Model: "deeplabv3p_mobilevit_xs"

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Layer (type)	Output Shape	Param #	Connected to
image_input (InputLayer)	[(None, 512, 512, 3)]	0	[]
stem_conv (Conv2D)	(None, 256, 256, 16)	432	['image_input[0][0]']
stem_conv_BN (BatchNormalization)	(None, 256, 256, 16)	64	['stem_conv[0][0]']
stem_conv_swish (Activation)	(None, 256, 256, 16)	0	['stem_conv_BN[0][0]']
mv2_block_0__expand (Conv2D)	(None, 256, 256, 64)	1024	['stem_conv_swish[0][0]']
mv2_block_0_expand_BN (BatchNormalization)	(None, 256, 256, 64)	256	['mv2_block_0__expand[0][0]']
mv2_block_0_expand_swish (Activation)	(None, 256, 256, 64)	0	['mv2_block_0_expand_BN[0][0]']
mv2_block_0_depthwise (DepthwiseConv2D)	(None, 256, 256, 64)	576	['mv2_block_0_expand_swish[0][0]']
mv2_block_0_depthwise_BN (BatchNormalization)	(None, 256, 256, 64)	256	['mv2_block_0_depthwise[0][0]']
mv2_block_0_depthwise_swish (Activation)	(None, 256, 256, 64)	0	['mv2_block_0_depthwise[0][0]']
mv2_block_0_project (Conv2D)	(None, 256, 256, 32)	2048	['mv2_block_0_depthwise_swish[0][0]']
mv2_block_0_project_BN (BatchNormalization)	(None, 256, 256, 32)	128	['mv2_block_0_project[0][0]']
mv2_block_1__expand (Conv2D)	(None, 256, 256, 128)	4096	['mv2_block_0_project_BN[0][0]']
mv2_block_1_expand_BN (BatchNormalization)	(None, 256, 256, 128)	512	['mv2_block_1__expand[0][0]']

Layer (type)	Output Shape	Param #	Connected to
mv2_block_1_expand_swish (Activation)	(None, 256, 256, 128)	0	['mv2_block_1_expand_BN[0][0]']
mv2_block_1_pad (ZeroPadding2D)	(None, 257, 257, 128)	0	['mv2_block_1_expand_swish[0][0]']
mv2_block_1_depthwise (DepthwiseConv2D)	(None, 128, 128, 128)	1152	['mv2_block_1_pad[0][0]']
mv2_block_1_depthwise_BN (BatchNormalization)	(None, 128, 128, 128)	512	['mv2_block_1_depthwise[0][0]']
mv2_block_1_depthwise_swish (Activation)	(None, 128, 128, 128)	0	['mv2_block_1_depthwise_BN[0][0]']
mv2_block_1_project (Conv2D)	(None, 128, 128, 48)	6144	['mv2_block_1_depthwise_swish[0][0]']
mv2_block_1_project_BN (BatchNormalization)	(None, 128, 128, 48)	192	['mv2_block_1_project[0][0]']
mv2_block_2__expand (Conv2D)	(None, 128, 128, 192)	9216	['mv2_block_1_project_BN[0][0]']
mv2_block_2_expand_BN (BatchNormalization)	(None, 128, 128, 192)	768	['mv2_block_2__expand[0][0]']
mv2_block_2_expand_swish (Activation)	(None, 128, 128, 192)	0	['mv2_block_2_expand_BN[0][0]']
mv2_block_2_depthwise (DepthwiseConv2D)	(None, 128, 128, 192)	1728	['mv2_block_2_expand_swish[0][0]']
mv2_block_2_depthwise_BN (BatchNormalization)	(None, 128, 128, 192)	768	['mv2_block_2_depthwise[0][0]']
mv2_block_2_depthwise_swish (Activation)	(None, 128, 128, 192)	0	['mv2_block_2_depthwise_BN[0][0]']
mv2_block_2_project (Conv2D)	(None, 128, 128, 48)	9216	['mv2_block_2_depthwise_swish[0][0]']
mv2_block_2_project_BN (BatchNormalization)	(None, 128, 128, 48)	192	['mv2_block_2_project[0][0]']
mv2_block_2_add (Add)	(None, 128, 128, 48)	0	['mv2_block_1_pro

Layer (type)	Output Shape	Param #	Connected to
mv2_block_3__expand (Conv2D)	(None, 128, 128, 19 2)	9216	['mv2_block_2_add [0][0]']
mv2_block_3_expand_BN (BatchNo rmalization)	(None, 128, 128, 19 2)	768	['mv2_block_3__ex pand[0][0]']
mv2_block_3_expand_swish (Acti vation)	(None, 128, 128, 19 2)	0	['mv2_block_3_exp and_BN[0][0]']
mv2_block_3_depthwise (Depthwi seConv2D)	(None, 128, 128, 19 2)	1728	['mv2_block_3_exp and_swish[0][0]']
mv2_block_3_depthwise_BN (Batc hNormalization)	(None, 128, 128, 19 2)	768	['mv2_block_3_dep thwise[0][0]']
mv2_block_3_depthwise_swish (A ctivation)	(None, 128, 128, 19 2)	0	['mv2_block_3_dep thwise_BN[0][0]']
mv2_block_3_project (Conv2D)	(None, 128, 128, 48)	9216	['mv2_block_3_dep thwise_swish[0][0]']
mv2_block_3_project_BN (BatchN ormalization)	(None, 128, 128, 48)	192	['mv2_block_3_pro ject[0][0]']
mv2_block_3_add (Add)	(None, 128, 128, 48)	0	['mv2_block_2_add [0][0]', 'mv2_block_3_pro ject_BN[0][0]']
mv2_block_4__expand (Conv2D)	(None, 128, 128, 19 2)	9216	['mv2_block_3_add [0][0]']
mv2_block_4_expand_BN (BatchNo rmalization)	(None, 128, 128, 19 2)	768	['mv2_block_4__ex pand[0][0]']
mv2_block_4_expand_swish (Acti vation)	(None, 128, 128, 19 2)	0	['mv2_block_4_exp and_BN[0][0]']
mv2_block_4_pad (ZeroPadding2D)	(None, 129, 129, 19 2)	0	['mv2_block_4_exp and_swish[0][0]']
mv2_block_4_depthwise (Depthwi seConv2D)	(None, 64, 64, 192)	1728	['mv2_block_4_pad [0][0]']

Layer (type)	Output Shape	Param #	Connected to
mv2_block_4_depthwise_BN (Batc hNormalization)	(None, 64, 64, 192)	768	['mv2_block_4_dep thwise[0][0]']
mv2_block_4_depthwise_swish (A ctivation)	(None, 64, 64, 192)	0	['mv2_block_4_dep thwise_BN[0][0]']
mv2_block_4_project (Conv2D)	(None, 64, 64, 64)	12288	['mv2_block_4_dep thwise_swish[0][0]']
mv2_block_4_project_BN (BatchN ormalization)	(None, 64, 64, 64)	256	['mv2_block_4_pro ject[0][0]']
mvit_block_0_conv1 (Conv2D)	(None, 64, 64, 96)	55296	['mv2_block_4_pro ject_BN[0][0]']
mvit_block_0_conv1_BN (BatchNo rmalization)	(None, 64, 64, 96)	384	['mvit_block_0_co nv1[0][0]']
mvit_block_0_conv1_swish (Acti vation)	(None, 64, 64, 96)	0	['mvit_block_0_co nv1_BN[0][0]']
mvit_block_0_conv2 (Conv2D)	(None, 64, 64, 96)	9216	['mvit_block_0_co nv1_swish[0][0]']
mvit_block_0_conv2_BN (BatchNo rmalization)	(None, 64, 64, 96)	384	['mvit_block_0_co nv2[0][0]']
mvit_block_0_conv2_swish (Acti vation)	(None, 64, 64, 96)	0	['mvit_block_0_co nv2_BN[0][0]']
mvit_block_0_unfold (Reshape)	(None, 4, 1024, 96)	0	['mvit_block_0_co nv2_swish[0][0]']
mvit_block_0_transformer_0_LN1 (LayerNormalization)	(None, 4, 1024, 96)	192	['mvit_block_0_un fold[0][0]']
mvit_block_0_transformer_0_att ention (MultiHeadAttention)	(None, 4, 1024, 96)	37248	['mvit_block_0_tr ansformer_0_LN1[0][0]', 'mvit_block_0_tr ansformer_0_LN1[0][0]']
mvit_block_0_transformer_0_add 1 (Add)	(None, 4, 1024, 96)	0	['mvit_block_0_tr ansformer_0_atte ntion[0][0]', 'mvit_block_0_un fold[0][0]']
mvit_block_0_transformer_0_LN2	(None, 4, 1024, 96)	192	['mvit_block_0_tr

Layer (type)	Output Shape	Param #	Connected to
ansformer_0_add1 (LayerNormalization)			[0][0]']
mvit_block_0_transformer_0_ff_ ansformer_0_LN2[0_dense (Dense)	(None, 4, 1024, 192)	18624	['mvit_block_0_tr 0][0]']
mvit_block_0_transformer_0_ff_ ansformer_0_ff_0 0_dropout (Dropout)	(None, 4, 1024, 192)	0	['mvit_block_0_tr _dense[0][0]']
mvit_block_0_transformer_0_ff_ ansformer_0_ff_0 1_dense (Dense)	(None, 4, 1024, 96)	18528	['mvit_block_0_tr _dropout[0][0]']
mvit_block_0_transformer_0_ff_ ansformer_0_ff_1 1_dropout (Dropout)	(None, 4, 1024, 96)	0	['mvit_block_0_tr _dense[0][0]']
mvit_block_0_transformer_0_add ansformer_0_ff_1 2 (Add) ansformer_0_add1	(None, 4, 1024, 96)	0	['mvit_block_0_tr _dropout[0][0]', 'mvit_block_0_tr [0][0]']
mvit_block_0_transformer_1_LN1 ansformer_0_add2 (LayerNormalization)	(None, 4, 1024, 96)	192	['mvit_block_0_tr [0][0]']
mvit_block_0_transformer_1_att ansformer_1_LN1[ention (MultiHeadAttention) ansformer_1_LN1[	(None, 4, 1024, 96)	37248	['mvit_block_0_tr 0][0]', 'mvit_block_0_tr 0][0]']
mvit_block_0_transformer_1_add ansformer_1_atte 1 (Add) ansformer_0_add2	(None, 4, 1024, 96)	0	['mvit_block_0_tr ntion[0][0]', 'mvit_block_0_tr [0][0]']
mvit_block_0_transformer_1_LN2 ansformer_1_add1 (LayerNormalization)	(None, 4, 1024, 96)	192	['mvit_block_0_tr [0][0]']
mvit_block_0_transformer_1_ff_ ansformer_1_LN2[0_dense (Dense)	(None, 4, 1024, 192)	18624	['mvit_block_0_tr 0][0]']
mvit_block_0_transformer_1_ff_ ansformer_1_ff_0 0_dropout (Dropout)	(None, 4, 1024, 192)	0	['mvit_block_0_tr _dense[0][0]']
mvit_block_0_transformer_1_ff_ ansformer_1_ff_0 1_dense (Dense)	(None, 4, 1024, 96)	18528	['mvit_block_0_tr _dropout[0][0]']
mvit_block_0_transformer_1_ff_	(None, 4, 1024, 96)	0	['mvit_block_0_tr

Layer (type)	Output Shape	Param #	Connected to
ansformer_1_ff_1 1_dropout (Dropout)			_dense[0][0]']
mvit_block_0_transformer_1_add ansformer_1_ff_1 2 (Add) ansformer_1_add1	(None, 4, 1024, 96)	0	['mvit_block_0_tr _dropout[0][0]', 'mvit_block_0_tr [0][0]']
mvit_block_0_fold (Reshape) ansformer_1_add2	(None, 64, 64, 96)	0	['mvit_block_0_tr [0][0]']
mvit_block_0_conv3 (Conv2D)	(None, 64, 64, 64)	6144	['mvit_block_0_fo ld[0][0]']
mvit_block_0_conv3_BN (BatchNo nv3[0][0]'] rmalization)	(None, 64, 64, 64)	256	['mvit_block_0_co
mvit_block_0_conv3_swish (Acti nv3_BN[0][0]'] vation)	(None, 64, 64, 64)	0	['mvit_block_0_co
mvit_block_0_concat (Concatena ject_BN[0][0]', te) nv3_swish[0][0]'	(None, 64, 64, 128)	0	['mv2_block_4_pro 'mvit_block_0_co]
mvit_block_0_conv4 (Conv2D)	(None, 64, 64, 64)	73728	['mvit_block_0_co ncat[0][0]']
mvit_block_0_conv4_BN (BatchNo nv4[0][0]'] rmalization)	(None, 64, 64, 64)	256	['mvit_block_0_co
mvit_block_0_conv4_swish (Acti nv4_BN[0][0]'] vation)	(None, 64, 64, 64)	0	['mvit_block_0_co
mv2_block_5__expand (Conv2D) nv4_swish[0][0]'	(None, 64, 64, 320)	20480	['mvit_block_0_co]
mv2_block_5_expand_BN (BatchNo pand[0][0]'] rmalization)	(None, 64, 64, 320)	1280	['mv2_block_5__ex
mv2_block_5_expand_swish (Acti and_BN[0][0]'] vation)	(None, 64, 64, 320)	0	['mv2_block_5_exp
mv2_block_5_pad (ZeroPadding2D and_swish[0][0]')	(None, 65, 65, 320)	0	['mv2_block_5_exp]
mv2_block_5_depthwise (Depthwi [0][0]'] seConv2D)	(None, 32, 32, 320)	2880	['mv2_block_5_pad

mv2_block_5_depthwise_BN (Batc thwise[0][0]') hNormalization)	(None, 32, 32, 320)	1280	['mv2_block_5_dep	
mv2_block_5_depthwise_swish (A thwise_BN[0][0]' ctivation)	(None, 32, 32, 320)	0	['mv2_block_5_dep]	
mv2_block_5_project (Conv2D) thwise_swish[0][	(None, 32, 32, 80)	25600	['mv2_block_5_dep 0]']	
mv2_block_5_project_BN (BatchN ject[0][0]') ormalization)	(None, 32, 32, 80)	320	['mv2_block_5_pro	
mvit_block_1_conv1 (Conv2D) ject_BN[0][0]')	(None, 32, 32, 120)	86400	['mv2_block_5_pro	
mvit_block_1_conv1_BN (BatchNo nv1[0][0]') rmalization)	(None, 32, 32, 120)	480	['mvit_block_1_co	
mvit_block_1_conv1_swish (Acti nv1_BN[0][0]') vation)	(None, 32, 32, 120)	0	['mvit_block_1_co	
mvit_block_1_conv2 (Conv2D) nv1_swish[0][0]'	(None, 32, 32, 120)	14400	['mvit_block_1_co]	
mvit_block_1_conv2_BN (BatchNo nv2[0][0]') rmalization)	(None, 32, 32, 120)	480	['mvit_block_1_co	
mvit_block_1_conv2_swish (Acti nv2_BN[0][0]') vation)	(None, 32, 32, 120)	0	['mvit_block_1_co	
mvit_block_1_unfold (Reshape) nv2_swish[0][0]'	(None, 4, 256, 120)	0	['mvit_block_1_co]	
mvit_block_1_transformer_0_LN1 fold[0][0]') (LayerNormalization)	(None, 4, 256, 120)	240	['mvit_block_1_un	
mvit_block_1_transformer_0_att ansformer_0_LN1[ention (MultiHeadAttention) ansformer_0_LN1[	(None, 4, 256, 120)	58080	['mvit_block_1_tr 0][0]', 'mvit_block_1_tr 0][0]']	
mvit_block_1_transformer_0_add ansformer_0_atte 1 (Add) fold[0][0]')	(None, 4, 256, 120)	0	['mvit_block_1_tr ntion[0][0]', 'mvit_block_1_un	

Layer (type)	Output Shape	Param #	Connected to
mvit_block_1_transformer_0_LN2 (LayerNormalization)	(None, 4, 256, 120)	240	['mvit_block_1_transformer_0_add1[0][0]']
mvit_block_1_transformer_0_ff_0_dense (Dense)	(None, 4, 256, 240)	29040	['mvit_block_1_transformer_0_LN2[0][0]']
mvit_block_1_transformer_0_ff_0_dropout (Dropout)	(None, 4, 256, 240)	0	['mvit_block_1_transformer_0_ff_0_dense[0][0]']
mvit_block_1_transformer_0_ff_1_dense (Dense)	(None, 4, 256, 120)	28920	['mvit_block_1_transformer_0_ff_0_dropout[0][0]']
mvit_block_1_transformer_0_ff_1_dropout (Dropout)	(None, 4, 256, 120)	0	['mvit_block_1_transformer_0_ff_1_dense[0][0]']
mvit_block_1_transformer_0_add2 (Add)	(None, 4, 256, 120)	0	['mvit_block_1_transformer_0_ff_1_dropout[0][0]', 'mvit_block_1_transformer_0_add1[0][0]']
mvit_block_1_transformer_1_LN1 (LayerNormalization)	(None, 4, 256, 120)	240	['mvit_block_1_transformer_0_add2[0][0]']
mvit_block_1_transformer_1_attention (MultiHeadAttention)	(None, 4, 256, 120)	58080	['mvit_block_1_transformer_1_LN1[0][0]', 'mvit_block_1_transformer_1_LN1[0][0]']
mvit_block_1_transformer_1_add1 (Add)	(None, 4, 256, 120)	0	['mvit_block_1_transformer_1_attention[0][0]', 'mvit_block_1_transformer_0_add2[0][0]']
mvit_block_1_transformer_1_LN2 (LayerNormalization)	(None, 4, 256, 120)	240	['mvit_block_1_transformer_1_add1[0][0]']
mvit_block_1_transformer_1_ff_0_dense (Dense)	(None, 4, 256, 240)	29040	['mvit_block_1_transformer_1_LN2[0][0]']
mvit_block_1_transformer_1_ff_0_dropout (Dropout)	(None, 4, 256, 240)	0	['mvit_block_1_transformer_1_ff_0_dense[0][0]']
mvit_block_1_transformer_1_ff_1_dense (Dense)	(None, 4, 256, 120)	28920	['mvit_block_1_transformer_1_ff_0_dropout[0][0]']

Layer (type)	Output Shape	Param #	Connected to
mvit_block_1_transformer_1_ff_ ansformer_1_ff_1 1_dropout (Dropout)	(None, 4, 256, 120)	0	['mvit_block_1_tr _dense[0][0]']
mvit_block_1_transformer_1_add ansformer_1_ff_1 2 (Add) ansformer_1_add1	(None, 4, 256, 120)	0	['mvit_block_1_tr _dropout[0][0]', 'mvit_block_1_tr [0][0]']
mvit_block_1_transformer_2_LN1 ansformer_1_add2 (LayerNormalization)	(None, 4, 256, 120)	240	['mvit_block_1_tr [0][0]']
mvit_block_1_transformer_2_att ansformer_2_LN1[ention (MultiHeadAttention) ansformer_2_LN1[	(None, 4, 256, 120)	58080	['mvit_block_1_tr 0][0]', 'mvit_block_1_tr 0][0]']
mvit_block_1_transformer_2_add ansformer_2_atte 1 (Add) ansformer_1_add2	(None, 4, 256, 120)	0	['mvit_block_1_tr ntion[0][0]', 'mvit_block_1_tr [0][0]']
mvit_block_1_transformer_2_LN2 ansformer_2_add1 (LayerNormalization)	(None, 4, 256, 120)	240	['mvit_block_1_tr [0][0]']
mvit_block_1_transformer_2_ff_ ansformer_2_LN2[0_dense (Dense)	(None, 4, 256, 240)	29040	['mvit_block_1_tr 0][0]']
mvit_block_1_transformer_2_ff_ ansformer_2_ff_0 0_dropout (Dropout)	(None, 4, 256, 240)	0	['mvit_block_1_tr _dense[0][0]']
mvit_block_1_transformer_2_ff_ ansformer_2_ff_0 1_dense (Dense)	(None, 4, 256, 120)	28920	['mvit_block_1_tr _dropout[0][0]']
mvit_block_1_transformer_2_ff_ ansformer_2_ff_1 1_dropout (Dropout)	(None, 4, 256, 120)	0	['mvit_block_1_tr _dense[0][0]']
mvit_block_1_transformer_2_add ansformer_2_ff_1 2 (Add) ansformer_2_add1	(None, 4, 256, 120)	0	['mvit_block_1_tr _dropout[0][0]', 'mvit_block_1_tr [0][0]']
mvit_block_1_transformer_3_LN1 ansformer_2_add2 (LayerNormalization)	(None, 4, 256, 120)	240	['mvit_block_1_tr [0][0]']
mvit_block_1_transformer_3_att	(None, 4, 256, 120)	58080	['mvit_block_1_tr

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ansformer_3_LN1[
  ention (MultiHeadAttention)                                    0][0]',
                                                                  'mvit_block_1_tr
ansformer_3_LN1[

                                                                 0][0]']

 mvit_block_1_transformer_3_add   (None, 4, 256, 120)   0        ['mvit_block_1_tr
ansformer_3_atte
 1 (Add)                                                          ntion[0][0]',
                                                                  'mvit_block_1_tr
ansformer_2_add2

                                                                 [0][0]']

 mvit_block_1_transformer_3_LN2   (None, 4, 256, 120)   240      ['mvit_block_1_tr
ansformer_3_add1
   (LayerNormalization)                                          [0][0]']

 mvit_block_1_transformer_3_ff_   (None, 4, 256, 240)   29040    ['mvit_block_1_tr
ansformer_3_LN2[
 0_dense (Dense)                                                 0][0]']

 mvit_block_1_transformer_3_ff_   (None, 4, 256, 240)   0        ['mvit_block_1_tr
ansformer_3_ff_0
 0_dropout (Dropout)                                             _dense[0][0]']

 mvit_block_1_transformer_3_ff_   (None, 4, 256, 120)   28920    ['mvit_block_1_tr
ansformer_3_ff_0
 1_dense (Dense)                                                 _dropout[0][0]']

 mvit_block_1_transformer_3_ff_   (None, 4, 256, 120)   0        ['mvit_block_1_tr
ansformer_3_ff_1
 1_dropout (Dropout)                                             _dense[0][0]']

 mvit_block_1_transformer_3_add   (None, 4, 256, 120)   0        ['mvit_block_1_tr
ansformer_3_ff_1
 2 (Add)                                                         _dropout[0][0]',
                                                                  'mvit_block_1_tr
ansformer_3_add1

                                                                 [0][0]']

 mvit_block_1_fold (Reshape)      (None, 32, 32, 120)   0        ['mvit_block_1_tr
ansformer_3_add2

                                                                 [0][0]']

 mvit_block_1_conv3 (Conv2D)      (None, 32, 32, 80)    9600     ['mvit_block_1_fo
ld[0][0]']

 mvit_block_1_conv3_BN (BatchNo   (None, 32, 32, 80)    320      ['mvit_block_1_co
nv3[0][0]']
 rmalization)

 mvit_block_1_conv3_swish (Acti   (None, 32, 32, 80)    0        ['mvit_block_1_co
nv3_BN[0][0]']
 vation)

 mvit_block_1_concat (Concatena   (None, 32, 32, 160)   0        ['mv2_block_5_pro
ject_BN[0][0]',
 te)                                                              'mvit_block_1_co
nv3_swish[0][0]'
                                                                 ]
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mvit_block_1_conv4 (Conv2D)	(None, 32, 32, 80)	115200	['mvit_block_1_co ncat[0][0]']
mvit_block_1_conv4_BN (BatchNo rmalization)	(None, 32, 32, 80)	320	['mvit_block_1_co nv4[0][0]']
mvit_block_1_conv4_swish (Acti vation)	(None, 32, 32, 80)	0	['mvit_block_1_co nv4_BN[0][0]']
mv2_block_6__expand (Conv2D)	(None, 32, 32, 384)	30720	['mvit_block_1_co nv4_swish[0][0]']
mv2_block_6_expand_BN (BatchNo rmalization)	(None, 32, 32, 384)	1536	['mv2_block_6__ex pand[0][0]']
mv2_block_6_expand_swish (Acti vation)	(None, 32, 32, 384)	0	['mv2_block_6_exp and_BN[0][0]']
mv2_block_6_depthwise (Depthwi seConv2D)	(None, 32, 32, 384)	3456	['mv2_block_6_exp and_swish[0][0]']
mv2_block_6_depthwise_BN (Batc hNormalization)	(None, 32, 32, 384)	1536	['mv2_block_6_dep thwise[0][0]']
mv2_block_6_depthwise_swish (A ctivation)	(None, 32, 32, 384)	0	['mv2_block_6_dep thwise_BN[0][0]']
mv2_block_6_project (Conv2D)	(None, 32, 32, 96)	36864	['mv2_block_6_dep thwise_swish[0][0]']
mv2_block_6_project_BN (BatchN ormalization)	(None, 32, 32, 96)	384	['mv2_block_6_pro ject[0][0]']
mvit_block_2_conv1 (Conv2D)	(None, 32, 32, 144)	124416	['mv2_block_6_pro ject_BN[0][0]']
mvit_block_2_conv1_BN (BatchNo rmalization)	(None, 32, 32, 144)	576	['mvit_block_2_co nv1[0][0]']
mvit_block_2_conv1_swish (Acti vation)	(None, 32, 32, 144)	0	['mvit_block_2_co nv1_BN[0][0]']
mvit_block_2_conv2 (Conv2D)	(None, 32, 32, 144)	20736	['mvit_block_2_co nv1_swish[0][0]']
mvit_block_2_conv2_BN (BatchNo rmalization)	(None, 32, 32, 144)	576	['mvit_block_2_co nv2[0][0]']

mvit_block_2_conv2_swish (Acti vation)	(None, 32, 32, 144)	0	['mvit_block_2_co nv2_BN[0][0]']
mvit_block_2_unfold (Reshape)	(None, 4, 256, 144)	0	['mvit_block_2_co nv2_swish[0][0]']
mvit_block_2_transformer_0_LN1 (LayerNormalization)	(None, 4, 256, 144)	288	['mvit_block_2_un fold[0][0]']
mvit_block_2_transformer_0_att ention (MultiHeadAttention)	(None, 4, 256, 144)	83520	['mvit_block_2_tr ansformer_0_LN1[0][0]', 'mvit_block_2_tr ansformer_0_LN1[0][0]']
mvit_block_2_transformer_0_add 1 (Add)	(None, 4, 256, 144)	0	['mvit_block_2_tr ansformer_0_atte ntion[0][0]', 'mvit_block_2_un fold[0][0]']
mvit_block_2_transformer_0_LN2 (LayerNormalization)	(None, 4, 256, 144)	288	['mvit_block_2_tr ansformer_0_add1 [0][0]']
mvit_block_2_transformer_0_ff_ 0_dense (Dense)	(None, 4, 256, 288)	41760	['mvit_block_2_tr ansformer_0_LN2[0][0]']
mvit_block_2_transformer_0_ff_ 0_dropout (Dropout)	(None, 4, 256, 288)	0	['mvit_block_2_tr ansformer_0_ff_0 _dense[0][0]']
mvit_block_2_transformer_0_ff_ 1_dense (Dense)	(None, 4, 256, 144)	41616	['mvit_block_2_tr ansformer_0_ff_0 _dropout[0][0]']
mvit_block_2_transformer_0_ff_ 1_dropout (Dropout)	(None, 4, 256, 144)	0	['mvit_block_2_tr ansformer_0_ff_1 _dense[0][0]']
mvit_block_2_transformer_0_add 2 (Add)	(None, 4, 256, 144)	0	['mvit_block_2_tr ansformer_0_ff_1 _dropout[0][0]', 'mvit_block_2_tr ansformer_0_add1 [0][0]']
mvit_block_2_transformer_1_LN1 (LayerNormalization)	(None, 4, 256, 144)	288	['mvit_block_2_tr ansformer_0_add2 [0][0]']
mvit_block_2_transformer_1_att ention (MultiHeadAttention)	(None, 4, 256, 144)	83520	['mvit_block_2_tr ansformer_1_LN1[0][0]', 'mvit_block_2_tr

Layer (type)	Output Shape	Param #	Connected to

ansformer_1_LN1[
0][0]']

| mvit_block_2_transformer_1_add ansformer_1_atte 1 (Add) | (None, 4, 256, 144) | 0 | ['mvit_block_2_tr ntion[0][0]', 'mvit_block_2_tr |

ansformer_0_add2

[0][0]']

| mvit_block_2_transformer_1_LN2 ansformer_1_add1 (LayerNormalization) | (None, 4, 256, 144) | 288 | ['mvit_block_2_tr [0][0]'] |

| mvit_block_2_transformer_1_ff_ ansformer_1_LN2[0_dense (Dense) | (None, 4, 256, 288) | 41760 | ['mvit_block_2_tr 0][0]'] |

| mvit_block_2_transformer_1_ff_ ansformer_1_ff_0 0_dropout (Dropout) | (None, 4, 256, 288) | 0 | ['mvit_block_2_tr _dense[0][0]'] |

| mvit_block_2_transformer_1_ff_ ansformer_1_ff_0 1_dense (Dense) | (None, 4, 256, 144) | 41616 | ['mvit_block_2_tr _dropout[0][0]'] |

| mvit_block_2_transformer_1_ff_ ansformer_1_ff_1 1_dropout (Dropout) | (None, 4, 256, 144) | 0 | ['mvit_block_2_tr _dense[0][0]'] |

| mvit_block_2_transformer_1_add ansformer_1_ff_1 2 (Add) | (None, 4, 256, 144) | 0 | ['mvit_block_2_tr _dropout[0][0]', 'mvit_block_2_tr |

ansformer_1_add1

[0][0]']

| mvit_block_2_transformer_2_LN1 ansformer_1_add2 (LayerNormalization) | (None, 4, 256, 144) | 288 | ['mvit_block_2_tr [0][0]'] |

| mvit_block_2_transformer_2_att ansformer_2_LN1[ention (MultiHeadAttention) | (None, 4, 256, 144) | 83520 | ['mvit_block_2_tr 0][0]', 'mvit_block_2_tr |

ansformer_2_LN1[

0][0]']

| mvit_block_2_transformer_2_add ansformer_2_atte 1 (Add) | (None, 4, 256, 144) | 0 | ['mvit_block_2_tr ntion[0][0]', 'mvit_block_2_tr |

ansformer_1_add2

[0][0]']

| mvit_block_2_transformer_2_LN2 ansformer_2_add1 (LayerNormalization) | (None, 4, 256, 144) | 288 | ['mvit_block_2_tr [0][0]'] |

| mvit_block_2_transformer_2_ff_ ansformer_2_LN2[| (None, 4, 256, 288) | 41760 | ['mvit_block_2_tr |

Layer	Output Shape	Param #	Connected to
0_dense (Dense)			0][0]']
mvit_block_2_transformer_2_ff_ 0 ansformer_2_ff_0 0_dropout (Dropout)	(None, 4, 256, 288)	0	['mvit_block_2_tr _dense[0][0]']
mvit_block_2_transformer_2_ff_ ansformer_2_ff_0 1_dense (Dense)	(None, 4, 256, 144)	41616	['mvit_block_2_tr _dropout[0][0]']
mvit_block_2_transformer_2_ff_ ansformer_2_ff_1 1_dropout (Dropout)	(None, 4, 256, 144)	0	['mvit_block_2_tr _dense[0][0]']
mvit_block_2_transformer_2_add ansformer_2_ff_1 2 (Add) ansformer_2_add1	(None, 4, 256, 144)	0	['mvit_block_2_tr _dropout[0][0]', 'mvit_block_2_tr [0][0]']
mvit_block_2_fold (Reshape) ansformer_2_add2	(None, 32, 32, 144)	0	['mvit_block_2_tr [0][0]']
mvit_block_2_conv3 (Conv2D)	(None, 32, 32, 96)	13824	['mvit_block_2_fo ld[0][0]']
mvit_block_2_conv3_BN (BatchNo nv3[0][0]'] rmalization)	(None, 32, 32, 96)	384	['mvit_block_2_co
mvit_block_2_conv3_swish (Acti nv3_BN[0][0]'] vation)	(None, 32, 32, 96)	0	['mvit_block_2_co
mvit_block_2_concat (Concatena ject_BN[0][0]', te) nv3_swish[0][0]'	(None, 32, 32, 192)	0	['mv2_block_6_pro 'mvit_block_2_co]
mvit_block_2_conv4 (Conv2D)	(None, 32, 32, 96)	165888	['mvit_block_2_co ncat[0][0]']
mvit_block_2_conv4_BN (BatchNo nv4[0][0]'] rmalization)	(None, 32, 32, 96)	384	['mvit_block_2_co
mvit_block_2_conv4_swish (Acti nv4_BN[0][0]'] vation)	(None, 32, 32, 96)	0	['mvit_block_2_co
1x1_conv (Conv2D) nv4_swish[0][0]'	(None, 32, 32, 384)	36864	['mvit_block_2_co]
1x1_conv_BN (BatchNormalizatio [0]'] n)	(None, 32, 32, 384)	1536	['1x1_conv[0] [0]']

```
 1x1_conv_swish (Activation)    (None, 32, 32, 384)  0           ['1x1_conv_BN[0]
[0]']

 aspp1_depthwise (DepthwiseConv (None, 32, 32, 384)  3456        ['1x1_conv_swish
[0][0]']
 2D)

 aspp2_depthwise (DepthwiseConv (None, 32, 32, 384)  3456        ['1x1_conv_swish
[0][0]']
 2D)

 aspp3_depthwise (DepthwiseConv (None, 32, 32, 384)  3456        ['1x1_conv_swish
[0][0]']
 2D)

 average_pooling2d (AveragePool (None, 1, 1, 384)    0           ['1x1_conv_swish
[0][0]']
 ing2D)

 aspp1_depthwise_BN (BatchNorma (None, 32, 32, 384)  1536        ['aspp1_depthwise
[0][0]']
 lization)

 aspp2_depthwise_BN (BatchNorma (None, 32, 32, 384)  1536        ['aspp2_depthwise
[0][0]']
 lization)

 aspp3_depthwise_BN (BatchNorma (None, 32, 32, 384)  1536        ['aspp3_depthwise
[0][0]']
 lization)

 image_pooling (Conv2D)         (None, 1, 1, 256)    98304       ['average_pooling
2d[0][0]']

 re_lu_1 (ReLU)                 (None, 32, 32, 384)  0           ['aspp1_depthwise
_BN[0][0]']

 re_lu_3 (ReLU)                 (None, 32, 32, 384)  0           ['aspp2_depthwise
_BN[0][0]']

 re_lu_5 (ReLU)                 (None, 32, 32, 384)  0           ['aspp3_depthwise
_BN[0][0]']

 image_pooling_BN (BatchNormali (None, 1, 1, 256)    1024        ['image_pooling
[0][0]']
 zation)

 aspp0 (Conv2D)                 (None, 32, 32, 256)  98304       ['1x1_conv_swish
[0][0]']

 aspp1_pointwise (Conv2D)       (None, 32, 32, 256)  98304       ['re_lu_1[0][0]']

 aspp2_pointwise (Conv2D)       (None, 32, 32, 256)  98304       ['re_lu_3[0][0]']

 aspp3_pointwise (Conv2D)       (None, 32, 32, 256)  98304       ['re_lu_5[0][0]']

 re_lu (ReLU)                   (None, 1, 1, 256)    0           ['image_pooling_B
N[0][0]']

 aspp0_BN (BatchNormalization)  (None, 32, 32, 256)  1024        ['aspp0[0][0]']
```

Layer (type)	Output Shape	Param #	Connected to
aspp1_pointwise_BN (BatchNorma lization)	(None, 32, 32, 256)	1024	['aspp1_pointwise [0][0]']
aspp2_pointwise_BN (BatchNorma lization)	(None, 32, 32, 256)	1024	['aspp2_pointwise [0][0]']
aspp3_pointwise_BN (BatchNorma lization)	(None, 32, 32, 256)	1024	['aspp3_pointwise [0][0]']
aspp_resize (Lambda)	(None, 32, 32, 256)	0	['re_lu[0][0]']
aspp0_activation (ReLU)	(None, 32, 32, 256)	0	['aspp0_BN[0] [0]']
re_lu_2 (ReLU)	(None, 32, 32, 256)	0	['aspp1_pointwise _BN[0][0]']
re_lu_4 (ReLU)	(None, 32, 32, 256)	0	['aspp2_pointwise _BN[0][0]']
re_lu_6 (ReLU)	(None, 32, 32, 256)	0	['aspp3_pointwise _BN[0][0]']
concatenate (Concatenate)	(None, 32, 32, 1280)	0	['aspp_resize[0] [0]', 'aspp0_activatio n[0][0]', 're_lu_2[0][0]', 're_lu_4[0][0]', 're_lu_6[0][0]']
concat_projection (Conv2D)	(None, 32, 32, 256)	327680	['concatenate[0] [0]']
concat_projection_BN (BatchNor malization)	(None, 32, 32, 256)	1024	['concat_projecti on[0][0]']
re_lu_7 (ReLU)	(None, 32, 32, 256)	0	['concat_projecti on_BN[0][0]']
feature_projection0 (Conv2D)	(None, 128, 128, 48)	2304	['mv2_block_3_add [0][0]']
dropout (Dropout)	(None, 32, 32, 256)	0	['re_lu_7[0][0]']
feature_projection0_BN (BatchN ormalization)	(None, 128, 128, 48)	192	['feature_project ion0[0][0]']
decoder_resize (Lambda)	(None, 128, 128, 25 6)	0	['dropout[0][0]']
re_lu_8 (ReLU)	(None, 128, 128, 48)	0	['feature_project ion0_BN[0][0]']

Layer (type)	Output Shape	Param #	Connected to
concatenate_1 (Concatenate)	(None, 128, 128, 30 4)	0	['decoder_resize [0][0]', 're_lu_8[0][0]']
decoder_conv0_depthwise (Depth wiseConv2D)	(None, 128, 128, 30 4)	2736	['concatenate_1 [0][0]']
decoder_conv0_depthwise_BN (Ba tchNormalization)	(None, 128, 128, 30 4)	1216	['decoder_conv0_d epthwise[0][0]']
re_lu_9 (ReLU)	(None, 128, 128, 30 4)	0	['decoder_conv0_d epthwise_BN[0][0]']
decoder_conv0_pointwise (Conv2 D)	(None, 128, 128, 25 6)	77824	['re_lu_9[0][0]']
decoder_conv0_pointwise_BN (Ba tchNormalization)	(None, 128, 128, 25 6)	1024	['decoder_conv0_p ointwise[0][0]']
re_lu_10 (ReLU)	(None, 128, 128, 25 6)	0	['decoder_conv0_p ointwise_BN[0][0]']
decoder_conv1_depthwise (Depth wiseConv2D)	(None, 128, 128, 25 6)	2304	['re_lu_10[0] [0]']
decoder_conv1_depthwise_BN (Ba tchNormalization)	(None, 128, 128, 25 6)	1024	['decoder_conv1_d epthwise[0][0]']
re_lu_11 (ReLU)	(None, 128, 128, 25 6)	0	['decoder_conv1_d epthwise_BN[0][0]']
decoder_conv1_pointwise (Conv2 D)	(None, 128, 128, 25 6)	65536	['re_lu_11[0] [0]']
decoder_conv1_pointwise_BN (Ba tchNormalization)	(None, 128, 128, 25 6)	1024	['decoder_conv1_p ointwise[0][0]']
re_lu_12 (ReLU)	(None, 128, 128, 25 6)	0	['decoder_conv1_p ointwise_BN[0][0]']
logits_semantic (Conv2D)	(None, 128, 128, 1)	257	['re_lu_12[0] [0]']
pred_resize (Lambda)	(None, 512, 512, 1)	0	['logits_semantic [0][0]']
reshape (Reshape)	(None, 512, 512, 1)	0	['pred_resize[0] [0]']
tf.math.sigmoid (TFOpLambda)	(None, 512, 512, 1)	0	['reshape[0][0]']

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================================================================================
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Total params: 3,064,401
Trainable params: 3,046,865
Non-trainable params: 17,536
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_____
```