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block1\_1\_conv[0][0]

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conv4\_block1\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block1\_1\_bn[0][0]

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conv4\_block1\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block1\_1\_relu[0][0]

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3d\_input (InputLayer) (None, 20, 256, 256, 0

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conv4\_block1\_concat (Concatenat (None, 14, 14, 288) 0 pool3\_pool[0][0]

conv4\_block1\_2\_conv[0][0]

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conv3d\_1 (Conv3D) (None, 10, 128, 128, 21168 3d\_input[0][0]

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conv4\_block2\_0\_bn (BatchNormali (None, 14, 14, 288) 1152 conv4\_block1\_concat[0][0]

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batch\_normalization\_1 (BatchNor (None, 10, 128, 128, 192 conv3d\_1[0][0]

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conv4\_block2\_0\_relu (Activation (None, 14, 14, 288) 0 conv4\_block2\_0\_bn[0][0]

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activation\_1 (Activation) (None, 10, 128, 128, 0 batch\_normalization\_1[0][0]

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conv4\_block2\_1\_conv (Conv2D) (None, 14, 14, 128) 36864 conv4\_block2\_0\_relu[0][0]

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max\_pooling3d\_1 (MaxPooling3D) (None, 4, 63, 63, 48 0 activation\_1[0][0]

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conv4\_block2\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block2\_1\_conv[0][0]

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batch\_normalization\_2 (BatchNor (None, 4, 63, 63, 48 192 max\_pooling3d\_1[0][0]

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conv4\_block2\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block2\_1\_bn[0][0]

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activation\_2 (Activation) (None, 4, 63, 63, 48 0 batch\_normalization\_2[0][0]

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conv4\_block2\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block2\_1\_relu[0][0]

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conv3d\_2 (Conv3D) (None, 4, 63, 63, 14 7056 activation\_2[0][0]

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conv4\_block2\_concat (Concatenat (None, 14, 14, 320) 0 conv4\_block1\_concat[0][0]

conv4\_block2\_2\_conv[0][0]

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dropout\_1 (Dropout) (None, 4, 63, 63, 14 0 conv3d\_2[0][0]

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conv4\_block3\_0\_bn (BatchNormali (None, 14, 14, 320) 1280 conv4\_block2\_concat[0][0]

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batch\_normalization\_3 (BatchNor (None, 4, 63, 63, 14 576 dropout\_1[0][0]

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conv4\_block3\_0\_relu (Activation (None, 14, 14, 320) 0 conv4\_block3\_0\_bn[0][0]

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activation\_3 (Activation) (None, 4, 63, 63, 14 0 batch\_normalization\_3[0][0]

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conv4\_block3\_1\_conv (Conv2D) (None, 14, 14, 128) 40960 conv4\_block3\_0\_relu[0][0]

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conv3d\_3 (Conv3D) (None, 4, 63, 63, 36 140004 activation\_3[0][0]

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conv4\_block3\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block3\_1\_conv[0][0]

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dropout\_2 (Dropout) (None, 4, 63, 63, 36 0 conv3d\_3[0][0]

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conv4\_block3\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block3\_1\_bn[0][0]

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batch\_normalization\_4 (BatchNor (None, 4, 63, 63, 36 144 dropout\_2[0][0]

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conv4\_block3\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block3\_1\_relu[0][0]

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activation\_4 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_4[0][0]

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conv4\_block3\_concat (Concatenat (None, 14, 14, 352) 0 conv4\_block2\_concat[0][0]

conv4\_block3\_2\_conv[0][0]

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conv3d\_4 (Conv3D) (None, 4, 63, 63, 14 5328 activation\_4[0][0]

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conv4\_block4\_0\_bn (BatchNormali (None, 14, 14, 352) 1408 conv4\_block3\_concat[0][0]

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dropout\_3 (Dropout) (None, 4, 63, 63, 14 0 conv3d\_4[0][0]

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conv4\_block4\_0\_relu (Activation (None, 14, 14, 352) 0 conv4\_block4\_0\_bn[0][0]

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batch\_normalization\_5 (BatchNor (None, 4, 63, 63, 14 576 dropout\_3[0][0]

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conv4\_block4\_1\_conv (Conv2D) (None, 14, 14, 128) 45056 conv4\_block4\_0\_relu[0][0]

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activation\_5 (Activation) (None, 4, 63, 63, 14 0 batch\_normalization\_5[0][0]

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conv4\_block4\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block4\_1\_conv[0][0]

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conv3d\_5 (Conv3D) (None, 4, 63, 63, 36 140004 activation\_5[0][0]

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conv4\_block4\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block4\_1\_bn[0][0]

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dropout\_4 (Dropout) (None, 4, 63, 63, 36 0 conv3d\_5[0][0]

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conv4\_block4\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block4\_1\_relu[0][0]

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batch\_normalization\_6 (BatchNor (None, 4, 63, 63, 36 144 dropout\_4[0][0]

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conv4\_block4\_concat (Concatenat (None, 14, 14, 384) 0 conv4\_block3\_concat[0][0]

conv4\_block4\_2\_conv[0][0]

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activation\_6 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_6[0][0]

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conv4\_block5\_0\_bn (BatchNormali (None, 14, 14, 384) 1536 conv4\_block4\_concat[0][0]

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conv3d\_6 (Conv3D) (None, 4, 63, 63, 14 5328 activation\_6[0][0]

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conv4\_block5\_0\_relu (Activation (None, 14, 14, 384) 0 conv4\_block5\_0\_bn[0][0]

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dropout\_5 (Dropout) (None, 4, 63, 63, 14 0 conv3d\_6[0][0]

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conv4\_block5\_1\_conv (Conv2D) (None, 14, 14, 128) 49152 conv4\_block5\_0\_relu[0][0]

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batch\_normalization\_7 (BatchNor (None, 4, 63, 63, 14 576 dropout\_5[0][0]

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conv4\_block5\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block5\_1\_conv[0][0]

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activation\_7 (Activation) (None, 4, 63, 63, 14 0 batch\_normalization\_7[0][0]

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conv4\_block5\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block5\_1\_bn[0][0]

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conv3d\_7 (Conv3D) (None, 4, 63, 63, 36 140004 activation\_7[0][0]

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conv4\_block5\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block5\_1\_relu[0][0]

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dropout\_6 (Dropout) (None, 4, 63, 63, 36 0 conv3d\_7[0][0]

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conv4\_block5\_concat (Concatenat (None, 14, 14, 416) 0 conv4\_block4\_concat[0][0]

conv4\_block5\_2\_conv[0][0]

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batch\_normalization\_8 (BatchNor (None, 4, 63, 63, 36 144 dropout\_6[0][0]

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conv4\_block6\_0\_bn (BatchNormali (None, 14, 14, 416) 1664 conv4\_block5\_concat[0][0]

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activation\_8 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_8[0][0]

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conv4\_block6\_0\_relu (Activation (None, 14, 14, 416) 0 conv4\_block6\_0\_bn[0][0]

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conv3d\_8 (Conv3D) (None, 4, 63, 63, 14 5328 activation\_8[0][0]

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conv4\_block6\_1\_conv (Conv2D) (None, 14, 14, 128) 53248 conv4\_block6\_0\_relu[0][0]

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dropout\_7 (Dropout) (None, 4, 63, 63, 14 0 conv3d\_8[0][0]

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conv4\_block6\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block6\_1\_conv[0][0]

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batch\_normalization\_9 (BatchNor (None, 4, 63, 63, 14 576 dropout\_7[0][0]

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conv4\_block6\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block6\_1\_bn[0][0]

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activation\_9 (Activation) (None, 4, 63, 63, 14 0 batch\_normalization\_9[0][0]

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conv4\_block6\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block6\_1\_relu[0][0]

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conv3d\_9 (Conv3D) (None, 4, 63, 63, 36 140004 activation\_9[0][0]

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conv4\_block6\_concat (Concatenat (None, 14, 14, 448) 0 conv4\_block5\_concat[0][0]

conv4\_block6\_2\_conv[0][0]

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dropout\_8 (Dropout) (None, 4, 63, 63, 36 0 conv3d\_9[0][0]

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conv4\_block7\_0\_bn (BatchNormali (None, 14, 14, 448) 1792 conv4\_block6\_concat[0][0]

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batch\_normalization\_10 (BatchNo (None, 4, 63, 63, 36 144 dropout\_8[0][0]

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conv4\_block7\_0\_relu (Activation (None, 14, 14, 448) 0 conv4\_block7\_0\_bn[0][0]

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activation\_10 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_10[0][0]

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conv4\_block7\_1\_conv (Conv2D) (None, 14, 14, 128) 57344 conv4\_block7\_0\_relu[0][0]

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conv3d\_10 (Conv3D) (None, 4, 63, 63, 14 5328 activation\_10[0][0]

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conv4\_block7\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block7\_1\_conv[0][0]

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dropout\_9 (Dropout) (None, 4, 63, 63, 14 0 conv3d\_10[0][0]

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conv4\_block7\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block7\_1\_bn[0][0]

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batch\_normalization\_11 (BatchNo (None, 4, 63, 63, 14 576 dropout\_9[0][0]

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conv4\_block7\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block7\_1\_relu[0][0]

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activation\_11 (Activation) (None, 4, 63, 63, 14 0 batch\_normalization\_11[0][0]

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conv4\_block7\_concat (Concatenat (None, 14, 14, 480) 0 conv4\_block6\_concat[0][0]

conv4\_block7\_2\_conv[0][0]

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conv3d\_11 (Conv3D) (None, 4, 63, 63, 36 140004 activation\_11[0][0]

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conv4\_block8\_0\_bn (BatchNormali (None, 14, 14, 480) 1920 conv4\_block7\_concat[0][0]

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dropout\_10 (Dropout) (None, 4, 63, 63, 36 0 conv3d\_11[0][0]

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conv4\_block8\_0\_relu (Activation (None, 14, 14, 480) 0 conv4\_block8\_0\_bn[0][0]

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batch\_normalization\_12 (BatchNo (None, 4, 63, 63, 36 144 dropout\_10[0][0]

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conv4\_block8\_1\_conv (Conv2D) (None, 14, 14, 128) 61440 conv4\_block8\_0\_relu[0][0]

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activation\_12 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_12[0][0]

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conv4\_block8\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block8\_1\_conv[0][0]

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conv3d\_12 (Conv3D) (None, 4, 63, 63, 14 5328 activation\_12[0][0]

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conv4\_block8\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block8\_1\_bn[0][0]

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dropout\_11 (Dropout) (None, 4, 63, 63, 14 0 conv3d\_12[0][0]

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conv4\_block8\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block8\_1\_relu[0][0]

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batch\_normalization\_13 (BatchNo (None, 4, 63, 63, 14 576 dropout\_11[0][0]

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conv4\_block8\_concat (Concatenat (None, 14, 14, 512) 0 conv4\_block7\_concat[0][0]

conv4\_block8\_2\_conv[0][0]

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activation\_13 (Activation) (None, 4, 63, 63, 14 0 batch\_normalization\_13[0][0]

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conv4\_block9\_0\_bn (BatchNormali (None, 14, 14, 512) 2048 conv4\_block8\_concat[0][0]

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conv3d\_13 (Conv3D) (None, 4, 63, 63, 36 140004 activation\_13[0][0]

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conv4\_block9\_0\_relu (Activation (None, 14, 14, 512) 0 conv4\_block9\_0\_bn[0][0]

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dropout\_12 (Dropout) (None, 4, 63, 63, 36 0 conv3d\_13[0][0]

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conv4\_block9\_1\_conv (Conv2D) (None, 14, 14, 128) 65536 conv4\_block9\_0\_relu[0][0]

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batch\_normalization\_14 (BatchNo (None, 4, 63, 63, 36 144 dropout\_12[0][0]

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batch\_normalization\_15 (BatchNo (None, 4, 63, 63, 36 144 dropout\_12[0][0]

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batch\_normalization\_16 (BatchNo (None, 4, 63, 63, 36 144 dropout\_12[0][0]

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conv4\_block9\_1\_bn (BatchNormali (None, 14, 14, 128) 512 conv4\_block9\_1\_conv[0][0]

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activation\_14 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_14[0][0]

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activation\_15 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_15[0][0]

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activation\_16 (Activation) (None, 4, 63, 63, 36 0 batch\_normalization\_16[0][0]

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conv4\_block9\_1\_relu (Activation (None, 14, 14, 128) 0 conv4\_block9\_1\_bn[0][0]

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conv3d\_14 (Conv3D) (None, 4, 63, 63, 12 41472 activation\_14[0][0]

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conv3d\_15 (Conv3D) (None, 4, 63, 63, 12 124416 activation\_15[0][0]

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conv3d\_16 (Conv3D) (None, 4, 63, 63, 12 165888 activation\_16[0][0]

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conv4\_block9\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block9\_1\_relu[0][0]

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concatenate\_1 (Concatenate) (None, 12, 63, 63, 1 0 conv3d\_14[0][0]

conv3d\_15[0][0]

conv3d\_16[0][0]

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conv4\_block9\_concat (Concatenat (None, 14, 14, 544) 0 conv4\_block8\_concat[0][0]

conv4\_block9\_2\_conv[0][0]

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batch\_normalization\_17 (BatchNo (None, 12, 63, 63, 1 512 concatenate\_1[0][0]

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conv4\_block10\_0\_bn (BatchNormal (None, 14, 14, 544) 2176 conv4\_block9\_concat[0][0]

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activation\_17 (Activation) (None, 12, 63, 63, 1 0 batch\_normalization\_17[0][0]

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conv4\_block10\_0\_relu (Activatio (None, 14, 14, 544) 0 conv4\_block10\_0\_bn[0][0]

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conv3d\_17 (Conv3D) (None, 12, 63, 63, 2 33792 activation\_17[0][0]

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conv4\_block10\_1\_conv (Conv2D) (None, 14, 14, 128) 69632 conv4\_block10\_0\_relu[0][0]

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average\_pooling3d\_1 (AveragePoo (None, 6, 31, 31, 26 0 conv3d\_17[0][0]

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conv4\_block10\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block10\_1\_conv[0][0]

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batch\_normalization\_18 (BatchNo (None, 6, 31, 31, 26 1056 average\_pooling3d\_1[0][0]

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conv4\_block10\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block10\_1\_bn[0][0]

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activation\_18 (Activation) (None, 6, 31, 31, 26 0 batch\_normalization\_18[0][0]

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conv4\_block10\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block10\_1\_relu[0][0]

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conv3d\_18 (Conv3D) (None, 6, 31, 31, 14 38160 activation\_18[0][0]

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conv4\_block10\_concat (Concatena (None, 14, 14, 576) 0 conv4\_block9\_concat[0][0]

conv4\_block10\_2\_conv[0][0]

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dropout\_13 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_18[0][0]

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conv4\_block11\_0\_bn (BatchNormal (None, 14, 14, 576) 2304 conv4\_block10\_concat[0][0]

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batch\_normalization\_19 (BatchNo (None, 6, 31, 31, 14 576 dropout\_13[0][0]

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conv4\_block11\_0\_relu (Activatio (None, 14, 14, 576) 0 conv4\_block11\_0\_bn[0][0]

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activation\_19 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_19[0][0]

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conv4\_block11\_1\_conv (Conv2D) (None, 14, 14, 128) 73728 conv4\_block11\_0\_relu[0][0]

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conv3d\_19 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_19[0][0]

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conv4\_block11\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block11\_1\_conv[0][0]

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dropout\_14 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_19[0][0]

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conv4\_block11\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block11\_1\_bn[0][0]

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batch\_normalization\_20 (BatchNo (None, 6, 31, 31, 36 144 dropout\_14[0][0]

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conv4\_block11\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block11\_1\_relu[0][0]

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activation\_20 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_20[0][0]

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conv4\_block11\_concat (Concatena (None, 14, 14, 608) 0 conv4\_block10\_concat[0][0]

conv4\_block11\_2\_conv[0][0]

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conv3d\_20 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_20[0][0]

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conv4\_block12\_0\_bn (BatchNormal (None, 14, 14, 608) 2432 conv4\_block11\_concat[0][0]

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dropout\_15 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_20[0][0]

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conv4\_block12\_0\_relu (Activatio (None, 14, 14, 608) 0 conv4\_block12\_0\_bn[0][0]

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batch\_normalization\_21 (BatchNo (None, 6, 31, 31, 14 576 dropout\_15[0][0]

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conv4\_block12\_1\_conv (Conv2D) (None, 14, 14, 128) 77824 conv4\_block12\_0\_relu[0][0]

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activation\_21 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_21[0][0]

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conv4\_block12\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block12\_1\_conv[0][0]

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conv3d\_21 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_21[0][0]

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conv4\_block12\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block12\_1\_bn[0][0]

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dropout\_16 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_21[0][0]

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conv4\_block12\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block12\_1\_relu[0][0]

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batch\_normalization\_22 (BatchNo (None, 6, 31, 31, 36 144 dropout\_16[0][0]

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conv4\_block12\_concat (Concatena (None, 14, 14, 640) 0 conv4\_block11\_concat[0][0]

conv4\_block12\_2\_conv[0][0]

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activation\_22 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_22[0][0]

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conv4\_block13\_0\_bn (BatchNormal (None, 14, 14, 640) 2560 conv4\_block12\_concat[0][0]

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conv3d\_22 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_22[0][0]

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conv4\_block13\_0\_relu (Activatio (None, 14, 14, 640) 0 conv4\_block13\_0\_bn[0][0]

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dropout\_17 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_22[0][0]

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conv4\_block13\_1\_conv (Conv2D) (None, 14, 14, 128) 81920 conv4\_block13\_0\_relu[0][0]

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batch\_normalization\_23 (BatchNo (None, 6, 31, 31, 14 576 dropout\_17[0][0]

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conv4\_block13\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block13\_1\_conv[0][0]

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activation\_23 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_23[0][0]

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conv4\_block13\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block13\_1\_bn[0][0]

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conv3d\_23 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_23[0][0]

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conv4\_block13\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block13\_1\_relu[0][0]

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dropout\_18 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_23[0][0]

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conv4\_block13\_concat (Concatena (None, 14, 14, 672) 0 conv4\_block12\_concat[0][0]

conv4\_block13\_2\_conv[0][0]

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batch\_normalization\_24 (BatchNo (None, 6, 31, 31, 36 144 dropout\_18[0][0]

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conv4\_block14\_0\_bn (BatchNormal (None, 14, 14, 672) 2688 conv4\_block13\_concat[0][0]

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activation\_24 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_24[0][0]

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conv4\_block14\_0\_relu (Activatio (None, 14, 14, 672) 0 conv4\_block14\_0\_bn[0][0]

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conv3d\_24 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_24[0][0]

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conv4\_block14\_1\_conv (Conv2D) (None, 14, 14, 128) 86016 conv4\_block14\_0\_relu[0][0]

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dropout\_19 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_24[0][0]

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conv4\_block14\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block14\_1\_conv[0][0]

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batch\_normalization\_25 (BatchNo (None, 6, 31, 31, 14 576 dropout\_19[0][0]

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conv4\_block14\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block14\_1\_bn[0][0]

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activation\_25 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_25[0][0]

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conv4\_block14\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block14\_1\_relu[0][0]

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conv3d\_25 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_25[0][0]

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conv4\_block14\_concat (Concatena (None, 14, 14, 704) 0 conv4\_block13\_concat[0][0]

conv4\_block14\_2\_conv[0][0]

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dropout\_20 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_25[0][0]

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conv4\_block15\_0\_bn (BatchNormal (None, 14, 14, 704) 2816 conv4\_block14\_concat[0][0]

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batch\_normalization\_26 (BatchNo (None, 6, 31, 31, 36 144 dropout\_20[0][0]

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conv4\_block15\_0\_relu (Activatio (None, 14, 14, 704) 0 conv4\_block15\_0\_bn[0][0]

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activation\_26 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_26[0][0]

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conv4\_block15\_1\_conv (Conv2D) (None, 14, 14, 128) 90112 conv4\_block15\_0\_relu[0][0]

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conv3d\_26 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_26[0][0]

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conv4\_block15\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block15\_1\_conv[0][0]

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dropout\_21 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_26[0][0]

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conv4\_block15\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block15\_1\_bn[0][0]

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batch\_normalization\_27 (BatchNo (None, 6, 31, 31, 14 576 dropout\_21[0][0]

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conv4\_block15\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block15\_1\_relu[0][0]

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activation\_27 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_27[0][0]

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conv4\_block15\_concat (Concatena (None, 14, 14, 736) 0 conv4\_block14\_concat[0][0]

conv4\_block15\_2\_conv[0][0]

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conv3d\_27 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_27[0][0]

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conv4\_block16\_0\_bn (BatchNormal (None, 14, 14, 736) 2944 conv4\_block15\_concat[0][0]

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dropout\_22 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_27[0][0]

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conv4\_block16\_0\_relu (Activatio (None, 14, 14, 736) 0 conv4\_block16\_0\_bn[0][0]

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batch\_normalization\_28 (BatchNo (None, 6, 31, 31, 36 144 dropout\_22[0][0]

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conv4\_block16\_1\_conv (Conv2D) (None, 14, 14, 128) 94208 conv4\_block16\_0\_relu[0][0]

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activation\_28 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_28[0][0]

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conv4\_block16\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block16\_1\_conv[0][0]

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conv3d\_28 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_28[0][0]

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conv4\_block16\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block16\_1\_bn[0][0]

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dropout\_23 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_28[0][0]

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conv4\_block16\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block16\_1\_relu[0][0]

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batch\_normalization\_29 (BatchNo (None, 6, 31, 31, 14 576 dropout\_23[0][0]

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conv4\_block16\_concat (Concatena (None, 14, 14, 768) 0 conv4\_block15\_concat[0][0]

conv4\_block16\_2\_conv[0][0]

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activation\_29 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_29[0][0]

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conv4\_block17\_0\_bn (BatchNormal (None, 14, 14, 768) 3072 conv4\_block16\_concat[0][0]

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conv3d\_29 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_29[0][0]

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conv4\_block17\_0\_relu (Activatio (None, 14, 14, 768) 0 conv4\_block17\_0\_bn[0][0]

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dropout\_24 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_29[0][0]

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conv4\_block17\_1\_conv (Conv2D) (None, 14, 14, 128) 98304 conv4\_block17\_0\_relu[0][0]

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batch\_normalization\_30 (BatchNo (None, 6, 31, 31, 36 144 dropout\_24[0][0]

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conv4\_block17\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block17\_1\_conv[0][0]

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activation\_30 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_30[0][0]

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conv4\_block17\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block17\_1\_bn[0][0]

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conv3d\_30 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_30[0][0]

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conv4\_block17\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block17\_1\_relu[0][0]

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dropout\_25 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_30[0][0]

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conv4\_block17\_concat (Concatena (None, 14, 14, 800) 0 conv4\_block16\_concat[0][0]

conv4\_block17\_2\_conv[0][0]

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batch\_normalization\_31 (BatchNo (None, 6, 31, 31, 14 576 dropout\_25[0][0]

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conv4\_block18\_0\_bn (BatchNormal (None, 14, 14, 800) 3200 conv4\_block17\_concat[0][0]

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activation\_31 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_31[0][0]

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conv4\_block18\_0\_relu (Activatio (None, 14, 14, 800) 0 conv4\_block18\_0\_bn[0][0]

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conv3d\_31 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_31[0][0]

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conv4\_block18\_1\_conv (Conv2D) (None, 14, 14, 128) 102400 conv4\_block18\_0\_relu[0][0]

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dropout\_26 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_31[0][0]

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conv4\_block18\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block18\_1\_conv[0][0]

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batch\_normalization\_32 (BatchNo (None, 6, 31, 31, 36 144 dropout\_26[0][0]

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conv4\_block18\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block18\_1\_bn[0][0]

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activation\_32 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_32[0][0]

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conv4\_block18\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block18\_1\_relu[0][0]

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conv3d\_32 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_32[0][0]

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conv4\_block18\_concat (Concatena (None, 14, 14, 832) 0 conv4\_block17\_concat[0][0]

conv4\_block18\_2\_conv[0][0]

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dropout\_27 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_32[0][0]

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conv4\_block19\_0\_bn (BatchNormal (None, 14, 14, 832) 3328 conv4\_block18\_concat[0][0]

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batch\_normalization\_33 (BatchNo (None, 6, 31, 31, 14 576 dropout\_27[0][0]

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conv4\_block19\_0\_relu (Activatio (None, 14, 14, 832) 0 conv4\_block19\_0\_bn[0][0]

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activation\_33 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_33[0][0]

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conv4\_block19\_1\_conv (Conv2D) (None, 14, 14, 128) 106496 conv4\_block19\_0\_relu[0][0]

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conv3d\_33 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_33[0][0]

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conv4\_block19\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block19\_1\_conv[0][0]

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dropout\_28 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_33[0][0]

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conv4\_block19\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block19\_1\_bn[0][0]

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batch\_normalization\_34 (BatchNo (None, 6, 31, 31, 36 144 dropout\_28[0][0]

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conv4\_block19\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block19\_1\_relu[0][0]

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activation\_34 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_34[0][0]

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conv4\_block19\_concat (Concatena (None, 14, 14, 864) 0 conv4\_block18\_concat[0][0]

conv4\_block19\_2\_conv[0][0]

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conv3d\_34 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_34[0][0]

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conv4\_block20\_0\_bn (BatchNormal (None, 14, 14, 864) 3456 conv4\_block19\_concat[0][0]

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dropout\_29 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_34[0][0]

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conv4\_block20\_0\_relu (Activatio (None, 14, 14, 864) 0 conv4\_block20\_0\_bn[0][0]

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batch\_normalization\_35 (BatchNo (None, 6, 31, 31, 14 576 dropout\_29[0][0]

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conv4\_block20\_1\_conv (Conv2D) (None, 14, 14, 128) 110592 conv4\_block20\_0\_relu[0][0]

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activation\_35 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_35[0][0]

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conv4\_block20\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block20\_1\_conv[0][0]

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conv3d\_35 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_35[0][0]

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conv4\_block20\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block20\_1\_bn[0][0]

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dropout\_30 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_35[0][0]

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conv4\_block20\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block20\_1\_relu[0][0]

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batch\_normalization\_36 (BatchNo (None, 6, 31, 31, 36 144 dropout\_30[0][0]

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conv4\_block20\_concat (Concatena (None, 14, 14, 896) 0 conv4\_block19\_concat[0][0]

conv4\_block20\_2\_conv[0][0]

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activation\_36 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_36[0][0]

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conv4\_block21\_0\_bn (BatchNormal (None, 14, 14, 896) 3584 conv4\_block20\_concat[0][0]

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conv3d\_36 (Conv3D) (None, 6, 31, 31, 14 5328 activation\_36[0][0]

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conv4\_block21\_0\_relu (Activatio (None, 14, 14, 896) 0 conv4\_block21\_0\_bn[0][0]

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dropout\_31 (Dropout) (None, 6, 31, 31, 14 0 conv3d\_36[0][0]

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conv4\_block21\_1\_conv (Conv2D) (None, 14, 14, 128) 114688 conv4\_block21\_0\_relu[0][0]

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batch\_normalization\_37 (BatchNo (None, 6, 31, 31, 14 576 dropout\_31[0][0]

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conv4\_block21\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block21\_1\_conv[0][0]

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activation\_37 (Activation) (None, 6, 31, 31, 14 0 batch\_normalization\_37[0][0]

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conv4\_block21\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block21\_1\_bn[0][0]

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conv3d\_37 (Conv3D) (None, 6, 31, 31, 36 140004 activation\_37[0][0]

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conv4\_block21\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block21\_1\_relu[0][0]

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dropout\_32 (Dropout) (None, 6, 31, 31, 36 0 conv3d\_37[0][0]

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conv4\_block21\_concat (Concatena (None, 14, 14, 928) 0 conv4\_block20\_concat[0][0]

conv4\_block21\_2\_conv[0][0]

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batch\_normalization\_38 (BatchNo (None, 6, 31, 31, 36 144 dropout\_32[0][0]

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batch\_normalization\_39 (BatchNo (None, 6, 31, 31, 36 144 dropout\_32[0][0]

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batch\_normalization\_40 (BatchNo (None, 6, 31, 31, 36 144 dropout\_32[0][0]

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conv4\_block22\_0\_bn (BatchNormal (None, 14, 14, 928) 3712 conv4\_block21\_concat[0][0]

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activation\_38 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_38[0][0]

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activation\_39 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_39[0][0]

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activation\_40 (Activation) (None, 6, 31, 31, 36 0 batch\_normalization\_40[0][0]

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conv4\_block22\_0\_relu (Activatio (None, 14, 14, 928) 0 conv4\_block22\_0\_bn[0][0]

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conv3d\_38 (Conv3D) (None, 6, 31, 31, 12 41472 activation\_38[0][0]

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conv3d\_39 (Conv3D) (None, 6, 31, 31, 12 124416 activation\_39[0][0]

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conv3d\_40 (Conv3D) (None, 6, 31, 31, 12 165888 activation\_40[0][0]

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conv4\_block22\_1\_conv (Conv2D) (None, 14, 14, 128) 118784 conv4\_block22\_0\_relu[0][0]

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concatenate\_2 (Concatenate) (None, 18, 31, 31, 1 0 conv3d\_38[0][0]

conv3d\_39[0][0]

conv3d\_40[0][0]

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conv4\_block22\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block22\_1\_conv[0][0]

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batch\_normalization\_41 (BatchNo (None, 18, 31, 31, 1 512 concatenate\_2[0][0]

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conv4\_block22\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block22\_1\_bn[0][0]

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activation\_41 (Activation) (None, 18, 31, 31, 1 0 batch\_normalization\_41[0][0]

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conv4\_block22\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block22\_1\_relu[0][0]

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conv3d\_41 (Conv3D) (None, 18, 31, 31, 6 79872 activation\_41[0][0]

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conv4\_block22\_concat (Concatena (None, 14, 14, 960) 0 conv4\_block21\_concat[0][0]

conv4\_block22\_2\_conv[0][0]

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average\_pooling3d\_2 (AveragePoo (None, 9, 15, 15, 62 0 conv3d\_41[0][0]

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conv4\_block23\_0\_bn (BatchNormal (None, 14, 14, 960) 3840 conv4\_block22\_concat[0][0]

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batch\_normalization\_42 (BatchNo (None, 9, 15, 15, 62 2496 average\_pooling3d\_2[0][0]

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conv4\_block23\_0\_relu (Activatio (None, 14, 14, 960) 0 conv4\_block23\_0\_bn[0][0]

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activation\_42 (Activation) (None, 9, 15, 15, 62 0 batch\_normalization\_42[0][0]

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conv4\_block23\_1\_conv (Conv2D) (None, 14, 14, 128) 122880 conv4\_block23\_0\_relu[0][0]

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conv3d\_42 (Conv3D) (None, 9, 15, 15, 14 90000 activation\_42[0][0]

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conv4\_block23\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block23\_1\_conv[0][0]

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dropout\_33 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_42[0][0]

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conv4\_block23\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block23\_1\_bn[0][0]

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batch\_normalization\_43 (BatchNo (None, 9, 15, 15, 14 576 dropout\_33[0][0]

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conv4\_block23\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block23\_1\_relu[0][0]

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activation\_43 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_43[0][0]

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conv4\_block23\_concat (Concatena (None, 14, 14, 992) 0 conv4\_block22\_concat[0][0]

conv4\_block23\_2\_conv[0][0]

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conv3d\_43 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_43[0][0]

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conv4\_block24\_0\_bn (BatchNormal (None, 14, 14, 992) 3968 conv4\_block23\_concat[0][0]

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dropout\_34 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_43[0][0]

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conv4\_block24\_0\_relu (Activatio (None, 14, 14, 992) 0 conv4\_block24\_0\_bn[0][0]

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batch\_normalization\_44 (BatchNo (None, 9, 15, 15, 36 144 dropout\_34[0][0]

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conv4\_block24\_1\_conv (Conv2D) (None, 14, 14, 128) 126976 conv4\_block24\_0\_relu[0][0]

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activation\_44 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_44[0][0]

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conv4\_block24\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block24\_1\_conv[0][0]

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conv3d\_44 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_44[0][0]

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conv4\_block24\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block24\_1\_bn[0][0]

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dropout\_35 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_44[0][0]

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conv4\_block24\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block24\_1\_relu[0][0]

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batch\_normalization\_45 (BatchNo (None, 9, 15, 15, 14 576 dropout\_35[0][0]

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conv4\_block24\_concat (Concatena (None, 14, 14, 1024) 0 conv4\_block23\_concat[0][0]

conv4\_block24\_2\_conv[0][0]

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activation\_45 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_45[0][0]

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conv4\_block25\_0\_bn (BatchNormal (None, 14, 14, 1024) 4096 conv4\_block24\_concat[0][0]

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conv3d\_45 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_45[0][0]

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conv4\_block25\_0\_relu (Activatio (None, 14, 14, 1024) 0 conv4\_block25\_0\_bn[0][0]

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dropout\_36 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_45[0][0]

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conv4\_block25\_1\_conv (Conv2D) (None, 14, 14, 128) 131072 conv4\_block25\_0\_relu[0][0]

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batch\_normalization\_46 (BatchNo (None, 9, 15, 15, 36 144 dropout\_36[0][0]

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conv4\_block25\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block25\_1\_conv[0][0]

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activation\_46 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_46[0][0]

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conv4\_block25\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block25\_1\_bn[0][0]

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conv3d\_46 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_46[0][0]

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conv4\_block25\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block25\_1\_relu[0][0]

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dropout\_37 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_46[0][0]

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conv4\_block25\_concat (Concatena (None, 14, 14, 1056) 0 conv4\_block24\_concat[0][0]

conv4\_block25\_2\_conv[0][0]

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batch\_normalization\_47 (BatchNo (None, 9, 15, 15, 14 576 dropout\_37[0][0]

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conv4\_block26\_0\_bn (BatchNormal (None, 14, 14, 1056) 4224 conv4\_block25\_concat[0][0]

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activation\_47 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_47[0][0]

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conv4\_block26\_0\_relu (Activatio (None, 14, 14, 1056) 0 conv4\_block26\_0\_bn[0][0]

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conv3d\_47 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_47[0][0]

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conv4\_block26\_1\_conv (Conv2D) (None, 14, 14, 128) 135168 conv4\_block26\_0\_relu[0][0]

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dropout\_38 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_47[0][0]

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conv4\_block26\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block26\_1\_conv[0][0]

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batch\_normalization\_48 (BatchNo (None, 9, 15, 15, 36 144 dropout\_38[0][0]

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conv4\_block26\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block26\_1\_bn[0][0]

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activation\_48 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_48[0][0]

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conv4\_block26\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block26\_1\_relu[0][0]

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conv3d\_48 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_48[0][0]

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conv4\_block26\_concat (Concatena (None, 14, 14, 1088) 0 conv4\_block25\_concat[0][0]

conv4\_block26\_2\_conv[0][0]

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dropout\_39 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_48[0][0]

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conv4\_block27\_0\_bn (BatchNormal (None, 14, 14, 1088) 4352 conv4\_block26\_concat[0][0]

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batch\_normalization\_49 (BatchNo (None, 9, 15, 15, 14 576 dropout\_39[0][0]

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conv4\_block27\_0\_relu (Activatio (None, 14, 14, 1088) 0 conv4\_block27\_0\_bn[0][0]

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activation\_49 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_49[0][0]

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conv4\_block27\_1\_conv (Conv2D) (None, 14, 14, 128) 139264 conv4\_block27\_0\_relu[0][0]

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conv3d\_49 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_49[0][0]

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conv4\_block27\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block27\_1\_conv[0][0]

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dropout\_40 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_49[0][0]

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conv4\_block27\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block27\_1\_bn[0][0]

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batch\_normalization\_50 (BatchNo (None, 9, 15, 15, 36 144 dropout\_40[0][0]

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conv4\_block27\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block27\_1\_relu[0][0]

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activation\_50 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_50[0][0]

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conv4\_block27\_concat (Concatena (None, 14, 14, 1120) 0 conv4\_block26\_concat[0][0]

conv4\_block27\_2\_conv[0][0]

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conv3d\_50 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_50[0][0]

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conv4\_block28\_0\_bn (BatchNormal (None, 14, 14, 1120) 4480 conv4\_block27\_concat[0][0]

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dropout\_41 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_50[0][0]

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conv4\_block28\_0\_relu (Activatio (None, 14, 14, 1120) 0 conv4\_block28\_0\_bn[0][0]

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batch\_normalization\_51 (BatchNo (None, 9, 15, 15, 14 576 dropout\_41[0][0]

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conv4\_block28\_1\_conv (Conv2D) (None, 14, 14, 128) 143360 conv4\_block28\_0\_relu[0][0]

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activation\_51 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_51[0][0]

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conv4\_block28\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block28\_1\_conv[0][0]

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conv3d\_51 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_51[0][0]

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conv4\_block28\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block28\_1\_bn[0][0]

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dropout\_42 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_51[0][0]

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conv4\_block28\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block28\_1\_relu[0][0]

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batch\_normalization\_52 (BatchNo (None, 9, 15, 15, 36 144 dropout\_42[0][0]

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conv4\_block28\_concat (Concatena (None, 14, 14, 1152) 0 conv4\_block27\_concat[0][0]

conv4\_block28\_2\_conv[0][0]

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activation\_52 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_52[0][0]

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conv4\_block29\_0\_bn (BatchNormal (None, 14, 14, 1152) 4608 conv4\_block28\_concat[0][0]

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conv3d\_52 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_52[0][0]

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conv4\_block29\_0\_relu (Activatio (None, 14, 14, 1152) 0 conv4\_block29\_0\_bn[0][0]

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dropout\_43 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_52[0][0]

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conv4\_block29\_1\_conv (Conv2D) (None, 14, 14, 128) 147456 conv4\_block29\_0\_relu[0][0]

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batch\_normalization\_53 (BatchNo (None, 9, 15, 15, 14 576 dropout\_43[0][0]

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conv4\_block29\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block29\_1\_conv[0][0]

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activation\_53 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_53[0][0]

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conv4\_block29\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block29\_1\_bn[0][0]

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conv3d\_53 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_53[0][0]

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conv4\_block29\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block29\_1\_relu[0][0]

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dropout\_44 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_53[0][0]

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conv4\_block29\_concat (Concatena (None, 14, 14, 1184) 0 conv4\_block28\_concat[0][0]

conv4\_block29\_2\_conv[0][0]

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batch\_normalization\_54 (BatchNo (None, 9, 15, 15, 36 144 dropout\_44[0][0]

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conv4\_block30\_0\_bn (BatchNormal (None, 14, 14, 1184) 4736 conv4\_block29\_concat[0][0]

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activation\_54 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_54[0][0]

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conv4\_block30\_0\_relu (Activatio (None, 14, 14, 1184) 0 conv4\_block30\_0\_bn[0][0]

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conv3d\_54 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_54[0][0]

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conv4\_block30\_1\_conv (Conv2D) (None, 14, 14, 128) 151552 conv4\_block30\_0\_relu[0][0]

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dropout\_45 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_54[0][0]

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conv4\_block30\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block30\_1\_conv[0][0]

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batch\_normalization\_55 (BatchNo (None, 9, 15, 15, 14 576 dropout\_45[0][0]

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conv4\_block30\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block30\_1\_bn[0][0]

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activation\_55 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_55[0][0]

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conv4\_block30\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block30\_1\_relu[0][0]

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conv3d\_55 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_55[0][0]

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conv4\_block30\_concat (Concatena (None, 14, 14, 1216) 0 conv4\_block29\_concat[0][0]

conv4\_block30\_2\_conv[0][0]

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dropout\_46 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_55[0][0]

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conv4\_block31\_0\_bn (BatchNormal (None, 14, 14, 1216) 4864 conv4\_block30\_concat[0][0]

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batch\_normalization\_56 (BatchNo (None, 9, 15, 15, 36 144 dropout\_46[0][0]

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conv4\_block31\_0\_relu (Activatio (None, 14, 14, 1216) 0 conv4\_block31\_0\_bn[0][0]

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activation\_56 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_56[0][0]

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conv4\_block31\_1\_conv (Conv2D) (None, 14, 14, 128) 155648 conv4\_block31\_0\_relu[0][0]

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conv3d\_56 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_56[0][0]

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conv4\_block31\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block31\_1\_conv[0][0]

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dropout\_47 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_56[0][0]

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conv4\_block31\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block31\_1\_bn[0][0]

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batch\_normalization\_57 (BatchNo (None, 9, 15, 15, 14 576 dropout\_47[0][0]

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conv4\_block31\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block31\_1\_relu[0][0]

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activation\_57 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_57[0][0]

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conv4\_block31\_concat (Concatena (None, 14, 14, 1248) 0 conv4\_block30\_concat[0][0]

conv4\_block31\_2\_conv[0][0]

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conv3d\_57 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_57[0][0]

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conv4\_block32\_0\_bn (BatchNormal (None, 14, 14, 1248) 4992 conv4\_block31\_concat[0][0]

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dropout\_48 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_57[0][0]

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conv4\_block32\_0\_relu (Activatio (None, 14, 14, 1248) 0 conv4\_block32\_0\_bn[0][0]

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batch\_normalization\_58 (BatchNo (None, 9, 15, 15, 36 144 dropout\_48[0][0]

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conv4\_block32\_1\_conv (Conv2D) (None, 14, 14, 128) 159744 conv4\_block32\_0\_relu[0][0]

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activation\_58 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_58[0][0]

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conv4\_block32\_1\_bn (BatchNormal (None, 14, 14, 128) 512 conv4\_block32\_1\_conv[0][0]

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conv3d\_58 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_58[0][0]

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conv4\_block32\_1\_relu (Activatio (None, 14, 14, 128) 0 conv4\_block32\_1\_bn[0][0]

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dropout\_49 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_58[0][0]

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conv4\_block32\_2\_conv (Conv2D) (None, 14, 14, 32) 36864 conv4\_block32\_1\_relu[0][0]

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batch\_normalization\_59 (BatchNo (None, 9, 15, 15, 14 576 dropout\_49[0][0]

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conv4\_block32\_concat (Concatena (None, 14, 14, 1280) 0 conv4\_block31\_concat[0][0]

conv4\_block32\_2\_conv[0][0]

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activation\_59 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_59[0][0]

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pool4\_bn (BatchNormalization) (None, 14, 14, 1280) 5120 conv4\_block32\_concat[0][0]

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conv3d\_59 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_59[0][0]

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pool4\_relu (Activation) (None, 14, 14, 1280) 0 pool4\_bn[0][0]

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dropout\_50 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_59[0][0]

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pool4\_conv (Conv2D) (None, 14, 14, 640) 819200 pool4\_relu[0][0]

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batch\_normalization\_60 (BatchNo (None, 9, 15, 15, 36 144 dropout\_50[0][0]

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pool4\_pool (AveragePooling2D) (None, 7, 7, 640) 0 pool4\_conv[0][0]

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activation\_60 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_60[0][0]

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conv5\_block1\_0\_bn (BatchNormali (None, 7, 7, 640) 2560 pool4\_pool[0][0]

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conv3d\_60 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_60[0][0]

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conv5\_block1\_0\_relu (Activation (None, 7, 7, 640) 0 conv5\_block1\_0\_bn[0][0]

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dropout\_51 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_60[0][0]

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conv5\_block1\_1\_conv (Conv2D) (None, 7, 7, 128) 81920 conv5\_block1\_0\_relu[0][0]

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batch\_normalization\_61 (BatchNo (None, 9, 15, 15, 14 576 dropout\_51[0][0]

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conv5\_block1\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block1\_1\_conv[0][0]

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activation\_61 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_61[0][0]

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conv5\_block1\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block1\_1\_bn[0][0]

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conv3d\_61 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_61[0][0]

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conv5\_block1\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block1\_1\_relu[0][0]

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dropout\_52 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_61[0][0]

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conv5\_block1\_concat (Concatenat (None, 7, 7, 672) 0 pool4\_pool[0][0]

conv5\_block1\_2\_conv[0][0]

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batch\_normalization\_62 (BatchNo (None, 9, 15, 15, 36 144 dropout\_52[0][0]

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conv5\_block2\_0\_bn (BatchNormali (None, 7, 7, 672) 2688 conv5\_block1\_concat[0][0]

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activation\_62 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_62[0][0]

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conv5\_block2\_0\_relu (Activation (None, 7, 7, 672) 0 conv5\_block2\_0\_bn[0][0]

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conv3d\_62 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_62[0][0]

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conv5\_block2\_1\_conv (Conv2D) (None, 7, 7, 128) 86016 conv5\_block2\_0\_relu[0][0]

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dropout\_53 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_62[0][0]

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conv5\_block2\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block2\_1\_conv[0][0]

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batch\_normalization\_63 (BatchNo (None, 9, 15, 15, 14 576 dropout\_53[0][0]

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conv5\_block2\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block2\_1\_bn[0][0]

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activation\_63 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_63[0][0]

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conv5\_block2\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block2\_1\_relu[0][0]

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conv3d\_63 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_63[0][0]

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conv5\_block2\_concat (Concatenat (None, 7, 7, 704) 0 conv5\_block1\_concat[0][0]

conv5\_block2\_2\_conv[0][0]

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dropout\_54 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_63[0][0]

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conv5\_block3\_0\_bn (BatchNormali (None, 7, 7, 704) 2816 conv5\_block2\_concat[0][0]

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batch\_normalization\_64 (BatchNo (None, 9, 15, 15, 36 144 dropout\_54[0][0]

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conv5\_block3\_0\_relu (Activation (None, 7, 7, 704) 0 conv5\_block3\_0\_bn[0][0]

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activation\_64 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_64[0][0]

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conv5\_block3\_1\_conv (Conv2D) (None, 7, 7, 128) 90112 conv5\_block3\_0\_relu[0][0]

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conv3d\_64 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_64[0][0]

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conv5\_block3\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block3\_1\_conv[0][0]

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dropout\_55 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_64[0][0]

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conv5\_block3\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block3\_1\_bn[0][0]

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batch\_normalization\_65 (BatchNo (None, 9, 15, 15, 14 576 dropout\_55[0][0]

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conv5\_block3\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block3\_1\_relu[0][0]

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activation\_65 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_65[0][0]

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conv5\_block3\_concat (Concatenat (None, 7, 7, 736) 0 conv5\_block2\_concat[0][0]

conv5\_block3\_2\_conv[0][0]

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conv3d\_65 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_65[0][0]

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conv5\_block4\_0\_bn (BatchNormali (None, 7, 7, 736) 2944 conv5\_block3\_concat[0][0]

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dropout\_56 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_65[0][0]

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conv5\_block4\_0\_relu (Activation (None, 7, 7, 736) 0 conv5\_block4\_0\_bn[0][0]

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batch\_normalization\_66 (BatchNo (None, 9, 15, 15, 36 144 dropout\_56[0][0]

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conv5\_block4\_1\_conv (Conv2D) (None, 7, 7, 128) 94208 conv5\_block4\_0\_relu[0][0]

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activation\_66 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_66[0][0]

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conv5\_block4\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block4\_1\_conv[0][0]

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conv3d\_66 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_66[0][0]

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conv5\_block4\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block4\_1\_bn[0][0]

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dropout\_57 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_66[0][0]

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conv5\_block4\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block4\_1\_relu[0][0]

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batch\_normalization\_67 (BatchNo (None, 9, 15, 15, 14 576 dropout\_57[0][0]

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conv5\_block4\_concat (Concatenat (None, 7, 7, 768) 0 conv5\_block3\_concat[0][0]

conv5\_block4\_2\_conv[0][0]

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activation\_67 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_67[0][0]

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conv5\_block5\_0\_bn (BatchNormali (None, 7, 7, 768) 3072 conv5\_block4\_concat[0][0]

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conv3d\_67 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_67[0][0]

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conv5\_block5\_0\_relu (Activation (None, 7, 7, 768) 0 conv5\_block5\_0\_bn[0][0]

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dropout\_58 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_67[0][0]

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conv5\_block5\_1\_conv (Conv2D) (None, 7, 7, 128) 98304 conv5\_block5\_0\_relu[0][0]

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batch\_normalization\_68 (BatchNo (None, 9, 15, 15, 36 144 dropout\_58[0][0]

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conv5\_block5\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block5\_1\_conv[0][0]

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activation\_68 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_68[0][0]

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conv5\_block5\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block5\_1\_bn[0][0]

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conv3d\_68 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_68[0][0]

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conv5\_block5\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block5\_1\_relu[0][0]

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dropout\_59 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_68[0][0]

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conv5\_block5\_concat (Concatenat (None, 7, 7, 800) 0 conv5\_block4\_concat[0][0]

conv5\_block5\_2\_conv[0][0]

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batch\_normalization\_69 (BatchNo (None, 9, 15, 15, 14 576 dropout\_59[0][0]

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conv5\_block6\_0\_bn (BatchNormali (None, 7, 7, 800) 3200 conv5\_block5\_concat[0][0]

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activation\_69 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_69[0][0]

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conv5\_block6\_0\_relu (Activation (None, 7, 7, 800) 0 conv5\_block6\_0\_bn[0][0]

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conv3d\_69 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_69[0][0]

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conv5\_block6\_1\_conv (Conv2D) (None, 7, 7, 128) 102400 conv5\_block6\_0\_relu[0][0]

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dropout\_60 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_69[0][0]

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conv5\_block6\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block6\_1\_conv[0][0]

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batch\_normalization\_70 (BatchNo (None, 9, 15, 15, 36 144 dropout\_60[0][0]

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conv5\_block6\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block6\_1\_bn[0][0]

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activation\_70 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_70[0][0]

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conv5\_block6\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block6\_1\_relu[0][0]

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conv3d\_70 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_70[0][0]

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conv5\_block6\_concat (Concatenat (None, 7, 7, 832) 0 conv5\_block5\_concat[0][0]

conv5\_block6\_2\_conv[0][0]

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dropout\_61 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_70[0][0]

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conv5\_block7\_0\_bn (BatchNormali (None, 7, 7, 832) 3328 conv5\_block6\_concat[0][0]

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batch\_normalization\_71 (BatchNo (None, 9, 15, 15, 14 576 dropout\_61[0][0]

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conv5\_block7\_0\_relu (Activation (None, 7, 7, 832) 0 conv5\_block7\_0\_bn[0][0]

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activation\_71 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_71[0][0]

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conv5\_block7\_1\_conv (Conv2D) (None, 7, 7, 128) 106496 conv5\_block7\_0\_relu[0][0]

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conv3d\_71 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_71[0][0]

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conv5\_block7\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block7\_1\_conv[0][0]

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dropout\_62 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_71[0][0]

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conv5\_block7\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block7\_1\_bn[0][0]

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batch\_normalization\_72 (BatchNo (None, 9, 15, 15, 36 144 dropout\_62[0][0]

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conv5\_block7\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block7\_1\_relu[0][0]

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activation\_72 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_72[0][0]

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conv5\_block7\_concat (Concatenat (None, 7, 7, 864) 0 conv5\_block6\_concat[0][0]

conv5\_block7\_2\_conv[0][0]

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conv3d\_72 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_72[0][0]

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conv5\_block8\_0\_bn (BatchNormali (None, 7, 7, 864) 3456 conv5\_block7\_concat[0][0]

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dropout\_63 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_72[0][0]

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conv5\_block8\_0\_relu (Activation (None, 7, 7, 864) 0 conv5\_block8\_0\_bn[0][0]

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batch\_normalization\_73 (BatchNo (None, 9, 15, 15, 14 576 dropout\_63[0][0]

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conv5\_block8\_1\_conv (Conv2D) (None, 7, 7, 128) 110592 conv5\_block8\_0\_relu[0][0]

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activation\_73 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_73[0][0]

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conv5\_block8\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block8\_1\_conv[0][0]

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conv3d\_73 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_73[0][0]

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conv5\_block8\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block8\_1\_bn[0][0]

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dropout\_64 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_73[0][0]

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conv5\_block8\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block8\_1\_relu[0][0]

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batch\_normalization\_74 (BatchNo (None, 9, 15, 15, 36 144 dropout\_64[0][0]

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conv5\_block8\_concat (Concatenat (None, 7, 7, 896) 0 conv5\_block7\_concat[0][0]

conv5\_block8\_2\_conv[0][0]

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activation\_74 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_74[0][0]

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conv5\_block9\_0\_bn (BatchNormali (None, 7, 7, 896) 3584 conv5\_block8\_concat[0][0]

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conv3d\_74 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_74[0][0]

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conv5\_block9\_0\_relu (Activation (None, 7, 7, 896) 0 conv5\_block9\_0\_bn[0][0]

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dropout\_65 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_74[0][0]

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conv5\_block9\_1\_conv (Conv2D) (None, 7, 7, 128) 114688 conv5\_block9\_0\_relu[0][0]

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batch\_normalization\_75 (BatchNo (None, 9, 15, 15, 14 576 dropout\_65[0][0]

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conv5\_block9\_1\_bn (BatchNormali (None, 7, 7, 128) 512 conv5\_block9\_1\_conv[0][0]

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activation\_75 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_75[0][0]

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conv5\_block9\_1\_relu (Activation (None, 7, 7, 128) 0 conv5\_block9\_1\_bn[0][0]

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conv3d\_75 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_75[0][0]

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conv5\_block9\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block9\_1\_relu[0][0]

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dropout\_66 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_75[0][0]

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conv5\_block9\_concat (Concatenat (None, 7, 7, 928) 0 conv5\_block8\_concat[0][0]

conv5\_block9\_2\_conv[0][0]

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batch\_normalization\_76 (BatchNo (None, 9, 15, 15, 36 144 dropout\_66[0][0]

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conv5\_block10\_0\_bn (BatchNormal (None, 7, 7, 928) 3712 conv5\_block9\_concat[0][0]

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activation\_76 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_76[0][0]

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conv5\_block10\_0\_relu (Activatio (None, 7, 7, 928) 0 conv5\_block10\_0\_bn[0][0]

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conv3d\_76 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_76[0][0]

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conv5\_block10\_1\_conv (Conv2D) (None, 7, 7, 128) 118784 conv5\_block10\_0\_relu[0][0]

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dropout\_67 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_76[0][0]

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conv5\_block10\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block10\_1\_conv[0][0]

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batch\_normalization\_77 (BatchNo (None, 9, 15, 15, 14 576 dropout\_67[0][0]

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conv5\_block10\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block10\_1\_bn[0][0]

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activation\_77 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_77[0][0]

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conv5\_block10\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block10\_1\_relu[0][0]

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conv3d\_77 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_77[0][0]

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conv5\_block10\_concat (Concatena (None, 7, 7, 960) 0 conv5\_block9\_concat[0][0]

conv5\_block10\_2\_conv[0][0]

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dropout\_68 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_77[0][0]

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conv5\_block11\_0\_bn (BatchNormal (None, 7, 7, 960) 3840 conv5\_block10\_concat[0][0]

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batch\_normalization\_78 (BatchNo (None, 9, 15, 15, 36 144 dropout\_68[0][0]

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conv5\_block11\_0\_relu (Activatio (None, 7, 7, 960) 0 conv5\_block11\_0\_bn[0][0]

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activation\_78 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_78[0][0]

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conv5\_block11\_1\_conv (Conv2D) (None, 7, 7, 128) 122880 conv5\_block11\_0\_relu[0][0]

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conv3d\_78 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_78[0][0]

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conv5\_block11\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block11\_1\_conv[0][0]

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dropout\_69 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_78[0][0]

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conv5\_block11\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block11\_1\_bn[0][0]

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batch\_normalization\_79 (BatchNo (None, 9, 15, 15, 14 576 dropout\_69[0][0]

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conv5\_block11\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block11\_1\_relu[0][0]

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activation\_79 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_79[0][0]

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conv5\_block11\_concat (Concatena (None, 7, 7, 992) 0 conv5\_block10\_concat[0][0]

conv5\_block11\_2\_conv[0][0]

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conv3d\_79 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_79[0][0]

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conv5\_block12\_0\_bn (BatchNormal (None, 7, 7, 992) 3968 conv5\_block11\_concat[0][0]

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dropout\_70 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_79[0][0]

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conv5\_block12\_0\_relu (Activatio (None, 7, 7, 992) 0 conv5\_block12\_0\_bn[0][0]

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batch\_normalization\_80 (BatchNo (None, 9, 15, 15, 36 144 dropout\_70[0][0]

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conv5\_block12\_1\_conv (Conv2D) (None, 7, 7, 128) 126976 conv5\_block12\_0\_relu[0][0]

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activation\_80 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_80[0][0]

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conv5\_block12\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block12\_1\_conv[0][0]

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conv3d\_80 (Conv3D) (None, 9, 15, 15, 14 5328 activation\_80[0][0]

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conv5\_block12\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block12\_1\_bn[0][0]

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dropout\_71 (Dropout) (None, 9, 15, 15, 14 0 conv3d\_80[0][0]

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conv5\_block12\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block12\_1\_relu[0][0]

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batch\_normalization\_81 (BatchNo (None, 9, 15, 15, 14 576 dropout\_71[0][0]

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conv5\_block12\_concat (Concatena (None, 7, 7, 1024) 0 conv5\_block11\_concat[0][0]

conv5\_block12\_2\_conv[0][0]

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activation\_81 (Activation) (None, 9, 15, 15, 14 0 batch\_normalization\_81[0][0]

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conv5\_block13\_0\_bn (BatchNormal (None, 7, 7, 1024) 4096 conv5\_block12\_concat[0][0]

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conv3d\_81 (Conv3D) (None, 9, 15, 15, 36 140004 activation\_81[0][0]

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conv5\_block13\_0\_relu (Activatio (None, 7, 7, 1024) 0 conv5\_block13\_0\_bn[0][0]

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dropout\_72 (Dropout) (None, 9, 15, 15, 36 0 conv3d\_81[0][0]

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conv5\_block13\_1\_conv (Conv2D) (None, 7, 7, 128) 131072 conv5\_block13\_0\_relu[0][0]

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batch\_normalization\_82 (BatchNo (None, 9, 15, 15, 36 144 dropout\_72[0][0]

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batch\_normalization\_83 (BatchNo (None, 9, 15, 15, 36 144 dropout\_72[0][0]

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batch\_normalization\_84 (BatchNo (None, 9, 15, 15, 36 144 dropout\_72[0][0]

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conv5\_block13\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block13\_1\_conv[0][0]

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activation\_82 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_82[0][0]

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activation\_83 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_83[0][0]

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activation\_84 (Activation) (None, 9, 15, 15, 36 0 batch\_normalization\_84[0][0]

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conv5\_block13\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block13\_1\_bn[0][0]

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conv3d\_82 (Conv3D) (None, 9, 15, 15, 12 41472 activation\_82[0][0]

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conv3d\_83 (Conv3D) (None, 9, 15, 15, 12 124416 activation\_83[0][0]

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conv3d\_84 (Conv3D) (None, 9, 15, 15, 12 165888 activation\_84[0][0]

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conv5\_block13\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block13\_1\_relu[0][0]

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concatenate\_3 (Concatenate) (None, 27, 15, 15, 1 0 conv3d\_82[0][0]

conv3d\_83[0][0]

conv3d\_84[0][0]

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conv5\_block13\_concat (Concatena (None, 7, 7, 1056) 0 conv5\_block12\_concat[0][0]

conv5\_block13\_2\_conv[0][0]

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batch\_normalization\_85 (BatchNo (None, 27, 15, 15, 1 512 concatenate\_3[0][0]

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conv5\_block14\_0\_bn (BatchNormal (None, 7, 7, 1056) 4224 conv5\_block13\_concat[0][0]

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activation\_85 (Activation) (None, 27, 15, 15, 1 0 batch\_normalization\_85[0][0]

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conv5\_block14\_0\_relu (Activatio (None, 7, 7, 1056) 0 conv5\_block14\_0\_bn[0][0]

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conv3d\_85 (Conv3D) (None, 27, 15, 15, 1 172032 activation\_85[0][0]

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conv5\_block14\_1\_conv (Conv2D) (None, 7, 7, 128) 135168 conv5\_block14\_0\_relu[0][0]

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average\_pooling3d\_3 (AveragePoo (None, 13, 7, 7, 134 0 conv3d\_85[0][0]

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conv5\_block14\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block14\_1\_conv[0][0]

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batch\_normalization\_86 (BatchNo (None, 13, 7, 7, 134 5376 average\_pooling3d\_3[0][0]

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conv5\_block14\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block14\_1\_bn[0][0]

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activation\_86 (Activation) (None, 13, 7, 7, 134 0 batch\_normalization\_86[0][0]

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conv5\_block14\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block14\_1\_relu[0][0]

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conv3d\_86 (Conv3D) (None, 13, 7, 7, 144 193680 activation\_86[0][0]

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conv5\_block14\_concat (Concatena (None, 7, 7, 1088) 0 conv5\_block13\_concat[0][0]

conv5\_block14\_2\_conv[0][0]

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dropout\_73 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_86[0][0]

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conv5\_block15\_0\_bn (BatchNormal (None, 7, 7, 1088) 4352 conv5\_block14\_concat[0][0]

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batch\_normalization\_87 (BatchNo (None, 13, 7, 7, 144 576 dropout\_73[0][0]

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conv5\_block15\_0\_relu (Activatio (None, 7, 7, 1088) 0 conv5\_block15\_0\_bn[0][0]

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activation\_87 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_87[0][0]

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conv5\_block15\_1\_conv (Conv2D) (None, 7, 7, 128) 139264 conv5\_block15\_0\_relu[0][0]

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conv3d\_87 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_87[0][0]

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conv5\_block15\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block15\_1\_conv[0][0]

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dropout\_74 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_87[0][0]

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conv5\_block15\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block15\_1\_bn[0][0]

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batch\_normalization\_88 (BatchNo (None, 13, 7, 7, 36) 144 dropout\_74[0][0]

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conv5\_block15\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block15\_1\_relu[0][0]

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activation\_88 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_88[0][0]

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conv5\_block15\_concat (Concatena (None, 7, 7, 1120) 0 conv5\_block14\_concat[0][0]

conv5\_block15\_2\_conv[0][0]

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conv3d\_88 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_88[0][0]

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conv5\_block16\_0\_bn (BatchNormal (None, 7, 7, 1120) 4480 conv5\_block15\_concat[0][0]

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dropout\_75 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_88[0][0]

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conv5\_block16\_0\_relu (Activatio (None, 7, 7, 1120) 0 conv5\_block16\_0\_bn[0][0]

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batch\_normalization\_89 (BatchNo (None, 13, 7, 7, 144 576 dropout\_75[0][0]

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conv5\_block16\_1\_conv (Conv2D) (None, 7, 7, 128) 143360 conv5\_block16\_0\_relu[0][0]

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activation\_89 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_89[0][0]

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conv5\_block16\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block16\_1\_conv[0][0]

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conv3d\_89 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_89[0][0]

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conv5\_block16\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block16\_1\_bn[0][0]

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dropout\_76 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_89[0][0]

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conv5\_block16\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block16\_1\_relu[0][0]

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batch\_normalization\_90 (BatchNo (None, 13, 7, 7, 36) 144 dropout\_76[0][0]

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conv5\_block16\_concat (Concatena (None, 7, 7, 1152) 0 conv5\_block15\_concat[0][0]

conv5\_block16\_2\_conv[0][0]

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activation\_90 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_90[0][0]

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conv5\_block17\_0\_bn (BatchNormal (None, 7, 7, 1152) 4608 conv5\_block16\_concat[0][0]

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conv3d\_90 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_90[0][0]

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conv5\_block17\_0\_relu (Activatio (None, 7, 7, 1152) 0 conv5\_block17\_0\_bn[0][0]

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dropout\_77 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_90[0][0]

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conv5\_block17\_1\_conv (Conv2D) (None, 7, 7, 128) 147456 conv5\_block17\_0\_relu[0][0]

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batch\_normalization\_91 (BatchNo (None, 13, 7, 7, 144 576 dropout\_77[0][0]

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conv5\_block17\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block17\_1\_conv[0][0]

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activation\_91 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_91[0][0]

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conv5\_block17\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block17\_1\_bn[0][0]

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conv3d\_91 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_91[0][0]

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conv5\_block17\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block17\_1\_relu[0][0]

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dropout\_78 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_91[0][0]

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conv5\_block17\_concat (Concatena (None, 7, 7, 1184) 0 conv5\_block16\_concat[0][0]

conv5\_block17\_2\_conv[0][0]

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batch\_normalization\_92 (BatchNo (None, 13, 7, 7, 36) 144 dropout\_78[0][0]

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conv5\_block18\_0\_bn (BatchNormal (None, 7, 7, 1184) 4736 conv5\_block17\_concat[0][0]

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activation\_92 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_92[0][0]

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conv5\_block18\_0\_relu (Activatio (None, 7, 7, 1184) 0 conv5\_block18\_0\_bn[0][0]

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conv3d\_92 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_92[0][0]

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conv5\_block18\_1\_conv (Conv2D) (None, 7, 7, 128) 151552 conv5\_block18\_0\_relu[0][0]

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dropout\_79 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_92[0][0]

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conv5\_block18\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block18\_1\_conv[0][0]

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batch\_normalization\_93 (BatchNo (None, 13, 7, 7, 144 576 dropout\_79[0][0]

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conv5\_block18\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block18\_1\_bn[0][0]

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activation\_93 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_93[0][0]

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conv5\_block18\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block18\_1\_relu[0][0]

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conv3d\_93 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_93[0][0]

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conv5\_block18\_concat (Concatena (None, 7, 7, 1216) 0 conv5\_block17\_concat[0][0]

conv5\_block18\_2\_conv[0][0]

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dropout\_80 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_93[0][0]

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conv5\_block19\_0\_bn (BatchNormal (None, 7, 7, 1216) 4864 conv5\_block18\_concat[0][0]

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batch\_normalization\_94 (BatchNo (None, 13, 7, 7, 36) 144 dropout\_80[0][0]

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conv5\_block19\_0\_relu (Activatio (None, 7, 7, 1216) 0 conv5\_block19\_0\_bn[0][0]

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activation\_94 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_94[0][0]

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conv5\_block19\_1\_conv (Conv2D) (None, 7, 7, 128) 155648 conv5\_block19\_0\_relu[0][0]

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conv3d\_94 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_94[0][0]

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conv5\_block19\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block19\_1\_conv[0][0]

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dropout\_81 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_94[0][0]

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conv5\_block19\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block19\_1\_bn[0][0]

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batch\_normalization\_95 (BatchNo (None, 13, 7, 7, 144 576 dropout\_81[0][0]

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conv5\_block19\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block19\_1\_relu[0][0]

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activation\_95 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_95[0][0]

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conv5\_block19\_concat (Concatena (None, 7, 7, 1248) 0 conv5\_block18\_concat[0][0]

conv5\_block19\_2\_conv[0][0]

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conv3d\_95 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_95[0][0]

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conv5\_block20\_0\_bn (BatchNormal (None, 7, 7, 1248) 4992 conv5\_block19\_concat[0][0]

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dropout\_82 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_95[0][0]

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conv5\_block20\_0\_relu (Activatio (None, 7, 7, 1248) 0 conv5\_block20\_0\_bn[0][0]

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batch\_normalization\_96 (BatchNo (None, 13, 7, 7, 36) 144 dropout\_82[0][0]

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conv5\_block20\_1\_conv (Conv2D) (None, 7, 7, 128) 159744 conv5\_block20\_0\_relu[0][0]

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activation\_96 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_96[0][0]

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conv5\_block20\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block20\_1\_conv[0][0]

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conv3d\_96 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_96[0][0]

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conv5\_block20\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block20\_1\_bn[0][0]

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dropout\_83 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_96[0][0]

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conv5\_block20\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block20\_1\_relu[0][0]

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batch\_normalization\_97 (BatchNo (None, 13, 7, 7, 144 576 dropout\_83[0][0]

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conv5\_block20\_concat (Concatena (None, 7, 7, 1280) 0 conv5\_block19\_concat[0][0]

conv5\_block20\_2\_conv[0][0]

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activation\_97 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_97[0][0]

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conv5\_block21\_0\_bn (BatchNormal (None, 7, 7, 1280) 5120 conv5\_block20\_concat[0][0]

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conv3d\_97 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_97[0][0]

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conv5\_block21\_0\_relu (Activatio (None, 7, 7, 1280) 0 conv5\_block21\_0\_bn[0][0]

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dropout\_84 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_97[0][0]

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conv5\_block21\_1\_conv (Conv2D) (None, 7, 7, 128) 163840 conv5\_block21\_0\_relu[0][0]

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batch\_normalization\_98 (BatchNo (None, 13, 7, 7, 36) 144 dropout\_84[0][0]

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conv5\_block21\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block21\_1\_conv[0][0]

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activation\_98 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_98[0][0]

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conv5\_block21\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block21\_1\_bn[0][0]

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conv3d\_98 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_98[0][0]

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conv5\_block21\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block21\_1\_relu[0][0]

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dropout\_85 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_98[0][0]

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conv5\_block21\_concat (Concatena (None, 7, 7, 1312) 0 conv5\_block20\_concat[0][0]

conv5\_block21\_2\_conv[0][0]

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batch\_normalization\_99 (BatchNo (None, 13, 7, 7, 144 576 dropout\_85[0][0]

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conv5\_block22\_0\_bn (BatchNormal (None, 7, 7, 1312) 5248 conv5\_block21\_concat[0][0]

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activation\_99 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_99[0][0]

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conv5\_block22\_0\_relu (Activatio (None, 7, 7, 1312) 0 conv5\_block22\_0\_bn[0][0]

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conv3d\_99 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_99[0][0]

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conv5\_block22\_1\_conv (Conv2D) (None, 7, 7, 128) 167936 conv5\_block22\_0\_relu[0][0]

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dropout\_86 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_99[0][0]

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conv5\_block22\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block22\_1\_conv[0][0]

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batch\_normalization\_100 (BatchN (None, 13, 7, 7, 36) 144 dropout\_86[0][0]

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conv5\_block22\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block22\_1\_bn[0][0]

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activation\_100 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_100[0][0]

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conv5\_block22\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block22\_1\_relu[0][0]

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conv3d\_100 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_100[0][0]

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conv5\_block22\_concat (Concatena (None, 7, 7, 1344) 0 conv5\_block21\_concat[0][0]

conv5\_block22\_2\_conv[0][0]

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dropout\_87 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_100[0][0]

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conv5\_block23\_0\_bn (BatchNormal (None, 7, 7, 1344) 5376 conv5\_block22\_concat[0][0]

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batch\_normalization\_101 (BatchN (None, 13, 7, 7, 144 576 dropout\_87[0][0]

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conv5\_block23\_0\_relu (Activatio (None, 7, 7, 1344) 0 conv5\_block23\_0\_bn[0][0]

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activation\_101 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_101[0][0]

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conv5\_block23\_1\_conv (Conv2D) (None, 7, 7, 128) 172032 conv5\_block23\_0\_relu[0][0]

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conv3d\_101 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_101[0][0]

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conv5\_block23\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block23\_1\_conv[0][0]

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dropout\_88 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_101[0][0]

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conv5\_block23\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block23\_1\_bn[0][0]

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batch\_normalization\_102 (BatchN (None, 13, 7, 7, 36) 144 dropout\_88[0][0]

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conv5\_block23\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block23\_1\_relu[0][0]

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activation\_102 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_102[0][0]

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conv5\_block23\_concat (Concatena (None, 7, 7, 1376) 0 conv5\_block22\_concat[0][0]

conv5\_block23\_2\_conv[0][0]

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conv3d\_102 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_102[0][0]

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conv5\_block24\_0\_bn (BatchNormal (None, 7, 7, 1376) 5504 conv5\_block23\_concat[0][0]

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dropout\_89 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_102[0][0]

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conv5\_block24\_0\_relu (Activatio (None, 7, 7, 1376) 0 conv5\_block24\_0\_bn[0][0]

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batch\_normalization\_103 (BatchN (None, 13, 7, 7, 144 576 dropout\_89[0][0]

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conv5\_block24\_1\_conv (Conv2D) (None, 7, 7, 128) 176128 conv5\_block24\_0\_relu[0][0]

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activation\_103 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_103[0][0]

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conv5\_block24\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block24\_1\_conv[0][0]

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conv3d\_103 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_103[0][0]

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conv5\_block24\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block24\_1\_bn[0][0]

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dropout\_90 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_103[0][0]

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conv5\_block24\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block24\_1\_relu[0][0]

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batch\_normalization\_104 (BatchN (None, 13, 7, 7, 36) 144 dropout\_90[0][0]

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conv5\_block24\_concat (Concatena (None, 7, 7, 1408) 0 conv5\_block23\_concat[0][0]

conv5\_block24\_2\_conv[0][0]

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activation\_104 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_104[0][0]

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conv5\_block25\_0\_bn (BatchNormal (None, 7, 7, 1408) 5632 conv5\_block24\_concat[0][0]

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conv3d\_104 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_104[0][0]

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conv5\_block25\_0\_relu (Activatio (None, 7, 7, 1408) 0 conv5\_block25\_0\_bn[0][0]

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dropout\_91 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_104[0][0]

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conv5\_block25\_1\_conv (Conv2D) (None, 7, 7, 128) 180224 conv5\_block25\_0\_relu[0][0]

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batch\_normalization\_105 (BatchN (None, 13, 7, 7, 144 576 dropout\_91[0][0]

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conv5\_block25\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block25\_1\_conv[0][0]

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activation\_105 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_105[0][0]

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conv5\_block25\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block25\_1\_bn[0][0]

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conv3d\_105 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_105[0][0]

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conv5\_block25\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block25\_1\_relu[0][0]

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dropout\_92 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_105[0][0]

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conv5\_block25\_concat (Concatena (None, 7, 7, 1440) 0 conv5\_block24\_concat[0][0]

conv5\_block25\_2\_conv[0][0]

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batch\_normalization\_106 (BatchN (None, 13, 7, 7, 36) 144 dropout\_92[0][0]

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conv5\_block26\_0\_bn (BatchNormal (None, 7, 7, 1440) 5760 conv5\_block25\_concat[0][0]

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activation\_106 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_106[0][0]

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conv5\_block26\_0\_relu (Activatio (None, 7, 7, 1440) 0 conv5\_block26\_0\_bn[0][0]

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conv3d\_106 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_106[0][0]

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conv5\_block26\_1\_conv (Conv2D) (None, 7, 7, 128) 184320 conv5\_block26\_0\_relu[0][0]

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dropout\_93 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_106[0][0]

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conv5\_block26\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block26\_1\_conv[0][0]

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batch\_normalization\_107 (BatchN (None, 13, 7, 7, 144 576 dropout\_93[0][0]

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conv5\_block26\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block26\_1\_bn[0][0]

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activation\_107 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_107[0][0]

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conv5\_block26\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block26\_1\_relu[0][0]

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conv3d\_107 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_107[0][0]

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conv5\_block26\_concat (Concatena (None, 7, 7, 1472) 0 conv5\_block25\_concat[0][0]

conv5\_block26\_2\_conv[0][0]

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dropout\_94 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_107[0][0]

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conv5\_block27\_0\_bn (BatchNormal (None, 7, 7, 1472) 5888 conv5\_block26\_concat[0][0]

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batch\_normalization\_108 (BatchN (None, 13, 7, 7, 36) 144 dropout\_94[0][0]

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conv5\_block27\_0\_relu (Activatio (None, 7, 7, 1472) 0 conv5\_block27\_0\_bn[0][0]

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activation\_108 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_108[0][0]

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conv5\_block27\_1\_conv (Conv2D) (None, 7, 7, 128) 188416 conv5\_block27\_0\_relu[0][0]

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conv3d\_108 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_108[0][0]

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conv5\_block27\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block27\_1\_conv[0][0]

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dropout\_95 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_108[0][0]

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conv5\_block27\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block27\_1\_bn[0][0]

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batch\_normalization\_109 (BatchN (None, 13, 7, 7, 144 576 dropout\_95[0][0]

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conv5\_block27\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block27\_1\_relu[0][0]

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activation\_109 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_109[0][0]

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conv5\_block27\_concat (Concatena (None, 7, 7, 1504) 0 conv5\_block26\_concat[0][0]

conv5\_block27\_2\_conv[0][0]

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conv3d\_109 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_109[0][0]

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conv5\_block28\_0\_bn (BatchNormal (None, 7, 7, 1504) 6016 conv5\_block27\_concat[0][0]

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dropout\_96 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_109[0][0]

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conv5\_block28\_0\_relu (Activatio (None, 7, 7, 1504) 0 conv5\_block28\_0\_bn[0][0]

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batch\_normalization\_110 (BatchN (None, 13, 7, 7, 36) 144 dropout\_96[0][0]

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conv5\_block28\_1\_conv (Conv2D) (None, 7, 7, 128) 192512 conv5\_block28\_0\_relu[0][0]

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activation\_110 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_110[0][0]

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conv5\_block28\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block28\_1\_conv[0][0]

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conv3d\_110 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_110[0][0]

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conv5\_block28\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block28\_1\_bn[0][0]

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dropout\_97 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_110[0][0]

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conv5\_block28\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block28\_1\_relu[0][0]

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batch\_normalization\_111 (BatchN (None, 13, 7, 7, 144 576 dropout\_97[0][0]

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conv5\_block28\_concat (Concatena (None, 7, 7, 1536) 0 conv5\_block27\_concat[0][0]

conv5\_block28\_2\_conv[0][0]

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activation\_111 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_111[0][0]

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conv5\_block29\_0\_bn (BatchNormal (None, 7, 7, 1536) 6144 conv5\_block28\_concat[0][0]

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conv3d\_111 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_111[0][0]

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conv5\_block29\_0\_relu (Activatio (None, 7, 7, 1536) 0 conv5\_block29\_0\_bn[0][0]

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dropout\_98 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_111[0][0]

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conv5\_block29\_1\_conv (Conv2D) (None, 7, 7, 128) 196608 conv5\_block29\_0\_relu[0][0]

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batch\_normalization\_112 (BatchN (None, 13, 7, 7, 36) 144 dropout\_98[0][0]

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conv5\_block29\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block29\_1\_conv[0][0]

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activation\_112 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_112[0][0]

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conv5\_block29\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block29\_1\_bn[0][0]

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conv3d\_112 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_112[0][0]

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conv5\_block29\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block29\_1\_relu[0][0]

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dropout\_99 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_112[0][0]

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conv5\_block29\_concat (Concatena (None, 7, 7, 1568) 0 conv5\_block28\_concat[0][0]

conv5\_block29\_2\_conv[0][0]

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batch\_normalization\_113 (BatchN (None, 13, 7, 7, 144 576 dropout\_99[0][0]

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conv5\_block30\_0\_bn (BatchNormal (None, 7, 7, 1568) 6272 conv5\_block29\_concat[0][0]

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activation\_113 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_113[0][0]

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conv5\_block30\_0\_relu (Activatio (None, 7, 7, 1568) 0 conv5\_block30\_0\_bn[0][0]

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conv3d\_113 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_113[0][0]

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conv5\_block30\_1\_conv (Conv2D) (None, 7, 7, 128) 200704 conv5\_block30\_0\_relu[0][0]

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dropout\_100 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_113[0][0]

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conv5\_block30\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block30\_1\_conv[0][0]

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batch\_normalization\_114 (BatchN (None, 13, 7, 7, 36) 144 dropout\_100[0][0]

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conv5\_block30\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block30\_1\_bn[0][0]

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activation\_114 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_114[0][0]

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conv5\_block30\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block30\_1\_relu[0][0]

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conv3d\_114 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_114[0][0]

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conv5\_block30\_concat (Concatena (None, 7, 7, 1600) 0 conv5\_block29\_concat[0][0]

conv5\_block30\_2\_conv[0][0]

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dropout\_101 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_114[0][0]

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conv5\_block31\_0\_bn (BatchNormal (None, 7, 7, 1600) 6400 conv5\_block30\_concat[0][0]

batch\_normalization\_115 (BatchN (None, 13, 7, 7, 144 576 dropout\_101[0][0]

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conv5\_block31\_0\_relu (Activatio (None, 7, 7, 1600) 0 conv5\_block31\_0\_bn[0][0]

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activation\_115 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_115[0][0]

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conv5\_block31\_1\_conv (Conv2D) (None, 7, 7, 128) 204800 conv5\_block31\_0\_relu[0][0]

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conv3d\_115 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_115[0][0]

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conv5\_block31\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block31\_1\_conv[0][0]

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dropout\_102 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_115[0][0]

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conv5\_block31\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block31\_1\_bn[0][0]

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batch\_normalization\_116 (BatchN (None, 13, 7, 7, 36) 144 dropout\_102[0][0]

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conv5\_block31\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block31\_1\_relu[0][0]

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activation\_116 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_116[0][0]

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conv5\_block31\_concat (Concatena (None, 7, 7, 1632) 0 conv5\_block30\_concat[0][0]

conv5\_block31\_2\_conv[0][0]

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conv3d\_116 (Conv3D) (None, 13, 7, 7, 144 5328 activation\_116[0][0]

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conv5\_block32\_0\_bn (BatchNormal (None, 7, 7, 1632) 6528 conv5\_block31\_concat[0][0]

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dropout\_103 (Dropout) (None, 13, 7, 7, 144 0 conv3d\_116[0][0]

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conv5\_block32\_0\_relu (Activatio (None, 7, 7, 1632) 0 conv5\_block32\_0\_bn[0][0]

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batch\_normalization\_117 (BatchN (None, 13, 7, 7, 144 576 dropout\_103[0][0]

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conv5\_block32\_1\_conv (Conv2D) (None, 7, 7, 128) 208896 conv5\_block32\_0\_relu[0][0]

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activation\_117 (Activation) (None, 13, 7, 7, 144 0 batch\_normalization\_117[0][0]

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conv5\_block32\_1\_bn (BatchNormal (None, 7, 7, 128) 512 conv5\_block32\_1\_conv[0][0]

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conv3d\_117 (Conv3D) (None, 13, 7, 7, 36) 140004 activation\_117[0][0]

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conv5\_block32\_1\_relu (Activatio (None, 7, 7, 128) 0 conv5\_block32\_1\_bn[0][0]

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dropout\_104 (Dropout) (None, 13, 7, 7, 36) 0 conv3d\_117[0][0]

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conv5\_block32\_2\_conv (Conv2D) (None, 7, 7, 32) 36864 conv5\_block32\_1\_relu[0][0]

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batch\_normalization\_118 (BatchN (None, 13, 7, 7, 36) 144 dropout\_104[0][0]

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conv5\_block32\_concat (Concatena (None, 7, 7, 1664) 0 conv5\_block31\_concat[0][0]

conv5\_block32\_2\_conv[0][0]

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activation\_118 (Activation) (None, 13, 7, 7, 36) 0 batch\_normalization\_118[0][0]

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bn (BatchNormalization) (None, 7, 7, 1664) 6656 conv5\_block32\_concat[0][0]

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average\_pooling3d\_4 (AveragePoo (None, 13, 1, 1, 36) 0 activation\_118[0][0]

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relu (Activation) (None, 7, 7, 1664) 0 bn[0][0]

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flatten\_3d (Flatten) (None, 468) 0 average\_pooling3d\_4[0][0]

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avg\_pool\_densnet2d (GlobalAvera (None, 1664) 0 relu[0][0]

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dense\_1 (Dense) (None, 512) 240128 flatten\_3d[0][0]

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dense\_2 (Dense) (None, 256) 426240 avg\_pool\_densnet2d[0][0]

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concatenate\_4 (Concatenate) (None, 768) 0 dense\_1[0][0]

dense\_2[0][0]

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dropout\_105 (Dropout) (None, 768) 0 concatenate\_4[0][0]

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dense\_3 (Dense) (None, 256) 196864 dropout\_105[0][0]

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dropout\_106 (Dropout) (None, 256) 0 dense\_3[0][0]

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dense\_4 (Dense) (None, 128) 32896 dropout\_106[0][0]

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dropout\_107 (Dropout) (None, 128) 0 dense\_4[0][0]

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dense\_5 (Dense) (None, 2) 258 dropout\_107[0][0]

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Total params: 22,755,458

Trainable params: 10,088,002

Non-trainable params: 12,667,456

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