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## ✓ Hutton Rock Dataset

Total Number of images: 505

- The number of images in granite class are: 187
- The number of images in basalt class are: 130
- The number of images in coal class are: 85
- The number of images in andesite class are: 103

378 images are used for training and 127 images are used for testing.

```
from google.colab import drive
drive.mount('/content/drive')
```

 Mounted at /content/drive


```
import tensorflow as tf
print(tf.__version__)
```

```
from tensorflow import keras
tf.random.set_seed(42)
```

```
import numpy as np
np.random.seed(42)
```

```
import matplotlib.pyplot as plt
%matplotlib inline
```

```
import glob
import PIL
from PIL import Image
```

 2.17.1

```
imgFiles = glob.glob("/content/drive/MyDrive/DLPROJECT/Hutton_Rock/**/*.jpg")
```

```
print(len(imgFiles))
```

 508

```
X = []
y = []
```

```
for fName in imgFiles:
```

```
    # Prepare the dataset and populate X and y
    X_i = Image.open(fName)
    X_i = X_i.resize((299,299))
    if X_i.mode != 'RGB':
        X_i = X_i.convert('RGB')
    X_i = np.array(X_i) / 255.0

    X.append(X_i)
```

```
    label = fName.split("/")
    y_i = label[-2]
```

```
    y.append(y_i)
```

```
for class_label in set(y):
    count = 0
    for image_label in y:
        if class_label == image_label:
            count += 1
    print(f"The number of images in {class_label} class are: {count}")
```

```
➞ The number of images in andesite class are: 103
   The number of images in basalt class are: 130
   The number of images in coal class are: 85
   The number of images in granite class are: 190
```

```
from sklearn.preprocessing import LabelEncoder
lEncoder = LabelEncoder()
y = lEncoder.fit_transform(y)
```

```
print(set(y))
print(lEncoder.classes_)
```

```
X = np.array(X)
y = np.array(y)
```

```
print(X.shape)
print(y.shape)
```

```
➞ {0, 1, 2, 3}
   ['andesite' 'basalt' 'coal' 'granite']
   (508, 299, 299, 3)
   (508,)
```

```
from sklearn.model_selection import train_test_split
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.25,
                                                    stratify=y, random_state=42)
```

```
print("X_train_shape: {}".format(X_train.shape))
print("X_test_shape: {}".format(X_test.shape))
```

```
↗ X_train_shape: (381, 299, 299, 3)
  X_test_shape: (127, 299, 299, 3)
```

```
mu = X_train.mean()
std = X_train.std()
```

```
X_train_std = (X_train-mu)/std # Apply feature scaling to X_train
X_test_std = (X_test-mu)/std # Apply feature scaling to X_test
```

```
InceptionV2=keras.applications.InceptionResNetV2(
    include_top=False,
)
```

```
↗ Downloading data from https://storage.googleapis.com/tensorflow/keras-applications/inception\_v2/219055592/219055592 1s 0us/step
```



```
base_model1_TL = keras.applications.InceptionResNetV2(weights='imagenet',
    include_top=False)
```

```
for layer in base_model1_TL.layers:
    layer.trainable = False
```

```
# Adding classifier
```

```
global_pool = keras.layers.GlobalAveragePooling2D()(base_model1_TL.output)
```

```
Layer_Normalization = keras.layers.BatchNormalization()(global_pool)
Drop_out = keras.layers.Dropout(rate=0.25)(Layer_Normalization)
```

```
output_ = keras.layers.Dense(units=4, activation='softmax')(Drop_out)
```

```
model1_TL = keras.models.Model(inputs=[base_model1_TL.input], outputs=[output_])
```

```
model1_TL.summary()
```



Model: "functional"

Layer (type)	Output Shape	Param #	Connected
input_layer_1 (InputLayer)	(None, None, None, 3)	0	-
conv2d_203 (Conv2D)	(None, None, None, 32)	864	input_laye
batch_normalization_203 (BatchNormalization)	(None, None, None, 32)	96	conv2d_203
activation_203 (Activation)	(None, None, None, 32)	0	batch_norm
conv2d_204 (Conv2D)	(None, None, None, 32)	9,216	activation
batch_normalization_204 (BatchNormalization)	(None, None, None, 32)	96	conv2d_204
activation_204 (Activation)	(None, None, None, 32)	0	batch_norm
conv2d_205 (Conv2D)	(None, None, None, 64)	18,432	activation
batch_normalization_205 (BatchNormalization)	(None, None, None, 64)	192	conv2d_205
activation_205 (Activation)	(None, None, None, 64)	0	batch_norm
max_pooling2d_4 (MaxPooling2D)	(None, None, None, 64)	0	activation
conv2d_206 (Conv2D)	(None, None, None, 80)	5,120	max_poolin
batch_normalization_206 (BatchNormalization)	(None, None, None, 80)	240	conv2d_206
activation_206 (Activation)	(None, None, None, 80)	0	batch_norm
conv2d_207 (Conv2D)	(None, None, None, 192)	138,240	activation
batch_normalization_207 (BatchNormalization)	(None, None, None, 192)	576	conv2d_207
activation_207 (Activation)	(None, None, None, 192)	0	batch_norm
max_pooling2d_5 (MaxPooling2D)	(None, None, None, 192)	0	activation
conv2d_211 (Conv2D)	(None, None, None, 64)	12,288	max_poolin
batch_normalization_211 (BatchNormalization)	(None, None, None, 64)	192	conv2d_211
activation_211 (Activation)	(None, None, None, 64)	0	batch_norm

conv2d_209 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 48)	9,216	max_poolin
conv2d_212 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	55,296	activation
batch_normalization_209 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 48)	144	conv2d_209
batch_normalization_212 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	288	conv2d_212
activation_209 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 48)	0	batch_norm
activation_212 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	0	batch_norm
average_pooling2d_1 ( <a href="#">AveragePooling2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 192)	0	max_poolin
conv2d_208 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	18,432	max_poolin
conv2d_210 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	76,800	activation
conv2d_213 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	82,944	activation
conv2d_214 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	12,288	average_po
batch_normalization_208 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	288	conv2d_208
batch_normalization_210 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	192	conv2d_210
batch_normalization_213 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	288	conv2d_213
batch_normalization_214 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	192	conv2d_214
activation_208 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	0	batch_norm
activation_210 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	0	batch_norm
activation_213 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 96)	0	batch_norm
activation_214 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	0	batch_norm
mixed_5b ( <a href="#">Concatenate</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 320)	0	activation activation activation
conv2d_218 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	10,240	mixed_5b[0
batch_normalization_218 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	96	conv2d_218

activation_218 (Activation)	(None, None, None, 32)	0	batch_norm
conv2d_216 (Conv2D)	(None, None, None, 32)	10,240	mixed_5b[0
conv2d_219 (Conv2D)	(None, None, None, 48)	13,824	activation
batch_normalization_216 (BatchNormalization)	(None, None, None, 32)	96	conv2d_216
batch_normalization_219 (BatchNormalization)	(None, None, None, 48)	144	conv2d_219
activation_216 (Activation)	(None, None, None, 32)	0	batch_norm
activation_219 (Activation)	(None, None, None, 48)	0	batch_norm
conv2d_215 (Conv2D)	(None, None, None, 32)	10,240	mixed_5b[0
conv2d_217 (Conv2D)	(None, None, None, 32)	9,216	activation
conv2d_220 (Conv2D)	(None, None, None, 64)	27,648	activation
batch_normalization_215 (BatchNormalization)	(None, None, None, 32)	96	conv2d_215
batch_normalization_217 (BatchNormalization)	(None, None, None, 32)	96	conv2d_217
batch_normalization_220 (BatchNormalization)	(None, None, None, 64)	192	conv2d_220
activation_215 (Activation)	(None, None, None, 32)	0	batch_norm
activation_217 (Activation)	(None, None, None, 32)	0	batch_norm
activation_220 (Activation)	(None, None, None, 64)	0	batch_norm
block35_1_mixed (Concatenate)	(None, None, None, 128)	0	activation activation activation
block35_1_conv (Conv2D)	(None, None, None, 320)	41,280	block35_1_
custom_scale_layer_40 (CustomScaleLayer)	(None, None, None, 320)	0	mixed_5b[0 block35_1_
block35_1_ac (Activation)	(None, None, None, 320)	0	custom_sca
conv2d_224 (Conv2D)	(None, None, None, 32)	10,240	block35_1_
batch_normalization_224 (BatchNormalization)	(None, None, None, 32)	96	conv2d_224
activation_224 (Activation)	(None, None, None, 32)	0	batch_norm

activation_224 (Activation)	(None, None, None, 32)	0	batch_norm
conv2d_222 (Conv2D)	(None, None, None, 32)	10,240	block35_1_
conv2d_225 (Conv2D)	(None, None, None, 48)	13,824	activation
batch_normalization_222 (BatchNormalization)	(None, None, None, 32)	96	conv2d_222
batch_normalization_225 (BatchNormalization)	(None, None, None, 48)	144	conv2d_225
activation_222 (Activation)	(None, None, None, 32)	0	batch_norm
activation_225 (Activation)	(None, None, None, 48)	0	batch_norm
conv2d_221 (Conv2D)	(None, None, None, 32)	10,240	block35_1_
conv2d_223 (Conv2D)	(None, None, None, 32)	9,216	activation
conv2d_226 (Conv2D)	(None, None, None, 64)	27,648	activation
batch_normalization_221 (BatchNormalization)	(None, None, None, 32)	96	conv2d_221
batch_normalization_223 (BatchNormalization)	(None, None, None, 32)	96	conv2d_223
batch_normalization_226 (BatchNormalization)	(None, None, None, 64)	192	conv2d_226
activation_221 (Activation)	(None, None, None, 32)	0	batch_norm
activation_223 (Activation)	(None, None, None, 32)	0	batch_norm
activation_226 (Activation)	(None, None, None, 64)	0	batch_norm
block35_2_mixed (Concatenate)	(None, None, None, 128)	0	activation activation activation
block35_2_conv (Conv2D)	(None, None, None, 320)	41,280	block35_2_
custom_scale_layer_41 (CustomScaleLayer)	(None, None, None, 320)	0	block35_1_ block35_2_
block35_2_ac (Activation)	(None, None, None, 320)	0	custom_sca
conv2d_230 (Conv2D)	(None, None, None, 32)	10,240	block35_2_
batch_normalization_230 (BatchNormalization)	(None, None, None, 32)	96	conv2d_230
activation_230	(None, None, None, 32)	0	batch_norm

(Activation)			
conv2d_228 (Conv2D)	(None, None, None, 32)	10,240	block35_2_
conv2d_231 (Conv2D)	(None, None, None, 48)	13,824	activation
batch_normalization_228 (BatchNormalization)	(None, None, None, 32)	96	conv2d_228
batch_normalization_231 (BatchNormalization)	(None, None, None, 48)	144	conv2d_231
activation_228 (Activation)	(None, None, None, 32)	0	batch_norm
activation_231 (Activation)	(None, None, None, 48)	0	batch_norm
conv2d_227 (Conv2D)	(None, None, None, 32)	10,240	block35_2_
conv2d_229 (Conv2D)	(None, None, None, 32)	9,216	activation
conv2d_232 (Conv2D)	(None, None, None, 64)	27,648	activation
batch_normalization_227 (BatchNormalization)	(None, None, None, 32)	96	conv2d_227
batch_normalization_229 (BatchNormalization)	(None, None, None, 32)	96	conv2d_229
batch_normalization_232 (BatchNormalization)	(None, None, None, 64)	192	conv2d_232
activation_227 (Activation)	(None, None, None, 32)	0	batch_norm
activation_229 (Activation)	(None, None, None, 32)	0	batch_norm
activation_232 (Activation)	(None, None, None, 64)	0	batch_norm
block35_3_mixed (Concatenate)	(None, None, None, 128)	0	activation activation activation
block35_3_conv (Conv2D)	(None, None, None, 320)	41,280	block35_3_
custom_scale_layer_42 (CustomScaleLayer)	(None, None, None, 320)	0	block35_2_ block35_3_
block35_3_ac (Activation)	(None, None, None, 320)	0	custom_sca
conv2d_236 (Conv2D)	(None, None, None, 32)	10,240	block35_3_
batch_normalization_236 (BatchNormalization)	(None, None, None, 32)	96	conv2d_236
activation_236 (Activation)	(None, None, None, 32)	0	batch_norm



conv2d_234 (Conv2D)	(None, None, None, 32)	10,240	block35_3_
conv2d_237 (Conv2D)	(None, None, None, 48)	13,824	activation
batch_normalization_234 (BatchNormalization)	(None, None, None, 32)	96	conv2d_234
batch_normalization_237 (BatchNormalization)	(None, None, None, 48)	144	conv2d_237
activation_234 (Activation)	(None, None, None, 32)	0	batch_norm
activation_237 (Activation)	(None, None, None, 48)	0	batch_norm
conv2d_233 (Conv2D)	(None, None, None, 32)	10,240	block35_3_
conv2d_235 (Conv2D)	(None, None, None, 32)	9,216	activation
conv2d_238 (Conv2D)	(None, None, None, 64)	27,648	activation
batch_normalization_233 (BatchNormalization)	(None, None, None, 32)	96	conv2d_233
batch_normalization_235 (BatchNormalization)	(None, None, None, 32)	96	conv2d_235
batch_normalization_238 (BatchNormalization)	(None, None, None, 64)	192	conv2d_238
activation_233 (Activation)	(None, None, None, 32)	0	batch_norm
activation_235 (Activation)	(None, None, None, 32)	0	batch_norm
activation_238 (Activation)	(None, None, None, 64)	0	batch_norm
block35_4_mixed (Concatenate)	(None, None, None, 128)	0	activation activation activation
block35_4_conv (Conv2D)	(None, None, None, 320)	41,280	block35_4_
custom_scale_layer_43 (CustomScaleLayer)	(None, None, None, 320)	0	block35_3_ block35_4_
block35_4_ac (Activation)	(None, None, None, 320)	0	custom_sca
conv2d_242 (Conv2D)	(None, None, None, 32)	10,240	block35_4_
batch_normalization_242 (BatchNormalization)	(None, None, None, 32)	96	conv2d_242
activation_242 (Activation)	(None, None, None, 32)	0	batch_norm

conv2d_240 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_4_
conv2d_243 ( <a href="#">Conv2D</a> )	(None, None, None, 48)	13,824	activation
batch_normalization_240 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_240
batch_normalization_243 ( <a href="#">BatchNormalization</a> )	(None, None, None, 48)	144	conv2d_243
activation_240 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_243 ( <a href="#">Activation</a> )	(None, None, None, 48)	0	batch_norm
conv2d_239 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_4_
conv2d_241 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	9,216	activation
conv2d_244 ( <a href="#">Conv2D</a> )	(None, None, None, 64)	27,648	activation
batch_normalization_239 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_239
batch_normalization_241 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_241
batch_normalization_244 ( <a href="#">BatchNormalization</a> )	(None, None, None, 64)	192	conv2d_244
activation_239 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_241 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_244 ( <a href="#">Activation</a> )	(None, None, None, 64)	0	batch_norm
block35_5_mixed ( <a href="#">Concatenate</a> )	(None, None, None, 128)	0	activation activation activation
block35_5_conv ( <a href="#">Conv2D</a> )	(None, None, None, 320)	41,280	block35_5_
custom_scale_layer_44 ( <a href="#">CustomScaleLayer</a> )	(None, None, None, 320)	0	block35_4_ block35_5_
block35_5_ac ( <a href="#">Activation</a> )	(None, None, None, 320)	0	custom_sca
conv2d_248 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_5_
batch_normalization_248 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_248
activation_248 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm

conv2d_246 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_5_
conv2d_249 ( <a href="#">Conv2D</a> )	(None, None, None, 48)	13,824	activation
batch_normalization_246 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_246
batch_normalization_249 ( <a href="#">BatchNormalization</a> )	(None, None, None, 48)	144	conv2d_249
activation_246 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_249 ( <a href="#">Activation</a> )	(None, None, None, 48)	0	batch_norm
conv2d_245 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_5_
conv2d_247 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	9,216	activation
conv2d_250 ( <a href="#">Conv2D</a> )	(None, None, None, 64)	27,648	activation
batch_normalization_245 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_245
batch_normalization_247 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_247
batch_normalization_250 ( <a href="#">BatchNormalization</a> )	(None, None, None, 64)	192	conv2d_250
activation_245 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_247 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_250 ( <a href="#">Activation</a> )	(None, None, None, 64)	0	batch_norm
block35_6_mixed ( <a href="#">Concatenate</a> )	(None, None, None, 128)	0	activation activation activation
block35_6_conv ( <a href="#">Conv2D</a> )	(None, None, None, 320)	41,280	block35_6_
custom_scale_layer_45 ( <a href="#">CustomScaleLayer</a> )	(None, None, None, 320)	0	block35_5_ block35_6_
block35_6_ac ( <a href="#">Activation</a> )	(None, None, None, 320)	0	custom_sca
conv2d_254 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_6_
batch_normalization_254 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_254
activation_254 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
conv2d_252 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_6_

conv2d_255 (Conv2D)	(None, None, None, 48)	13,824	activation
batch_normalization_252 (BatchNormalization)	(None, None, None, 32)	96	conv2d_252
batch_normalization_255 (BatchNormalization)	(None, None, None, 48)	144	conv2d_255
activation_252 (Activation)	(None, None, None, 32)	0	batch_norm
activation_255 (Activation)	(None, None, None, 48)	0	batch_norm
conv2d_251 (Conv2D)	(None, None, None, 32)	10,240	block35_6_
conv2d_253 (Conv2D)	(None, None, None, 32)	9,216	activation
conv2d_256 (Conv2D)	(None, None, None, 64)	27,648	activation
batch_normalization_251 (BatchNormalization)	(None, None, None, 32)	96	conv2d_251
batch_normalization_253 (BatchNormalization)	(None, None, None, 32)	96	conv2d_253
batch_normalization_256 (BatchNormalization)	(None, None, None, 64)	192	conv2d_256
activation_251 (Activation)	(None, None, None, 32)	0	batch_norm
activation_253 (Activation)	(None, None, None, 32)	0	batch_norm
activation_256 (Activation)	(None, None, None, 64)	0	batch_norm
block35_7_mixed (Concatenate)	(None, None, None, 128)	0	activation activation activation
block35_7_conv (Conv2D)	(None, None, None, 320)	41,280	block35_7_
custom_scale_layer_46 (CustomScaleLayer)	(None, None, None, 320)	0	block35_6_ block35_7_
block35_7_ac (Activation)	(None, None, None, 320)	0	custom_sca
conv2d_260 (Conv2D)	(None, None, None, 32)	10,240	block35_7_
batch_normalization_260 (BatchNormalization)	(None, None, None, 32)	96	conv2d_260
activation_260 (Activation)	(None, None, None, 32)	0	batch_norm
conv2d_258 (Conv2D)	(None, None, None, 32)	10,240	block35_7_

conv2d_261 ( <a href="#">Conv2D</a> )	(None, None, None, 48)	13,824	activation
batch_normalization_258 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_258
batch_normalization_261 ( <a href="#">BatchNormalization</a> )	(None, None, None, 48)	144	conv2d_261
activation_258 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_261 ( <a href="#">Activation</a> )	(None, None, None, 48)	0	batch_norm
conv2d_257 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_7_
conv2d_259 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	9,216	activation
conv2d_262 ( <a href="#">Conv2D</a> )	(None, None, None, 64)	27,648	activation
batch_normalization_257 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_257
batch_normalization_259 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_259
batch_normalization_262 ( <a href="#">BatchNormalization</a> )	(None, None, None, 64)	192	conv2d_262
activation_257 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_259 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
activation_262 ( <a href="#">Activation</a> )	(None, None, None, 64)	0	batch_norm
block35_8_mixed ( <a href="#">Concatenate</a> )	(None, None, None, 128)	0	activation activation activation
block35_8_conv ( <a href="#">Conv2D</a> )	(None, None, None, 320)	41,280	block35_8_
custom_scale_layer_47 ( <a href="#">CustomScaleLayer</a> )	(None, None, None, 320)	0	block35_7_ block35_8_
block35_8_ac ( <a href="#">Activation</a> )	(None, None, None, 320)	0	custom_sca
conv2d_266 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_8_
batch_normalization_266 ( <a href="#">BatchNormalization</a> )	(None, None, None, 32)	96	conv2d_266
activation_266 ( <a href="#">Activation</a> )	(None, None, None, 32)	0	batch_norm
conv2d_264 ( <a href="#">Conv2D</a> )	(None, None, None, 32)	10,240	block35_8_

conv2d_267 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 48)	13,824	activation
batch_normalization_264 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	96	conv2d_264
batch_normalization_267 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 48)	144	conv2d_267
activation_264 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	0	batch_norm
activation_267 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 48)	0	batch_norm
conv2d_263 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	10,240	block35_8_
conv2d_265 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	9,216	activation
conv2d_268 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	27,648	activation
batch_normalization_263 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	96	conv2d_263
batch_normalization_265 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	96	conv2d_265
batch_normalization_268 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	192	conv2d_268
activation_263 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	0	batch_norm
activation_265 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	0	batch_norm
activation_268 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 64)	0	batch_norm
block35_9_mixed ( <a href="#">Concatenate</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 128)	0	activation activation activation
block35_9_conv ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 320)	41,280	block35_9_
custom_scale_layer_48 ( <a href="#">CustomScaleLayer</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 320)	0	block35_8_ block35_9_
block35_9_ac ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 320)	0	custom_sca
conv2d_272 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	10,240	block35_9_
batch_normalization_272 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	96	conv2d_272
activation_272 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	0	batch_norm
conv2d_270 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 32)	10,240	block35_9_
conv2d_273 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , 48)	13,824	activation

batch_normalization_270 (BatchNormalization)	(None, None, None, 32)	96	conv2d_270
batch_normalization_273 (BatchNormalization)	(None, None, None, 48)	144	conv2d_273
activation_270 (Activation)	(None, None, None, 32)	0	batch_norm
activation_273 (Activation)	(None, None, None, 48)	0	batch_norm
conv2d_269 (Conv2D)	(None, None, None, 32)	10,240	block35_9_
conv2d_271 (Conv2D)	(None, None, None, 32)	9,216	activation
conv2d_274 (Conv2D)	(None, None, None, 64)	27,648	activation
batch_normalization_269 (BatchNormalization)	(None, None, None, 32)	96	conv2d_269
batch_normalization_271 (BatchNormalization)	(None, None, None, 32)	96	conv2d_271
batch_normalization_274 (BatchNormalization)	(None, None, None, 64)	192	conv2d_274
activation_269 (Activation)	(None, None, None, 32)	0	batch_norm
activation_271 (Activation)	(None, None, None, 32)	0	batch_norm
activation_274 (Activation)	(None, None, None, 64)	0	batch_norm
block35_10_mixed (Concatenate)	(None, None, None, 128)	0	activation activation activation
block35_10_conv (Conv2D)	(None, None, None, 320)	41,280	block35_10
custom_scale_layer_49 (CustomScaleLayer)	(None, None, None, 320)	0	block35_9_ block35_10
block35_10_ac (Activation)	(None, None, None, 320)	0	custom_sca
conv2d_276 (Conv2D)	(None, None, None, 256)	81,920	block35_10
batch_normalization_276 (BatchNormalization)	(None, None, None, 256)	768	conv2d_276
activation_276 (Activation)	(None, None, None, 256)	0	batch_norm
conv2d_277 (Conv2D)	(None, None, None, 256)	589,824	activation

batch_normalization_277 (BatchNormalization)	(None, None, None, 256)	768	conv2d_277
activation_277 (Activation)	(None, None, None, 256)	0	batch_norm
conv2d_275 (Conv2D)	(None, None, None, 384)	1,105,920	block35_10
conv2d_278 (Conv2D)	(None, None, None, 384)	884,736	activation
batch_normalization_275 (BatchNormalization)	(None, None, None, 384)	1,152	conv2d_275
batch_normalization_278 (BatchNormalization)	(None, None, None, 384)	1,152	conv2d_278
activation_275 (Activation)	(None, None, None, 384)	0	batch_norm
activation_278 (Activation)	(None, None, None, 384)	0	batch_norm
max_pooling2d_6 (MaxPooling2D)	(None, None, None, 320)	0	block35_10
mixed_6a (Concatenate)	(None, None, None, 1088)	0	activation activation max_poolin
conv2d_280 (Conv2D)	(None, None, None, 128)	139,264	mixed_6a[0
batch_normalization_280 (BatchNormalization)	(None, None, None, 128)	384	conv2d_280
activation_280 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_281 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_281 (BatchNormalization)	(None, None, None, 160)	480	conv2d_281
activation_281 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_279 (Conv2D)	(None, None, None, 192)	208,896	mixed_6a[0
conv2d_282 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_279 (BatchNormalization)	(None, None, None, 192)	576	conv2d_279
batch_normalization_282 (BatchNormalization)	(None, None, None, 192)	576	conv2d_282



activation_279 (Activation)	(None, None, None, 192)	0	batch_norm
activation_282 (Activation)	(None, None, None, 192)	0	batch_norm
block17_1_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_1_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_1_
custom_scale_layer_50 (CustomScaleLayer)	(None, None, None, 1088)	0	mixed_6a[0 block17_1_
block17_1_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_284 (Conv2D)	(None, None, None, 128)	139,264	block17_1_
batch_normalization_284 (BatchNormalization)	(None, None, None, 128)	384	conv2d_284
activation_284 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_285 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_285 (BatchNormalization)	(None, None, None, 160)	480	conv2d_285
activation_285 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_283 (Conv2D)	(None, None, None, 192)	208,896	block17_1_
conv2d_286 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_283 (BatchNormalization)	(None, None, None, 192)	576	conv2d_283
batch_normalization_286 (BatchNormalization)	(None, None, None, 192)	576	conv2d_286
activation_283 (Activation)	(None, None, None, 192)	0	batch_norm
activation_286 (Activation)	(None, None, None, 192)	0	batch_norm
block17_2_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_2_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_2_
custom_scale_layer_51 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_1_ block17_2_

(CustomScaleLayer)	(None, None, None, 1088)	0	custom_sca
block17_2_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_288 (Conv2D)	(None, None, None, 128)	139,264	block17_2_
batch_normalization_288 (BatchNormalization)	(None, None, None, 128)	384	conv2d_288
activation_288 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_289 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_289 (BatchNormalization)	(None, None, None, 160)	480	conv2d_289
activation_289 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_287 (Conv2D)	(None, None, None, 192)	208,896	block17_2_
conv2d_290 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_287 (BatchNormalization)	(None, None, None, 192)	576	conv2d_287
batch_normalization_290 (BatchNormalization)	(None, None, None, 192)	576	conv2d_290
activation_287 (Activation)	(None, None, None, 192)	0	batch_norm
activation_290 (Activation)	(None, None, None, 192)	0	batch_norm
block17_3_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_3_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_3_
custom_scale_layer_52 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_2_ block17_3_
block17_3_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_292 (Conv2D)	(None, None, None, 128)	139,264	block17_3_
batch_normalization_292 (BatchNormalization)	(None, None, None, 128)	384	conv2d_292
activation_292 (Activation)	(None, None, None, 128)	0	batch_norm

conv2d_293 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">143,360</a>	activation
batch_normalization_293 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">480</a>	conv2d_293
activation_293 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">0</a>	batch_norm
conv2d_291 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">208,896</a>	block17_3_
conv2d_294 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">215,040</a>	activation
batch_normalization_291 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">576</a>	conv2d_291
batch_normalization_294 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">576</a>	conv2d_294
activation_291 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">0</a>	batch_norm
activation_294 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">0</a>	batch_norm
block17_4_mixed ( <a href="#">Concatenate</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">384</a> )	<a href="#">0</a>	activation activation
block17_4_conv ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">1088</a> )	<a href="#">418,880</a>	block17_4_
custom_scale_layer_53 ( <a href="#">CustomScaleLayer</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">1088</a> )	<a href="#">0</a>	block17_3_ block17_4_
block17_4_ac ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">1088</a> )	<a href="#">0</a>	custom_sca
conv2d_296 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">128</a> )	<a href="#">139,264</a>	block17_4_
batch_normalization_296 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">128</a> )	<a href="#">384</a>	conv2d_296
activation_296 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">128</a> )	<a href="#">0</a>	batch_norm
conv2d_297 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">143,360</a>	activation
batch_normalization_297 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">480</a>	conv2d_297
activation_297 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">0</a>	batch_norm
conv2d_295 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">208,896</a>	block17_4_
conv2d_298 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">215,040</a>	activation

batch_normalization_295 (BatchNormalization)	(None, None, None, 192)	576	conv2d_295
batch_normalization_298 (BatchNormalization)	(None, None, None, 192)	576	conv2d_298
activation_295 (Activation)	(None, None, None, 192)	0	batch_norm
activation_298 (Activation)	(None, None, None, 192)	0	batch_norm
block17_5_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_5_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_5_
custom_scale_layer_54 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_4_ block17_5_
block17_5_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_300 (Conv2D)	(None, None, None, 128)	139,264	block17_5_
batch_normalization_300 (BatchNormalization)	(None, None, None, 128)	384	conv2d_300
activation_300 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_301 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_301 (BatchNormalization)	(None, None, None, 160)	480	conv2d_301
activation_301 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_299 (Conv2D)	(None, None, None, 192)	208,896	block17_5_
conv2d_302 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_299 (BatchNormalization)	(None, None, None, 192)	576	conv2d_299
batch_normalization_302 (BatchNormalization)	(None, None, None, 192)	576	conv2d_302
activation_299 (Activation)	(None, None, None, 192)	0	batch_norm
activation_302 (Activation)	(None, None, None, 192)	0	batch_norm
block17_5_mixed	(None, None, None, 384)	0	activation

block17_6_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_6_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_6_
custom_scale_layer_55 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_5_ block17_6_
block17_6_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_304 (Conv2D)	(None, None, None, 128)	139,264	block17_6_
batch_normalization_304 (BatchNormalization)	(None, None, None, 128)	384	conv2d_304
activation_304 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_305 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_305 (BatchNormalization)	(None, None, None, 160)	480	conv2d_305
activation_305 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_303 (Conv2D)	(None, None, None, 192)	208,896	block17_6_
conv2d_306 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_303 (BatchNormalization)	(None, None, None, 192)	576	conv2d_303
batch_normalization_306 (BatchNormalization)	(None, None, None, 192)	576	conv2d_306
activation_303 (Activation)	(None, None, None, 192)	0	batch_norm
activation_306 (Activation)	(None, None, None, 192)	0	batch_norm
block17_7_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_7_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_7_
custom_scale_layer_56 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_6_ block17_7_
block17_7_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_308 (Conv2D)	(None, None, None, 128)	139,264	block17_7_

batch_normalization_308 (BatchNormalization)	(None, None, None, 128)	384	conv2d_308
activation_308 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_309 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_309 (BatchNormalization)	(None, None, None, 160)	480	conv2d_309
activation_309 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_307 (Conv2D)	(None, None, None, 192)	208,896	block17_7_
conv2d_310 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_307 (BatchNormalization)	(None, None, None, 192)	576	conv2d_307
batch_normalization_310 (BatchNormalization)	(None, None, None, 192)	576	conv2d_310
activation_307 (Activation)	(None, None, None, 192)	0	batch_norm
activation_310 (Activation)	(None, None, None, 192)	0	batch_norm
block17_8_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_8_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_8_
custom_scale_layer_57 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_7_ block17_8_
block17_8_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_312 (Conv2D)	(None, None, None, 128)	139,264	block17_8_
batch_normalization_312 (BatchNormalization)	(None, None, None, 128)	384	conv2d_312
activation_312 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_313 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_313 (BatchNormalization)	(None, None, None, 160)	480	conv2d_313
activation 313	(None, None, None,	0	batch norm

(Activation)	160)		
conv2d_311 (Conv2D)	(None, None, None, 192)	208,896	block17_8_
conv2d_314 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_311 (BatchNormalization)	(None, None, None, 192)	576	conv2d_311
batch_normalization_314 (BatchNormalization)	(None, None, None, 192)	576	conv2d_314
activation_311 (Activation)	(None, None, None, 192)	0	batch_norm
activation_314 (Activation)	(None, None, None, 192)	0	batch_norm
block17_9_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_9_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_9_
custom_scale_layer_58 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_8_ block17_9_
block17_9_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_316 (Conv2D)	(None, None, None, 128)	139,264	block17_9_
batch_normalization_316 (BatchNormalization)	(None, None, None, 128)	384	conv2d_316
activation_316 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_317 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_317 (BatchNormalization)	(None, None, None, 160)	480	conv2d_317
activation_317 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_315 (Conv2D)	(None, None, None, 192)	208,896	block17_9_
conv2d_318 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_315 (BatchNormalization)	(None, None, None, 192)	576	conv2d_315
batch_normalization_318 (BatchNormalization)	(None, None, None, 192)	576	conv2d_318

activation_315 (Activation)	(None, None, None, 192)	0	batch_norm
activation_318 (Activation)	(None, None, None, 192)	0	batch_norm
block17_10_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_10_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_10
custom_scale_layer_59 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_9_ block17_10
block17_10_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_320 (Conv2D)	(None, None, None, 128)	139,264	block17_10
batch_normalization_320 (BatchNormalization)	(None, None, None, 128)	384	conv2d_320
activation_320 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_321 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_321 (BatchNormalization)	(None, None, None, 160)	480	conv2d_321
activation_321 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_319 (Conv2D)	(None, None, None, 192)	208,896	block17_10
conv2d_322 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_319 (BatchNormalization)	(None, None, None, 192)	576	conv2d_319
batch_normalization_322 (BatchNormalization)	(None, None, None, 192)	576	conv2d_322
activation_319 (Activation)	(None, None, None, 192)	0	batch_norm
activation_322 (Activation)	(None, None, None, 192)	0	batch_norm
block17_11_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_11_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_11
custom_scale_layer_60	(None, None, None,	0	block17_10



(CustomScaleLayer)	1088)		block17_11
block17_11_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_324 (Conv2D)	(None, None, None, 128)	139,264	block17_11
batch_normalization_324 (BatchNormalization)	(None, None, None, 128)	384	conv2d_324
activation_324 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_325 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_325 (BatchNormalization)	(None, None, None, 160)	480	conv2d_325
activation_325 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_323 (Conv2D)	(None, None, None, 192)	208,896	block17_11
conv2d_326 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_323 (BatchNormalization)	(None, None, None, 192)	576	conv2d_323
batch_normalization_326 (BatchNormalization)	(None, None, None, 192)	576	conv2d_326
activation_323 (Activation)	(None, None, None, 192)	0	batch_norm
activation_326 (Activation)	(None, None, None, 192)	0	batch_norm
block17_12_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_12_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_12
custom_scale_layer_61 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_11 block17_12
block17_12_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_328 (Conv2D)	(None, None, None, 128)	139,264	block17_12
batch_normalization_328 (BatchNormalization)	(None, None, None, 128)	384	conv2d_328
activation_328 (Activation)	(None, None, None, 128)	0	batch_norm

conv2d_329 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">143,360</a>	activation
batch_normalization_329 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">480</a>	conv2d_329
activation_329 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">0</a>	batch_norm
conv2d_327 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">208,896</a>	block17_12
conv2d_330 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">215,040</a>	activation
batch_normalization_327 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">576</a>	conv2d_327
batch_normalization_330 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">576</a>	conv2d_330
activation_327 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">0</a>	batch_norm
activation_330 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">0</a>	batch_norm
block17_13_mixed ( <a href="#">Concatenate</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">384</a> )	<a href="#">0</a>	activation activation
block17_13_conv ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">1088</a> )	<a href="#">418,880</a>	block17_13
custom_scale_layer_62 ( <a href="#">CustomScaleLayer</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">1088</a> )	<a href="#">0</a>	block17_12 block17_13
block17_13_ac ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">1088</a> )	<a href="#">0</a>	custom_sca
conv2d_332 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">128</a> )	<a href="#">139,264</a>	block17_13
batch_normalization_332 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">128</a> )	<a href="#">384</a>	conv2d_332
activation_332 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">128</a> )	<a href="#">0</a>	batch_norm
conv2d_333 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">143,360</a>	activation
batch_normalization_333 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">480</a>	conv2d_333
activation_333 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">0</a>	batch_norm
conv2d_331 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">208,896</a>	block17_13
conv2d_334 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">160</a> )	<a href="#">215,040</a>	activation

	192)		
batch_normalization_331 (BatchNormalization)	(None, None, None, 192)	576	conv2d_331
batch_normalization_334 (BatchNormalization)	(None, None, None, 192)	576	conv2d_334
activation_331 (Activation)	(None, None, None, 192)	0	batch_norm
activation_334 (Activation)	(None, None, None, 192)	0	batch_norm
block17_14_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_14_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_14
custom_scale_layer_63 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_13 block17_14
block17_14_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_336 (Conv2D)	(None, None, None, 128)	139,264	block17_14
batch_normalization_336 (BatchNormalization)	(None, None, None, 128)	384	conv2d_336
activation_336 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_337 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_337 (BatchNormalization)	(None, None, None, 160)	480	conv2d_337
activation_337 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_335 (Conv2D)	(None, None, None, 192)	208,896	block17_14
conv2d_338 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_335 (BatchNormalization)	(None, None, None, 192)	576	conv2d_335
batch_normalization_338 (BatchNormalization)	(None, None, None, 192)	576	conv2d_338
activation_335 (Activation)	(None, None, None, 192)	0	batch_norm
activation_338 (Activation)	(None, None, None, 192)	0	batch_norm

block17_15_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_15_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_15
custom_scale_layer_64 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_14 block17_15
block17_15_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_340 (Conv2D)	(None, None, None, 128)	139,264	block17_15
batch_normalization_340 (BatchNormalization)	(None, None, None, 128)	384	conv2d_340
activation_340 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_341 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_341 (BatchNormalization)	(None, None, None, 160)	480	conv2d_341
activation_341 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_339 (Conv2D)	(None, None, None, 192)	208,896	block17_15
conv2d_342 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_339 (BatchNormalization)	(None, None, None, 192)	576	conv2d_339
batch_normalization_342 (BatchNormalization)	(None, None, None, 192)	576	conv2d_342
activation_339 (Activation)	(None, None, None, 192)	0	batch_norm
activation_342 (Activation)	(None, None, None, 192)	0	batch_norm
block17_16_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_16_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_16
custom_scale_layer_65 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_15 block17_16
block17_16_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_344 (Conv2D)	(None, None, None, 128)	139,264	block17_16

batch_normalization_344 (BatchNormalization)	(None, None, None, 128)	384	conv2d_344
activation_344 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_345 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_345 (BatchNormalization)	(None, None, None, 160)	480	conv2d_345
activation_345 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_343 (Conv2D)	(None, None, None, 192)	208,896	block17_16
conv2d_346 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_343 (BatchNormalization)	(None, None, None, 192)	576	conv2d_343
batch_normalization_346 (BatchNormalization)	(None, None, None, 192)	576	conv2d_346
activation_343 (Activation)	(None, None, None, 192)	0	batch_norm
activation_346 (Activation)	(None, None, None, 192)	0	batch_norm
block17_17_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_17_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_17
custom_scale_layer_66 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_16 block17_17
block17_17_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_348 (Conv2D)	(None, None, None, 128)	139,264	block17_17
batch_normalization_348 (BatchNormalization)	(None, None, None, 128)	384	conv2d_348
activation_348 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_349 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_349 (BatchNormalization)	(None, None, None, 160)	480	conv2d_349

activation_349 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_347 (Conv2D)	(None, None, None, 192)	208,896	block17_17
conv2d_350 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_347 (BatchNormalization)	(None, None, None, 192)	576	conv2d_347
batch_normalization_350 (BatchNormalization)	(None, None, None, 192)	576	conv2d_350
activation_347 (Activation)	(None, None, None, 192)	0	batch_norm
activation_350 (Activation)	(None, None, None, 192)	0	batch_norm
block17_18_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_18_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_18
custom_scale_layer_67 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_17 block17_18
block17_18_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_352 (Conv2D)	(None, None, None, 128)	139,264	block17_18
batch_normalization_352 (BatchNormalization)	(None, None, None, 128)	384	conv2d_352
activation_352 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_353 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_353 (BatchNormalization)	(None, None, None, 160)	480	conv2d_353
activation_353 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_351 (Conv2D)	(None, None, None, 192)	208,896	block17_18
conv2d_354 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_351 (BatchNormalization)	(None, None, None, 192)	576	conv2d_351
batch_normalization_354 (BatchNormalization)	(None, None, None, 192)	576	conv2d_354

activation_351 (Activation)	(None, None, None, 192)	0	batch_norm
activation_354 (Activation)	(None, None, None, 192)	0	batch_norm
block17_19_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_19_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_19
custom_scale_layer_68 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_18 block17_19
block17_19_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_356 (Conv2D)	(None, None, None, 128)	139,264	block17_19
batch_normalization_356 (BatchNormalization)	(None, None, None, 128)	384	conv2d_356
activation_356 (Activation)	(None, None, None, 128)	0	batch_norm
conv2d_357 (Conv2D)	(None, None, None, 160)	143,360	activation
batch_normalization_357 (BatchNormalization)	(None, None, None, 160)	480	conv2d_357
activation_357 (Activation)	(None, None, None, 160)	0	batch_norm
conv2d_355 (Conv2D)	(None, None, None, 192)	208,896	block17_19
conv2d_358 (Conv2D)	(None, None, None, 192)	215,040	activation
batch_normalization_355 (BatchNormalization)	(None, None, None, 192)	576	conv2d_355
batch_normalization_358 (BatchNormalization)	(None, None, None, 192)	576	conv2d_358
activation_355 (Activation)	(None, None, None, 192)	0	batch_norm
activation_358 (Activation)	(None, None, None, 192)	0	batch_norm
block17_20_mixed (Concatenate)	(None, None, None, 384)	0	activation activation
block17_20_conv (Conv2D)	(None, None, None, 1088)	418,880	block17_20
custom_scale_layer_69 (CustomScaleLayer)	(None, None, None, 1088)	0	block17_19

(CustomScaleLayer)	(None, None, None, 1088)	0	block17_20
block17_20_ac (Activation)	(None, None, None, 1088)	0	custom_sca
conv2d_363 (Conv2D)	(None, None, None, 256)	278,528	block17_20
batch_normalization_363 (BatchNormalization)	(None, None, None, 256)	768	conv2d_363
activation_363 (Activation)	(None, None, None, 256)	0	batch_norm
conv2d_359 (Conv2D)	(None, None, None, 256)	278,528	block17_20
conv2d_361 (Conv2D)	(None, None, None, 256)	278,528	block17_20
conv2d_364 (Conv2D)	(None, None, None, 288)	663,552	activation
batch_normalization_359 (BatchNormalization)	(None, None, None, 256)	768	conv2d_359
batch_normalization_361 (BatchNormalization)	(None, None, None, 256)	768	conv2d_361
batch_normalization_364 (BatchNormalization)	(None, None, None, 288)	864	conv2d_364
activation_359 (Activation)	(None, None, None, 256)	0	batch_norm
activation_361 (Activation)	(None, None, None, 256)	0	batch_norm
activation_364 (Activation)	(None, None, None, 288)	0	batch_norm
conv2d_360 (Conv2D)	(None, None, None, 384)	884,736	activation
conv2d_362 (Conv2D)	(None, None, None, 288)	663,552	activation
conv2d_365 (Conv2D)	(None, None, None, 320)	829,440	activation
batch_normalization_360 (BatchNormalization)	(None, None, None, 384)	1,152	conv2d_360
batch_normalization_362 (BatchNormalization)	(None, None, None, 288)	864	conv2d_362
batch_normalization_365 (BatchNormalization)	(None, None, None, 320)	960	conv2d_365
activation_360 (Activation)	(None, None, None, 384)	0	batch_norm



activation_362 (Activation)	(None, None, None, 288)	0	batch_norm
activation_365 (Activation)	(None, None, None, 320)	0	batch_norm
max_pooling2d_7 (MaxPooling2D)	(None, None, None, 1088)	0	block17_20
mixed_7a (Concatenate)	(None, None, None, 2080)	0	activation activation activation max_poolin
conv2d_367 (Conv2D)	(None, None, None, 192)	399,360	mixed_7a[0
batch_normalization_367 (BatchNormalization)	(None, None, None, 192)	576	conv2d_367
activation_367 (Activation)	(None, None, None, 192)	0	batch_norm
conv2d_368 (Conv2D)	(None, None, None, 224)	129,024	activation
batch_normalization_368 (BatchNormalization)	(None, None, None, 224)	672	conv2d_368
activation_368 (Activation)	(None, None, None, 224)	0	batch_norm
conv2d_366 (Conv2D)	(None, None, None, 192)	399,360	mixed_7a[0
conv2d_369 (Conv2D)	(None, None, None, 256)	172,032	activation
batch_normalization_366 (BatchNormalization)	(None, None, None, 192)	576	conv2d_366
batch_normalization_369 (BatchNormalization)	(None, None, None, 256)	768	conv2d_369
activation_366 (Activation)	(None, None, None, 192)	0	batch_norm
activation_369 (Activation)	(None, None, None, 256)	0	batch_norm
block8_1_mixed (Concatenate)	(None, None, None, 448)	0	activation activation
block8_1_conv (Conv2D)	(None, None, None, 2080)	933,920	block8_1_m
custom_scale_layer_70 (CustomScaleLayer)	(None, None, None, 2080)	0	mixed_7a[0 block8_1_c
block8_1_ac (Activation)	(None, None, None, 2080)	0	custom_sca

conv2d_371 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">399,360</a>	block8_1_a
batch_normalization_371 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">576</a>	conv2d_371
activation_371 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">0</a>	batch_norm
conv2d_372 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">224</a> )	<a href="#">129,024</a>	activation
batch_normalization_372 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">224</a> )	<a href="#">672</a>	conv2d_372
activation_372 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">224</a> )	<a href="#">0</a>	batch_norm
conv2d_370 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">399,360</a>	block8_1_a
conv2d_373 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">256</a> )	<a href="#">172,032</a>	activation
batch_normalization_370 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">576</a>	conv2d_370
batch_normalization_373 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">256</a> )	<a href="#">768</a>	conv2d_373
activation_370 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">0</a>	batch_norm
activation_373 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">256</a> )	<a href="#">0</a>	batch_norm
block8_2_mixed ( <a href="#">Concatenate</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">448</a> )	<a href="#">0</a>	activation activation
block8_2_conv ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">2080</a> )	<a href="#">933,920</a>	block8_2_m
custom_scale_layer_71 ( <a href="#">CustomScaleLayer</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">2080</a> )	<a href="#">0</a>	block8_1_a block8_2_c
block8_2_ac ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">2080</a> )	<a href="#">0</a>	custom_sca
conv2d_375 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">399,360</a>	block8_2_a
batch_normalization_375 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">576</a>	conv2d_375
activation_375 ( <a href="#">Activation</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">192</a> )	<a href="#">0</a>	batch_norm
conv2d_376 ( <a href="#">Conv2D</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">224</a> )	<a href="#">129,024</a>	activation
batch_normalization_376 ( <a href="#">BatchNormalization</a> )	( <a href="#">None</a> , <a href="#">None</a> , <a href="#">None</a> , <a href="#">224</a> )	<a href="#">672</a>	conv2d_376

batch_normalization_376 (BatchNormalization)	(None, None, None, 224)	576	conv2d_376
activation_376 (Activation)	(None, None, None, 224)	0	batch_norm
conv2d_374 (Conv2D)	(None, None, None, 192)	399,360	block8_2_a
conv2d_377 (Conv2D)	(None, None, None, 256)	172,032	activation
batch_normalization_374 (BatchNormalization)	(None, None, None, 192)	576	conv2d_374
batch_normalization_377 (BatchNormalization)	(None, None, None, 256)	768	conv2d_377
activation_374 (Activation)	(None, None, None, 192)	0	batch_norm
activation_377 (Activation)	(None, None, None, 256)	0	batch_norm
block8_3_mixed (Concatenate)	(None, None, None, 448)	0	activation activation
block8_3_conv (Conv2D)	(None, None, None, 2080)	933,920	block8_3_m
custom_scale_layer_72 (CustomScaleLayer)	(None, None, None, 2080)	0	block8_2_a block8_3_c
block8_3_ac (Activation)	(None, None, None, 2080)	0	custom_sca
conv2d_379 (Conv2D)	(None, None, None, 192)	399,360	block8_3_a
batch_normalization_379 (BatchNormalization)	(None, None, None, 192)	576	conv2d_379
activation_379 (Activation)	(None, None, None, 192)	0	batch_norm
conv2d_380 (Conv2D)	(None, None, None, 224)	129,024	activation
batch_normalization_380 (BatchNormalization)	(None, None, None, 224)	672	conv2d_380
activation_380 (Activation)	(None, None, None, 224)	0	batch_norm
conv2d_378 (Conv2D)	(None, None, None, 192)	399,360	block8_3_a
conv2d_381 (Conv2D)	(None, None, None, 256)	172,032	activation
batch_normalization_378 (BatchNormalization)	(None, None, None, 192)	576	conv2d_378

batch_normalization_381 (BatchNormalization)	(None, None, None, 256)	768	conv2d_381
activation_378 (Activation)	(None, None, None, 192)	0	batch_norm
activation_381 (Activation)	(None, None, None, 256)	0	batch_norm
block8_4_mixed (Concatenate)	(None, None, None, 448)	0	activation activation
block8_4_conv (Conv2D)	(None, None, None, 2080)	933,920	block8_4_m
custom_scale_layer_73 (CustomScaleLayer)	(None, None, None, 2080)	0	block8_3_a block8_4_c
block8_4_ac (Activation)	(None, None, None, 2080)	0	custom_sca
conv2d_383 (Conv2D)	(None, None, None, 192)	399,360	block8_4_a
batch_normalization_383 (BatchNormalization)	(None, None, None, 192)	576	conv2d_383
activation_383 (Activation)	(None, None, None, 192)	0	batch_norm
conv2d_384 (Conv2D)	(None, None, None, 224)	129,024	activation
batch_normalization_384 (BatchNormalization)	(None, None, None, 224)	672	conv2d_384
activation_384 (Activation)	(None, None, None, 224)	0	batch_norm
conv2d_382 (Conv2D)	(None, None, None, 192)	399,360	block8_4_a
conv2d_385 (Conv2D)	(None, None, None, 256)	172,032	activation
batch_normalization_382 (BatchNormalization)	(None, None, None, 192)	576	conv2d_382
batch_normalization_385 (BatchNormalization)	(None, None, None, 256)	768	conv2d_385
activation_382 (Activation)	(None, None, None, 192)	0	batch_norm
activation_385 (Activation)	(None, None, None, 256)	0	batch_norm
block8_5_mixed (Concatenate)	(None, None, None, 448)	0	activation activation
block8_5_conv (Conv2D)	(None, None, None,	933,920	block8_5_m

	2080)		
custom_scale_layer_74 (CustomScaleLayer)	(None, None, None, 2080)	0	block8_4_a block8_5_c
block8_5_ac (Activation)	(None, None, None, 2080)	0	custom_sca
conv2d_387 (Conv2D)	(None, None, None, 192)	399,360	block8_5_a
batch_normalization_387 (BatchNormalization)	(None, None, None, 192)	576	conv2d_387
activation_387 (Activation)	(None, None, None, 192)	0	batch_norm
conv2d_388 (Conv2D)	(None, None, None, 224)	129,024	activation
batch_normalization_388 (BatchNormalization)	(None, None, None, 224)	672	conv2d_388
activation_388 (Activation)	(None, None, None, 224)	0	batch_norm
conv2d_386 (Conv2D)	(None, None, None, 192)	399,360	block8_5_a
conv2d_389 (Conv2D)	(None, None, None, 256)	172,032	activation
batch_normalization_386 (BatchNormalization)	(None, None, None, 192)	576	conv2d_386
batch_normalization_389 (BatchNormalization)	(None, None, None, 256)	768	conv2d_389
activation_386 (Activation)	(None, None, None, 192)	0	batch_norm
activation_389 (Activation)	(None, None, None, 256)	0	batch_norm
block8_6_mixed (Concatenate)	(None, None, None, 448)	0	activation activation
block8_6_conv (Conv2D)	(None, None, None, 2080)	933,920	block8_6_m
custom_scale_layer_75 (CustomScaleLayer)	(None, None, None, 2080)	0	block8_5_a block8_6_c
block8_6_ac (Activation)	(None, None, None, 2080)	0	custom_sca
conv2d_391 (Conv2D)	(None, None, None, 192)	399,360	block8_6_a
batch_normalization_391 (BatchNormalization)	(None, None, None, 192)	576	conv2d_391

activation_391 (Activation)	(None, None, None, 192)	0	batch_norm
conv2d_392 (Conv2D)	(None, None, None, 224)	129,024	activation
batch_normalization_392 (BatchNormalization)	(None, None, None, 224)	672	conv2d_392
activation_392 (Activation)	(None, None, None, 224)	0	batch_norm
conv2d_390 (Conv2D)	(None, None, None, 192)	399,360	block8_6_a
conv2d_393 (Conv2D)	(None, None, None, 256)	172,032	activation
batch_normalization_390 (BatchNormalization)	(None, None, None, 192)	576	conv2d_390
batch_normalization_393 (BatchNormalization)	(None, None, None, 256)	768	conv2d_393
activation_390 (Activation)	(None, None, None, 192)	0	batch_norm
activation_393 (Activation)	(None, None, None, 256)	0	batch_norm
block8_7_mixed (Concatenate)	(None, None, None, 448)	0	activation activation
block8_7_conv (Conv2D)	(None, None, None, 2080)	933,920	block8_7_m
custom_scale_layer_76 (CustomScaleLayer)	(None, None, None, 2080)	0	block8_6_a block8_7_c
block8_7_ac (Activation)	(None, None, None, 2080)	0	custom_sca
conv2d_395 (Conv2D)	(None, None, None, 192)	399,360	block8_7_a
batch_normalization_395 (BatchNormalization)	(None, None, None, 192)	576	conv2d_395
activation_395 (Activation)	(None, None, None, 192)	0	batch_norm
conv2d_396 (Conv2D)	(None, None, None, 224)	129,024	activation
batch_normalization_396 (BatchNormalization)	(None, None, None, 224)	672	conv2d_396
activation_396 (Activation)	(None, None, None, 224)	0	batch_norm
conv2d_394 (Conv2D)	(None, None, None,	399,360	block8_7_a

	192)		
conv2d_397 (Conv2D)	(None, None, None, 256)	172,032	activation
batch_normalization_394 (BatchNormalization)	(None, None, None, 192)	576	conv2d_394
batch_normalization_397	(None, None, None,	768	conv2d_397

```
model1_TL.compile(loss='sparse_categorical_crossentropy',  
                  optimizer='adam',  
                  metrics=['accuracy'])  
  
callbacks_TL = [  
    keras.callbacks.ModelCheckpoint("bestTL.weights.h5",  
                                    monitor='val accuracy',
```