

I. Model

Sequential model is used, starting with 2 convolutional networks of kernel size (7,7) and max pooling with pool size (3,3), followed by 2 convolutional networks of kernel size (7,7) and same pool size and finalized by several repeating sets of 2 convolutional networks of kernel size (3,3) with max pooling and pool size (2,2)

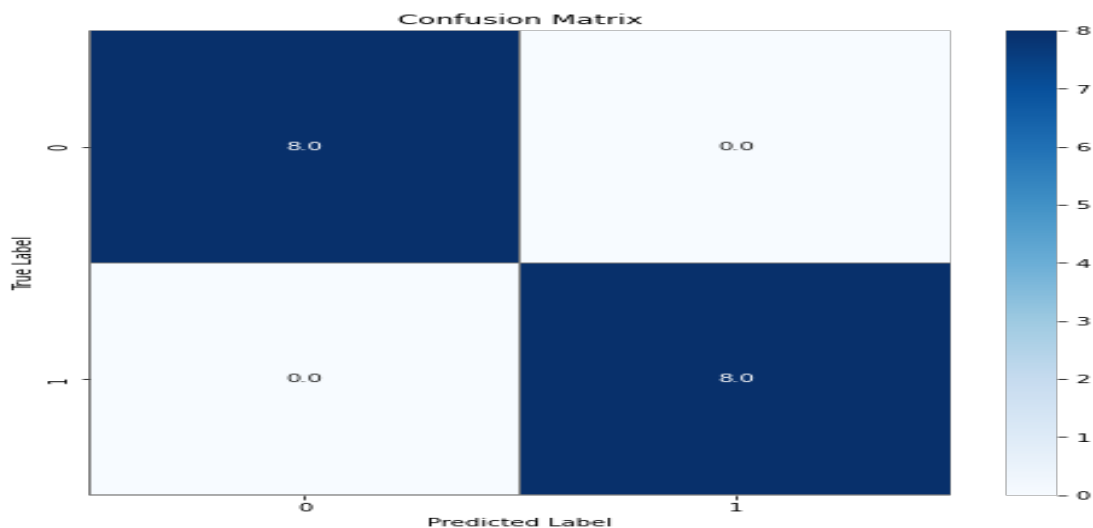
The learning rate may be the most important hyperparameter when configuring your neural network. It is vital to know how to investigate the effects of the learning rate on model performance and to build an intuition about the dynamics of the learning rate on model behavior.

II. Confusion Matrices and Learning Curves

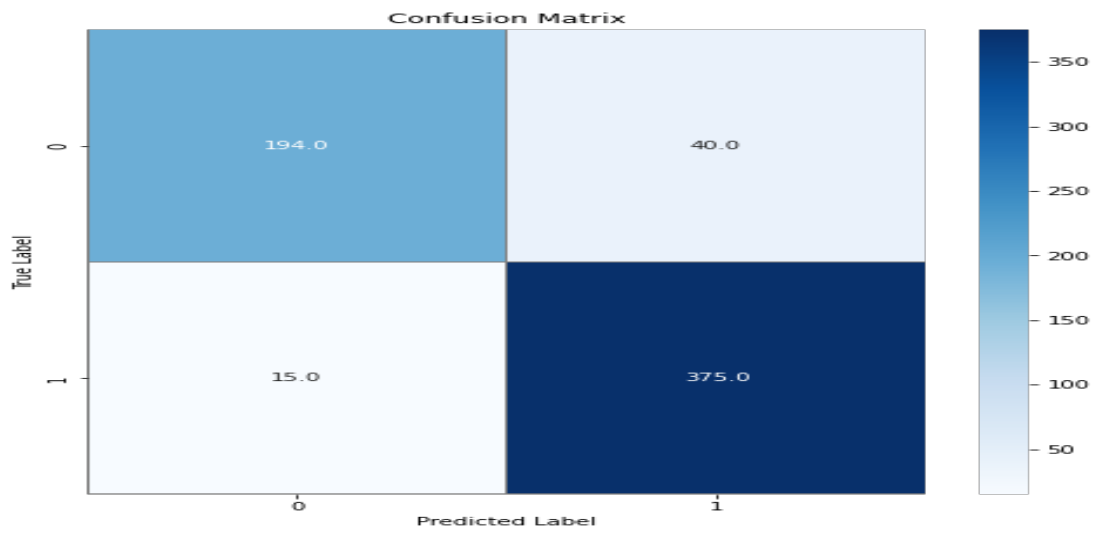
```
callback = EarlyStopping(monitor = 'loss', patience = 5)
```

By setting monitor as loss, if there is no improvement after 5 epochs then we will stop!

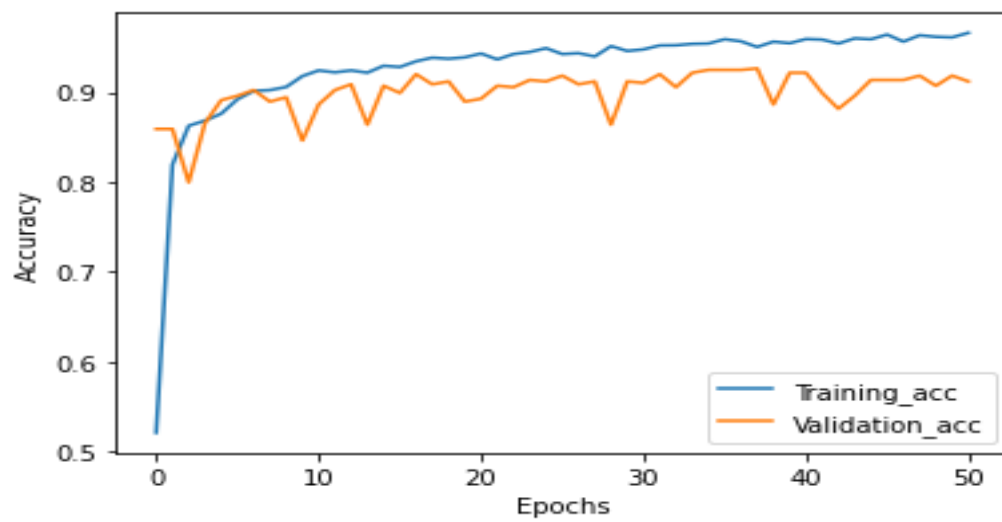
(1) Validation Confusion Matrix



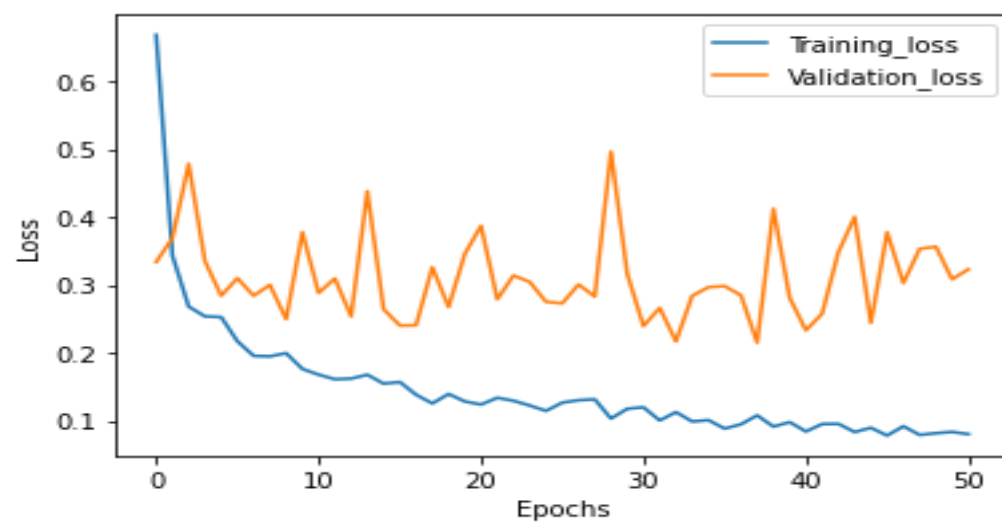
(2) Test Confusion Matrix



(3) Accuracy



(4) Loss



III. Final Performance

```
20/20 [=====] - 1s 29ms/step - loss: 0.3232 - accuracy: 0.9119  
Test Accuracy: 91.19%
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