

Model: "model"

| Layer (type)   | Output Shape              | Param # | Connected to       |
|--|---------------------------|---------|--------------------|
| =====  |                           |         |                    |
| input_1 (InputLayer)   | [(None, 256, 256, 3<br>)] | 0       | []                 |
| conv2d (Conv2D)  | (None, 256, 256, 16<br>)  | 448     | ['input_1[0][0]']  |
| batch_normalization (BatchNormal<br>alization)               | (None, 256, 256, 16<br>)  | 64      | ['conv2d[0][0]']   |
| activation (Activation)<br>['batch_normalization[0][0]']     | (None, 256, 256, 16<br>)  | 0       |                    |
| conv2d_1 (Conv2D)<br>['activation[0][0]']                    | (None, 256, 256, 16<br>)  | 2320    |                    |
| batch_normalization_1 (BatchNo<br>rmalization)               | (None, 256, 256, 16<br>)  | 64      | ['conv2d_1[0][0]'] |
| activation_1 (Activation)<br>['batch_normalization_1[0][0]'] | (None, 256, 256, 16<br>)  | 0       |                    |
| max_pooling2d (MaxPooling2D)<br>['activation_1[0][0]']       | (None, 128, 128, 16<br>)  | 0       |                    |
| conv2d_2 (Conv2D)<br>['max_pooling2d[0][0]']                 | (None, 128, 128, 32<br>)  | 4640    |                    |
| batch_normalization_2 (BatchNo<br>rmalization)               | (None, 128, 128, 32<br>)  | 128     | ['conv2d_2[0][0]'] |
| activation_2 (Activation)<br>['batch_normalization_2[0][0]'] | (None, 128, 128, 32<br>)  | 0       |                    |
| conv2d_3 (Conv2D)<br>['activation_2[0][0]']                  | (None, 128, 128, 32<br>)  | 9248    |                    |
| batch_normalization_3 (BatchNo                               | (None, 128, 128, 32       | 128     | ['conv2d_3[0][0]'] |

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rmalization)
)

activation_3 (Activation)      (None, 128, 128, 32) 0
['batch_normalization_3[0][0]']
)

max_pooling2d_1 (MaxPooling2D) (None, 64, 64, 32) 0
['activation_3[0][0]']

conv2d_4 (Conv2D)              (None, 64, 64, 48) 13872
['max_pooling2d_1[0][0]']

batch_normalization_4 (BatchNo (None, 64, 64, 48) 192      ['conv2d_4[0][0]']
rmalization)

activation_4 (Activation)      (None, 64, 64, 48) 0
['batch_normalization_4[0][0]']

conv2d_5 (Conv2D)              (None, 64, 64, 48) 20784
['activation_4[0][0]']

batch_normalization_5 (BatchNo (None, 64, 64, 48) 192      ['conv2d_5[0][0]']
rmalization)

activation_5 (Activation)      (None, 64, 64, 48) 0
['batch_normalization_5[0][0]']

max_pooling2d_2 (MaxPooling2D) (None, 32, 32, 48) 0
['activation_5[0][0]']

conv2d_6 (Conv2D)              (None, 32, 32, 64) 27712
['max_pooling2d_2[0][0]']

batch_normalization_6 (BatchNo (None, 32, 32, 64) 256      ['conv2d_6[0][0]']
rmalization)

activation_6 (Activation)      (None, 32, 32, 64) 0
['batch_normalization_6[0][0]']

conv2d_7 (Conv2D)              (None, 32, 32, 64) 36928
['activation_6[0][0]']

batch_normalization_7 (BatchNo (None, 32, 32, 64) 256      ['conv2d_7[0][0]']
rmalization)

activation_7 (Activation)      (None, 32, 32, 64) 0
['batch_normalization_7[0][0]']

max_pooling2d_3 (MaxPooling2D) (None, 16, 16, 64) 0
['activation_7[0][0]']

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|  |                     |       |                    |
|--|---------------------|-------|--------------------|
| conv2d_8 (Conv2D)                            | (None, 16, 16, 64)  | 36928 |                    |
| ['max_pooling2d_3[0][0]']                    |                     |       |                    |
| batch_normalization_8 (Batch Normalization)  | (None, 16, 16, 64)  | 256   | ['conv2d_8[0][0]'] |
| activation_8 (Activation)                    | (None, 16, 16, 64)  | 0     |                    |
| ['batch_normalization_8[0][0]']              |                     |       |                    |
| conv2d_9 (Conv2D)                            | (None, 16, 16, 64)  | 36928 |                    |
| ['activation_8[0][0]']                       |                     |       |                    |
| batch_normalization_9 (Batch Normalization)  | (None, 16, 16, 64)  | 256   | ['conv2d_9[0][0]'] |
| activation_9 (Activation)                    | (None, 16, 16, 64)  | 0     |                    |
| ['batch_normalization_9[0][0]']              |                     |       |                    |
| up_sampling2d (UpSampling2D)                 | (None, 32, 32, 64)  | 0     |                    |
| ['activation_9[0][0]']                       |                     |       |                    |
| concatenate (Concatenate)                    | (None, 32, 32, 128) | 0     |                    |
| ['up_sampling2d[0][0]',                      |                     |       |                    |
| 'activation_7[0][0]']                        |                     |       |                    |
| conv2d_10 (Conv2D)                           | (None, 32, 32, 64)  | 73792 |                    |
| ['concatenate[0][0]']                        |                     |       |                    |
| batch_normalization_10 (Batch Normalization) | (None, 32, 32, 64)  | 256   |                    |
| ['conv2d_10[0][0]']                          |                     |       |                    |
| activation_10 (Activation)                   | (None, 32, 32, 64)  | 0     |                    |
| ['batch_normalization_10[0][0]']             |                     |       |                    |
| conv2d_11 (Conv2D)                           | (None, 32, 32, 64)  | 36928 |                    |
| ['activation_10[0][0]']                      |                     |       |                    |
| batch_normalization_11 (Batch Normalization) | (None, 32, 32, 64)  | 256   |                    |
| ['conv2d_11[0][0]']                          |                     |       |                    |
| activation_11 (Activation)                   | (None, 32, 32, 64)  | 0     |                    |
| ['batch_normalization_11[0][0]']             |                     |       |                    |
| up_sampling2d_1 (UpSampling2D)               | (None, 64, 64, 64)  | 0     |                    |
| ['activation_11[0][0]']                      |                     |       |                    |

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concatenate_1 (Concatenate)      (None, 64, 64, 112)  0
['up_sampling2d_1[0][0]',
'activation_5[0][0]']

conv2d_12 (Conv2D)                (None, 64, 64, 48)  48432
['concatenate_1[0][0]']

batch_normalization_12 (BatchN   (None, 64, 64, 48)  192
['conv2d_12[0][0]']
ormalization)

activation_12 (Activation)        (None, 64, 64, 48)  0
['batch_normalization_12[0][0]']

conv2d_13 (Conv2D)                (None, 64, 64, 48)  20784
['activation_12[0][0]']

batch_normalization_13 (BatchN   (None, 64, 64, 48)  192
['conv2d_13[0][0]']
ormalization)

activation_13 (Activation)        (None, 64, 64, 48)  0
['batch_normalization_13[0][0]']

up_sampling2d_2 (UpSampling2D)   (None, 128, 128, 48  0
['activation_13[0][0]']
)

concatenate_2 (Concatenate)      (None, 128, 128, 80  0
['up_sampling2d_2[0][0]',
)
'activation_3[0][0]']

conv2d_14 (Conv2D)                (None, 128, 128, 32  23072
['concatenate_2[0][0]']
)

batch_normalization_14 (BatchN   (None, 128, 128, 32  128
['conv2d_14[0][0]']
ormalization)
)

activation_14 (Activation)        (None, 128, 128, 32  0
['batch_normalization_14[0][0]']
)

conv2d_15 (Conv2D)                (None, 128, 128, 32  9248
['activation_14[0][0]']
)

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batch_normalization_15 (BatchN (None, 128, 128, 32 128
['conv2d_15[0][0]']
ormalization)
)

activation_15 (Activation) (None, 128, 128, 32 0
['batch_normalization_15[0][0]']
)

up_sampling2d_3 (UpSampling2D) (None, 256, 256, 32 0
['activation_15[0][0]']
)

concatenate_3 (Concatenate) (None, 256, 256, 48 0
['up_sampling2d_3[0][0]',
'activation_1[0][0]']
)

conv2d_16 (Conv2D) (None, 256, 256, 16 6928
['concatenate_3[0][0]']
)

batch_normalization_16 (BatchN (None, 256, 256, 16 64
['conv2d_16[0][0]']
ormalization)
)

activation_16 (Activation) (None, 256, 256, 16 0
['batch_normalization_16[0][0]']
)

conv2d_17 (Conv2D) (None, 256, 256, 16 2320
['activation_16[0][0]']
)

batch_normalization_17 (BatchN (None, 256, 256, 16 64
['conv2d_17[0][0]']
ormalization)
)

activation_17 (Activation) (None, 256, 256, 16 0
['batch_normalization_17[0][0]']
)

conv2d_18 (Conv2D) (None, 256, 256, 1) 17
['activation_17[0][0]']

activation_18 (Activation) (None, 256, 256, 1) 0
['conv2d_18[0][0]']

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Total params: 414,401

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Trainable params: 412,865  
Non-trainable params: 1,536

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