

## Question 2.

### Q2.3

```
3937/3937 - 7s - loss: 0.1356 - Accuracy: 0.9584 - val_loss: 1.8848 - val_Accuracy: 0.7646 - 7s/epoch - 2ms/step
Epoch 2/20
3937/3937 - 6s - loss: 0.0489 - Accuracy: 0.9880 - val_loss: 2.1958 - val_Accuracy: 0.7685 - 6s/epoch - 2ms/step
Epoch 3/20
3937/3937 - 6s - loss: 0.0399 - Accuracy: 0.9904 - val_loss: 2.4007 - val_Accuracy: 0.7653 - 6s/epoch - 2ms/step
Epoch 4/20
3937/3937 - 7s - loss: 0.0355 - Accuracy: 0.9913 - val_loss: 2.6610 - val_Accuracy: 0.7475 - 7s/epoch - 2ms/step
Epoch 5/20
3937/3937 - 8s - loss: 0.0349 - Accuracy: 0.9918 - val_loss: 2.6265 - val_Accuracy: 0.7576 - 8s/epoch - 2ms/step
Epoch 6/20
3937/3937 - 7s - loss: 0.0344 - Accuracy: 0.9922 - val_loss: 2.9059 - val_Accuracy: 0.7575 - 7s/epoch - 2ms/step
Epoch 7/20
3937/3937 - 6s - loss: 0.0356 - Accuracy: 0.9925 - val_loss: 2.5187 - val_Accuracy: 0.7497 - 6s/epoch - 1ms/step
Epoch 8/20
3937/3937 - 7s - loss: 0.0366 - Accuracy: 0.9923 - val_loss: 3.1208 - val_Accuracy: 0.7219 - 7s/epoch - 2ms/step
Epoch 9/20
3937/3937 - 7s - loss: 0.0364 - Accuracy: 0.9922 - val_loss: 2.6656 - val_Accuracy: 0.7608 - 7s/epoch - 2ms/step
Epoch 10/20
3937/3937 - 7s - loss: 0.0382 - Accuracy: 0.9925 - val_loss: 2.2698 - val_Accuracy: 0.7440 - 7s/epoch - 2ms/step
Epoch 11/20
3937/3937 - 7s - loss: 0.0417 - Accuracy: 0.9925 - val_loss: 3.2296 - val_Accuracy: 0.7644 - 7s/epoch - 2ms/step
Epoch 12/20
3937/3937 - 7s - loss: 0.0469 - Accuracy: 0.9925 - val_loss: 2.7838 - val_Accuracy: 0.7629 - 7s/epoch - 2ms/step
Epoch 13/20
3937/3937 - 7s - loss: 0.0442 - Accuracy: 0.9926 - val_loss: 2.1947 - val_Accuracy: 0.7648 - 7s/epoch - 2ms/step
Epoch 14/20
3937/3937 - 5s - loss: 0.0438 - Accuracy: 0.9925 - val_loss: 2.6274 - val_Accuracy: 0.7498 - 5s/epoch - 1ms/step
Epoch 15/20
3937/3937 - 7s - loss: 0.0464 - Accuracy: 0.9925 - val_loss: 2.5286 - val_Accuracy: 0.7484 - 7s/epoch - 2ms/step
Epoch 16/20
3937/3937 - 6s - loss: 0.0435 - Accuracy: 0.9925 - val_loss: 2.5002 - val_Accuracy: 0.7617 - 6s/epoch - 2ms/step
Epoch 17/20
3937/3937 - 7s - loss: 0.0435 - Accuracy: 0.9923 - val_loss: 2.7421 - val_Accuracy: 0.7648 - 7s/epoch - 2ms/step
Epoch 18/20
3937/3937 - 7s - loss: 0.0530 - Accuracy: 0.9930 - val_loss: 4.1730 - val_Accuracy: 0.7612 - 7s/epoch - 2ms/step
Epoch 19/20
3937/3937 - 8s - loss: 0.0501 - Accuracy: 0.9927 - val_loss: 3.3133 - val_Accuracy: 0.7604 - 8s/epoch - 2ms/step
Epoch 20/20
3937/3937 - 6s - loss: 0.0476 - Accuracy: 0.9927 - val_loss: 3.5642 - val_Accuracy: 0.7591 - 6s/epoch - 2ms/step
```

```
]: <keras.src.callbacks.History at 0x1d97fdb5610>
```

```
In [9]: model.evaluate(x_test,y_test, verbose = 2)
```

```
353/353 - 0s - loss: 3.7072 - Accuracy: 0.7457 - 425ms/epoch - 1ms/step
```

```
Out[9]: [3.707167387008667, 0.7457011342048645]
```

Tooltip sorting method: **default**

Smoothing

0.6

Horizontal Axis

STEP

RELATIVE

WALL

Runs

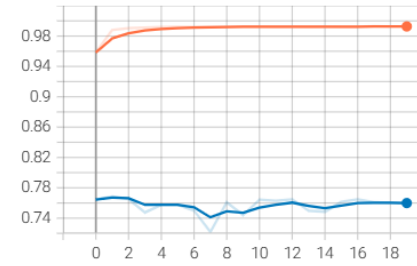
Write a regex to filter runs

- ☒ 20231121-230230\train  
☒ 20231121-230230\validation

TOGGLE ALL RUNS

logs14763/tensorboard\_log\_data/

epoch\_Accuracy  
tag: epoch\_Accuracy



epoch\_loss  
tag: epoch\_loss

