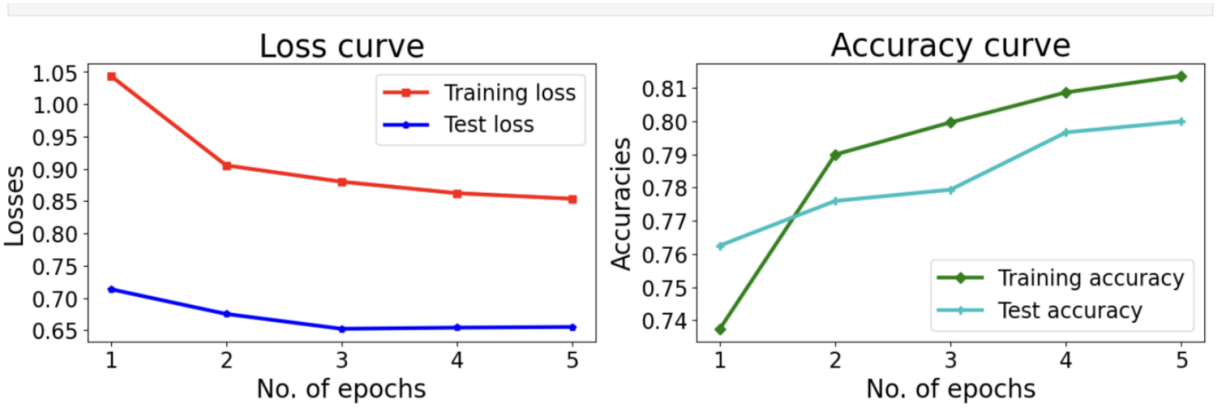
For pretrained weights model

Resnet has

```
Test accuracy: 94.06%
CPU times: user 15.9 s, sys: 2.67 s, total: 18.6 s
Wall time: 28 s
```

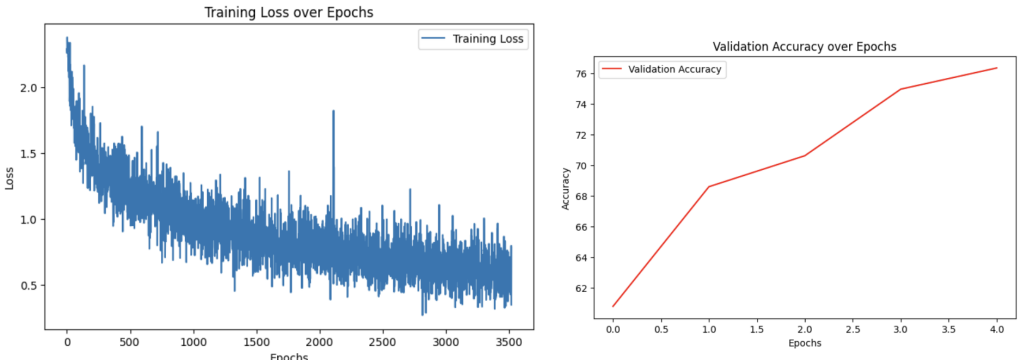
Alexnet has



About 80% Accuracy So Clearly Resnet is better than AlexNet

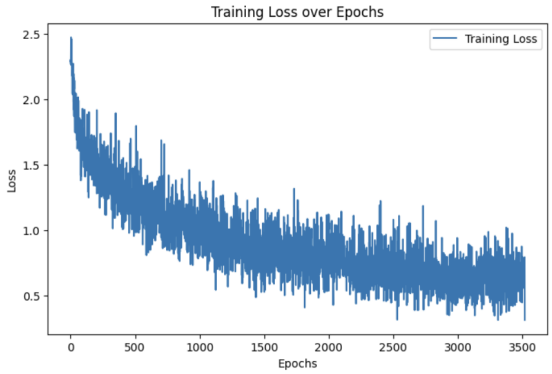
On implementing AlexNet from Scratch the

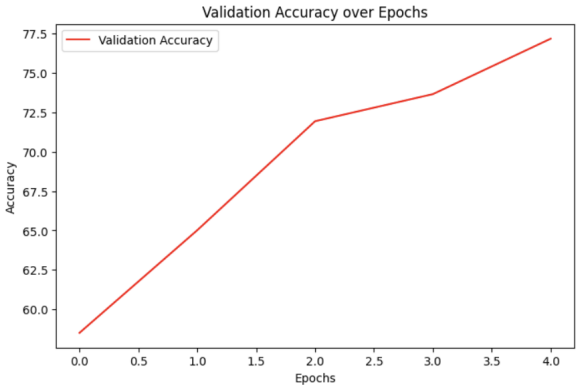
On unregularized Case and learning rate=0.005 the performance is




```
Accuracy of the network on the 10000 test images: 74.79 %
```

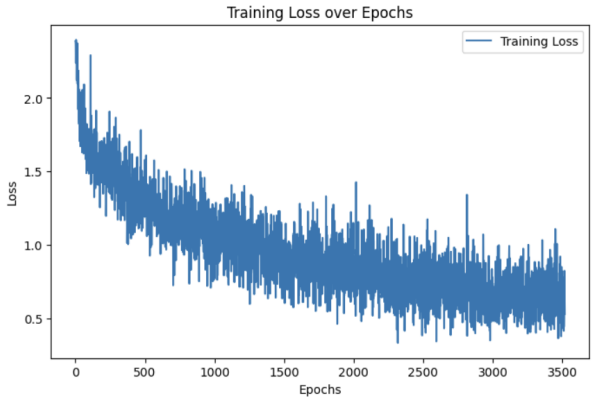
On regularized with weight_decay=0.001 and learning rate=0.005 it is

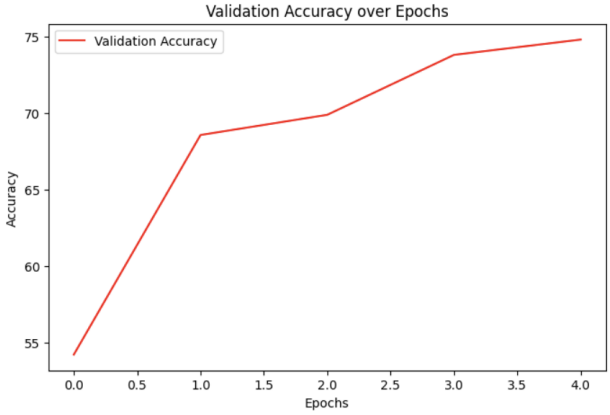





```
Accuracy of the network on the 10000 test images: 76.89 %
```

On regularized with weight_decay=0.001 and learning rate=0.010 it is





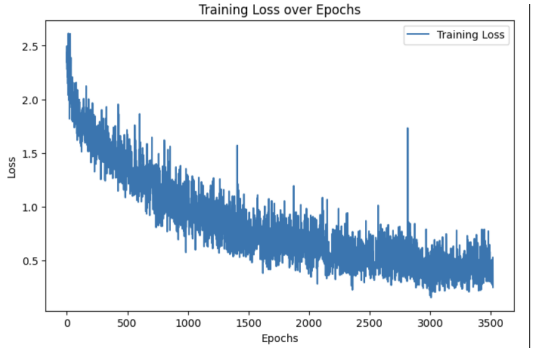

```
Accuracy of the network on the 10000 test images: 75.5 %
```

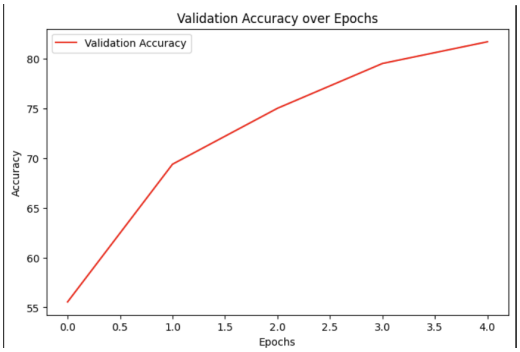
So We can see increasing the learning rate decreased the accuracy of our model and Regularization increases the Accuracy of our Model

Now for Resnet from Scratch

On implementing AlexNet from Scratch the

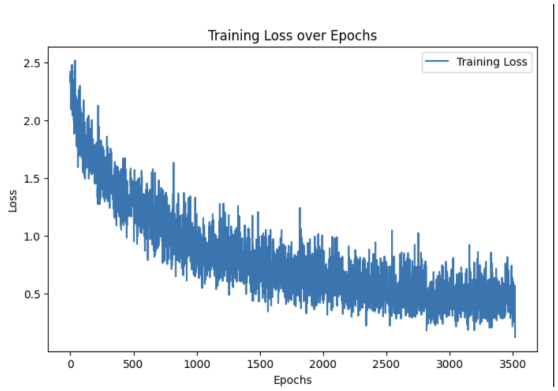
On unregularized Case and learning rate=0.01 the performance is

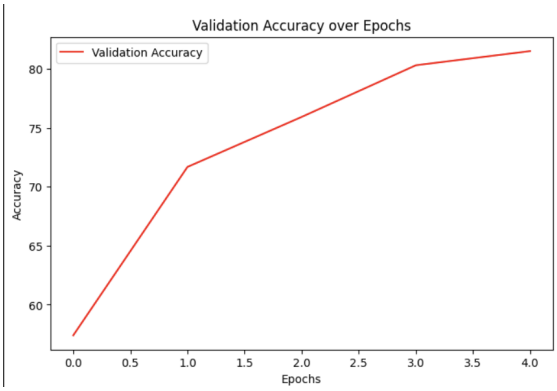





```
Accuracy of the network on the 10000 test images: 80.72 %
```

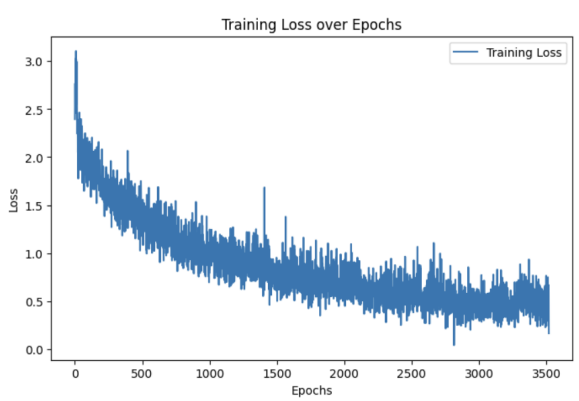
On regularized with weight_decay=0.001 and learning rate=0.01 it is

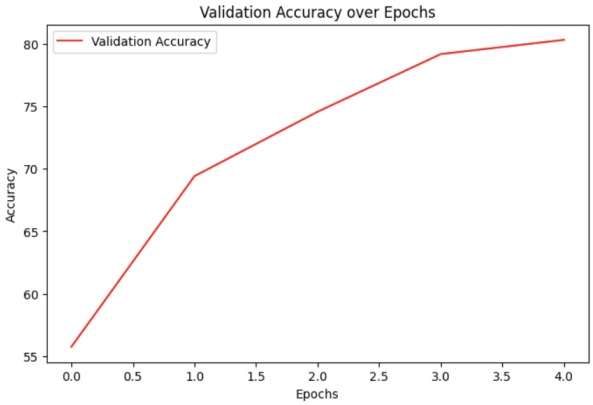





```
Accuracy of the network on the 10000 test images: 81.38 %
```

On regularized with weight_decay=0.001 and learning rate=0.02 it is






```
Accuracy of the network on the 10000 test images: 80.59 %
```