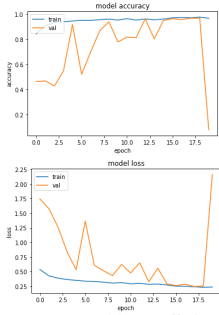


```
Model: "sequential_1"
Layer (type) Output Shape Param #
-----
conv2d_1 (Conv2D) (None, 256, 256, 64) 23296
batch_normalization_1 (Batch Normalization) (None, 256, 256, 64) 256
activation_1 (Activation) (None, 256, 256, 64) 0
max_pooling2d_1 (MaxPooling2D) (None, 128, 128, 64) 0
conv2d_2 (Conv2D) (None, 128, 128, 32) 51232
batch_normalization_2 (Batch Normalization) (None, 128, 128, 32) 128
activation_2 (Activation) (None, 128, 128, 32) 0
max_pooling2d_2 (MaxPooling2D) (None, 64, 64, 32) 0
zero_padding2d_1 (ZeroPadding2D) (None, 66, 66, 32) 0
conv2d_3 (Conv2D) (None, 66, 66, 32) 9248
batch_normalization_3 (Batch Normalization) (None, 66, 66, 32) 128
activation_3 (Activation) (None, 66, 66, 32) 0
max_pooling2d_3 (MaxPooling2D) (None, 33, 33, 32) 0
zero_padding2d_2 (ZeroPadding2D) (None, 35, 35, 32) 0
conv2d_4 (Conv2D) (None, 35, 35, 32) 9248
batch_normalization_4 (Batch Normalization) (None, 35, 35, 32) 128
activation_4 (Activation) (None, 35, 35, 32) 0
zero_padding2d_3 (ZeroPadding2D) (None, 37, 37, 32) 0
conv2d_5 (Conv2D) (None, 37, 37, 32) 9248
batch_normalization_5 (Batch Normalization) (None, 37, 37, 32) 128
activation_5 (Activation) (None, 37, 37, 32) 0
max_pooling2d_4 (MaxPooling2D) (None, 18, 18, 32) 0
flatten_1 (Flatten) (None, 10368) 0
dense_1 (Dense) (None, 768) 7963392
batch_normalization_6 (Batch Normalization) (None, 768) 3072
activation_6 (Activation) (None, 768) 0
dropout_1 (Dropout) (None, 768) 0
dense_2 (Dense) (None, 512) 393728
batch_normalization_7 (Batch Normalization) (None, 512) 2048
activation_7 (Activation) (None, 512) 0
dropout_2 (Dropout) (None, 512) 0
dense_3 (Dense) (None, 3) 1539
batch_normalization_8 (Batch Normalization) (None, 3) 12
activation_8 (Activation) (None, 3) 0
Total params: 8,466,831
Trainable params: 8,463,881
Non-trainable params: 2,950

Epoch 1/20
136/136 [=====] - 94s 691ms/step - loss: 0.5384 - accuracy: 0.8430 - val_loss: 1.7432 - val_accuracy: 0.4641
Epoch 0001: val_accuracy improved from -inf to 0.46411, saving model to /content/drive/My Drive/COVID/Vanshika/Models/alexNet.h5
Epoch 2/20
136/136 [=====] - 88s 648ms/step - loss: 0.4262 - accuracy: 0.9007 - val_loss: 1.5759 - val_accuracy: 0.4689
Epoch 0002: val_accuracy improved from 0.46411 to 0.46890, saving model to /content/drive/My Drive/COVID/Vanshika/Models/alexNet.h5
Epoch 3/20
136/136 [=====] - 87s 643ms/step - loss: 0.3941 - accuracy: 0.9334 - val_loss: 1.2614 - val_accuracy: 0.4282
Epoch 0003: val_accuracy did not improve from 0.46890
Epoch 4/20
136/136 [=====] - 87s 640ms/step - loss: 0.3713 - accuracy: 0.9406 - val_loss: 0.8370 - val_accuracy: 0.5478
Epoch 0004: val_accuracy improved from 0.46890 to 0.54785, saving model to /content/drive/My Drive/COVID/Vanshika/Models/alexNet.h5
Epoch 5/20
136/136 [=====] - 87s 640ms/step - loss: 0.3582 - accuracy: 0.9464 - val_loss: 0.5328 - val_accuracy: 0.9187
Epoch 0005: val_accuracy improved from 0.54785 to 0.91866, saving model to /content/drive/My Drive/COVID/Vanshika/Models/alexNet.h5
Epoch 6/20
136/136 [=====] - 87s 642ms/step - loss: 0.3429 - accuracy: 0.9515 - val_loss: 1.3641 - val_accuracy: 0.5215
Epoch 0006: val_accuracy did not improve from 0.91866
Epoch 7/20
136/136 [=====] - 87s 638ms/step - loss: 0.3393 - accuracy: 0.9518 - val_loss: 0.6074 - val_accuracy: 0.7010
Epoch 0007: val_accuracy did not improve from 0.91866
Epoch 8/20
136/136 [=====] - 86s 634ms/step - loss: 0.3334 - accuracy: 0.9569 - val_loss: 0.5129 - val_accuracy: 0.8684
Epoch 0008: val_accuracy did not improve from 0.91866
Epoch 9/20
136/136 [=====] - 86s 633ms/step - loss: 0.3041 - accuracy: 0.9611 - val_loss: 0.4302 - val_accuracy: 0.9402
Epoch 0009: val_accuracy improved from 0.91866 to 0.94019, saving model to /content/drive/My Drive/COVID/Vanshika/Models/alexNet.h5
Epoch 10/20
136/136 [=====] - 86s 635ms/step - loss: 0.3189 - accuracy: 0.9539 - val_loss: 0.6216 - val_accuracy: 0.7799
Epoch 0010: val_accuracy did not improve from 0.94019
Epoch 11/20
136/136 [=====] - 87s 638ms/step - loss: 0.2900 - accuracy: 0.9651 - val_loss: 0.4751 - val_accuracy: 0.8182
Epoch 0011: val_accuracy did not improve from 0.94019
Epoch 12/20
136/136 [=====] - 87s 639ms/step - loss: 0.3058 - accuracy: 0.9536 - val_loss: 0.6489 - val_accuracy: 0.8134
Epoch 0012: val_accuracy did not improve from 0.94019
Epoch 13/20
136/136 [=====] - 86s 634ms/step - loss: 0.2918 - accuracy: 0.9625 - val_loss: 0.3264 - val_accuracy: 0.9641
Epoch 0013: val_accuracy improved from 0.94019 to 0.96411, saving model to /content/drive/My Drive/COVID/Vanshika/Models/alexNet.h5
Epoch 14/20
136/136 [=====] - 86s 634ms/step - loss: 0.2890 - accuracy: 0.9561 - val_loss: 0.5568 - val_accuracy: 0.8038
Epoch 0014: val_accuracy did not improve from 0.96411
Epoch 15/20
136/136 [=====] - 88s 644ms/step - loss: 0.2780 - accuracy: 0.9618 - val_loss: 0.2881 - val_accuracy: 0.9498
Epoch 0015: val_accuracy did not improve from 0.96411
Epoch 16/20
136/136 [=====] - 86s 634ms/step - loss: 0.2514 - accuracy: 0.9718 - val_loss: 0.2588 - val_accuracy: 0.9641
Epoch 0016: val_accuracy did not improve from 0.96411
Epoch 17/20
136/136 [=====] - 87s 637ms/step - loss: 0.2469 - accuracy: 0.9736 - val_loss: 0.2844 - val_accuracy: 0.9569
Epoch 0017: val_accuracy did not improve from 0.96411
Epoch 18/20
136/136 [=====] - 86s 635ms/step - loss: 0.2503 - accuracy: 0.9725 - val_loss: 0.2417 - val_accuracy: 0.9689
Epoch 0018: val_accuracy improved from 0.96411 to 0.96890, saving model to /content/drive/My Drive/COVID/Vanshika/Models/alexNet.h5
Epoch 19/20
136/136 [=====] - 86s 632ms/step - loss: 0.2398 - accuracy: 0.9774 - val_loss: 0.2508 - val_accuracy: 0.9689
Epoch 0019: val_accuracy did not improve from 0.96890
Epoch 20/20
136/136 [=====] - 86s 630ms/step - loss: 0.2384 - accuracy: 0.9679 - val_loss: 2.1621 - val_accuracy: 0.0789
Epoch 0020: val_accuracy did not improve from 0.96890
dict_keys(['val_loss', 'val_accuracy', 'loss', 'accuracy'])
```



	precision	recall	f1-score	support
COVID-19	0.97	0.97	0.97	31
Normal	0.97	0.97	0.97	193
Viral Pneumonia	0.97	0.97	0.97	194
accuracy			0.97	418
macro avg	0.97	0.97	0.97	418
weighted avg	0.97	0.97	0.97	418

Confusion Matrix
[[30 1 0]
[0 187 6]
[1 5 188]]