* Do you get the same results if you run the Notebook multiple times without changing any parameters?

Answer – Yes, the value of accuracy, loss, validation loss and validation accuracy is same upto 2 decimal places. Model configuration is also same. Although weights and biases have changed.

* What is the effect of adding more neurons to each Conv2D layer?

Answer – Addition of neurons increases the accuracy of model from 0.92 to 0.97. It also overfits the model.

* What happens if we manipulate the value of Dropout?

Answer – If we change the Dropout to 0.6 it underfits the model and the values of Dropout is 0.05 it overfits the model.

* What is the effect of adding more hidden layers to the network?

Answer – Adding more hidden layers increases the accuracy but it also tends to overfit the model.

* What is the accuracy score if we use RMSprop for model 6?

Answer - Test accuracy: 0.0979

* Does manipulating the learning rate affect the model? Justify your answer

Answer – Yes. The model’s accuracy is decreased if epochs are same. Model took a lot of epochs to reach to maximum accuracy when learning rate was changed from 01. To 0.01 . When learning rate was 0.1 the model\_loss was stabilized between 5-10 epochs but when it was changed to 0.01 the model\_loss took around 17-20 epochs reach value lesser than 0.5.

* What is the best parameter configuration for this project?

Answer –

**Model Building:**

Hidden Layer = 1

Neuron of Hidden Layer = 64

Drop Out = 0.3 on input and hidden layer

Activation Layer of Input = relu

Activation of Hidden Layer = relu

Activation of output Layer = Softmax

**Model Compiling:**

Optimizer = Adam

**For Training:**

Batch\_size = 128

Epoch = 30