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Layer (type) Output Shape Param #

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

input\_2 (InputLayer) [(None, 224, 224, 3)] 0

block1\_conv1 (Conv2D) (None, 224, 224, 64) 1792

block1\_conv2 (Conv2D) (None, 224, 224, 64) 36928

block1\_pool (MaxPooling2D) (None, 112, 112, 64) 0

block2\_conv1 (Conv2D) (None, 112, 112, 128) 73856

block2\_conv2 (Conv2D) (None, 112, 112, 128) 147584

block2\_pool (MaxPooling2D) (None, 56, 56, 128) 0

block3\_conv1 (Conv2D) (None, 56, 56, 256) 295168

block3\_conv2 (Conv2D) (None, 56, 56, 256) 590080

block3\_conv3 (Conv2D) (None, 56, 56, 256) 590080

block3\_pool (MaxPooling2D) (None, 28, 28, 256) 0

block4\_conv1 (Conv2D) (None, 28, 28, 512) 1180160

block4\_conv2 (Conv2D) (None, 28, 28, 512) 2359808

block4\_conv3 (Conv2D) (None, 28, 28, 512) 2359808

block4\_pool (MaxPooling2D) (None, 14, 14, 512) 0

block5\_conv1 (Conv2D) (None, 14, 14, 512) 2359808

block5\_conv2 (Conv2D) (None, 14, 14, 512) 2359808

block5\_conv3 (Conv2D) (None, 14, 14, 512) 2359808

block5\_pool (MaxPooling2D) (None, 7, 7, 512) 0

flatten (Flatten) (None, 25088) 0

dense (Dense) (None, 1) 25089

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Total params: 14,739,777

Trainable params: 25,089

Non-trainable params: 14,714,688

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Epoch 1/100

55/55 [==============================] - 328s 6s/step - loss: 0.2453 - accuracy: 0.8946 - val\_loss: 0.1311 - val\_accuracy: 0.9562 - lr: 0.0010

Epoch 2/100

55/55 [==============================] - 52s 950ms/step - loss: 0.0942 - accuracy: 0.9729 - val\_loss: 0.0962 - val\_accuracy: 0.9608 - lr: 0.0010

Epoch 3/100

55/55 [==============================] - 53s 955ms/step - loss: 0.0658 - accuracy: 0.9827 - val\_loss: 0.0903 - val\_accuracy: 0.9631 - lr: 0.0010

Epoch 4/100

55/55 [==============================] - 52s 953ms/step - loss: 0.0511 - accuracy: 0.9873 - val\_loss: 0.0717 - val\_accuracy: 0.9677 - lr: 0.0010

Epoch 5/100

55/55 [==============================] - 52s 955ms/step - loss: 0.0379 - accuracy: 0.9925 - val\_loss: 0.0659 - val\_accuracy: 0.9770 - lr: 0.0010

Epoch 6/100

55/55 [==============================] - 52s 955ms/step - loss: 0.0302 - accuracy: 0.9942 - val\_loss: 0.0622 - val\_accuracy: 0.9770 - lr: 0.0010

Epoch 7/100

55/55 [==============================] - 53s 959ms/step - loss: 0.0247 - accuracy: 0.9971 - val\_loss: 0.0592 - val\_accuracy: 0.9793 - lr: 0.0010

Epoch 8/100

55/55 [==============================] - 52s 953ms/step - loss: 0.0225 - accuracy: 0.9971 - val\_loss: 0.0903 - val\_accuracy: 0.9585 - lr: 0.0010

Epoch 9/100

55/55 [==============================] - 53s 965ms/step - loss: 0.0200 - accuracy: 0.9977 - val\_loss: 0.0801 - val\_accuracy: 0.9654 - lr: 0.0010

Epoch 10/100

55/55 [==============================] - 52s 953ms/step - loss: 0.0164 - accuracy: 0.9977 - val\_loss: 0.0575 - val\_accuracy: 0.9747 - lr: 0.0010

Epoch 11/100

55/55 [==============================] - 52s 949ms/step - loss: 0.0149 - accuracy: 0.9988 - val\_loss: 0.0544 - val\_accuracy: 0.9770 - lr: 0.0010

Epoch 12/100

55/55 [==============================] - 52s 957ms/step - loss: 0.0113 - accuracy: 0.9994 - val\_loss: 0.0546 - val\_accuracy: 0.9793 - lr: 0.0010

Epoch 13/100

55/55 [==============================] - 52s 950ms/step - loss: 0.0105 - accuracy: 0.9994 - val\_loss: 0.0526 - val\_accuracy: 0.9747 - lr: 0.0010

Epoch 14/100

55/55 [==============================] - 52s 954ms/step - loss: 0.0095 - accuracy: 1.0000 - val\_loss: 0.0555 - val\_accuracy: 0.9793 - lr: 0.0010

Epoch 15/100

55/55 [==============================] - 52s 949ms/step - loss: 0.0080 - accuracy: 1.0000 - val\_loss: 0.0509 - val\_accuracy: 0.9770 - lr: 0.0010

Epoch 16/100

55/55 [==============================] - 52s 944ms/step - loss: 0.0072 - accuracy: 1.0000 - val\_loss: 0.0505 - val\_accuracy: 0.9770 - lr: 0.0010

Epoch 17/100

55/55 [==============================] - 52s 935ms/step - loss: 0.0074 - accuracy: 1.0000 - val\_loss: 0.0503 - val\_accuracy: 0.9770 - lr: 0.0010

Epoch 18/100

55/55 [==============================] - 52s 940ms/step - loss: 0.0062 - accuracy: 1.0000 - val\_loss: 0.0603 - val\_accuracy: 0.9770 - lr: 0.0010

Epoch 19/100

55/55 [==============================] - 51s 937ms/step - loss: 0.0057 - accuracy: 1.0000 - val\_loss: 0.0527 - val\_accuracy: 0.9793 - lr: 0.0010

Epoch 20/100

55/55 [==============================] - 52s 941ms/step - loss: 0.0051 - accuracy: 1.0000 - val\_loss: 0.0518 - val\_accuracy: 0.9793 - lr: 0.0010

Epoch 21/100

55/55 [==============================] - 52s 952ms/step - loss: 0.0047 - accuracy: 1.0000 - val\_loss: 0.0497 - val\_accuracy: 0.9793 - lr: 1.0000e-04

Epoch 22/100

55/55 [==============================] - 52s 944ms/step - loss: 0.0046 - accuracy: 1.0000 - val\_loss: 0.0489 - val\_accuracy: 0.9770 - lr: 1.0000e-04

Epoch 23/100

55/55 [==============================] - 52s 950ms/step - loss: 0.0046 - accuracy: 1.0000 - val\_loss: 0.0498 - val\_accuracy: 0.9793 - lr: 1.0000e-04

Epoch 24/100

55/55 [==============================] - 52s 949ms/step - loss: 0.0045 - accuracy: 1.0000 - val\_loss: 0.0489 - val\_accuracy: 0.9770 - lr: 1.0000e-04

Epoch 25/100

55/55 [==============================] - 52s 952ms/step - loss: 0.0045 - accuracy: 1.0000 - val\_loss: 0.0496 - val\_accuracy: 0.9793 - lr: 1.0000e-04

Epoch 26/100

55/55 [==============================] - 52s 943ms/step - loss: 0.0045 - accuracy: 1.0000 - val\_loss: 0.0496 - val\_accuracy: 0.9793 - lr: 1.0000e-05

Epoch 27/100

55/55 [==============================] - 52s 940ms/step - loss: 0.0044 - accuracy: 1.0000 - val\_loss: 0.0494 - val\_accuracy: 0.9793 - lr: 1.0000e-05

Epoch 28/100

55/55 [==============================] - 52s 944ms/step - loss: 0.0044 - accuracy: 1.0000 - val\_loss: 0.0493 - val\_accuracy: 0.9793 - lr: 1.0000e-05

Epoch 29/100

55/55 [==============================] - 52s 946ms/step - loss: 0.0044 - accuracy: 1.0000 - val\_loss: 0.0493 - val\_accuracy: 0.9793 - lr: 1.0000e-06

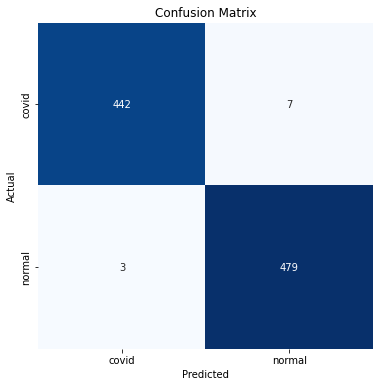
INFO:tensorflow:Assets written to: /content/drive/MyDrive/vgg16Split0.7noAug/assets

Test Loss: 0.05594

Test Accuracy: 98.93%

/usr/local/lib/python3.7/dist-packages/ipykernel\_launcher.py:123: DeprecationWarning: `np.int` is a deprecated alias for the builtin `int`. To silence this warning, use `int` by itself. Doing this will not modify any behavior and is safe. When replacing `np.int`, you may wish to use e.g. `np.int64` or `np.int32` to specify the precision. If you wish to review your current use, check the release note link for additional information.

Deprecated in NumPy 1.20; for more details and guidance: <https://numpy.org/devdocs/release/1.20.0-notes.html#deprecations>



Classification Report:

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precision recall f1-score support

covid 0.99 0.98 0.99 449

normal 0.99 0.99 0.99 482

accuracy 0.99 931

macro avg 0.99 0.99 0.99 931

weighted avg 0.99 0.99 0.99 931

