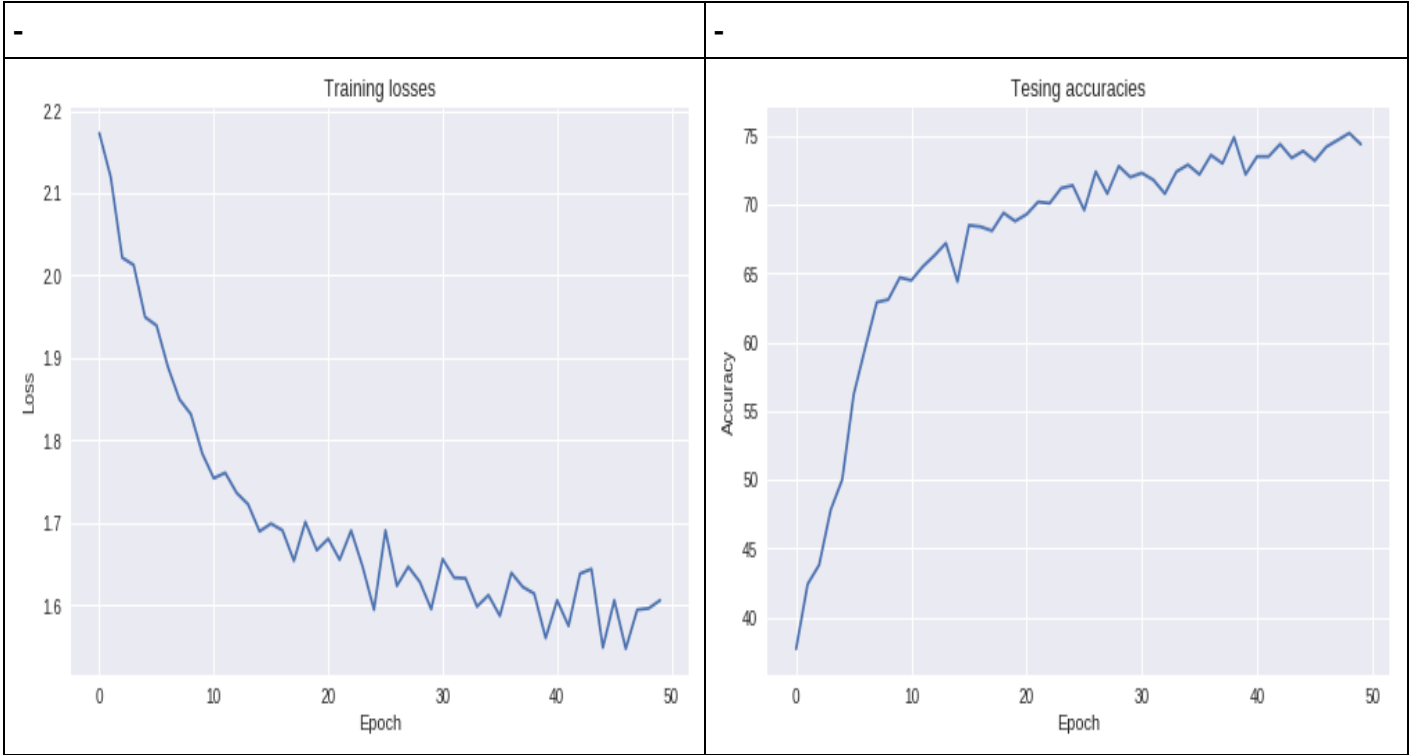# ConvNet(LeNet) on CIFAR10

Jiayu Wu | 905954229

1. Construction and Optimization

Learning rate: 5×10^{-2}, Num_epoch = 50, Test-accuracy: 74.4%.
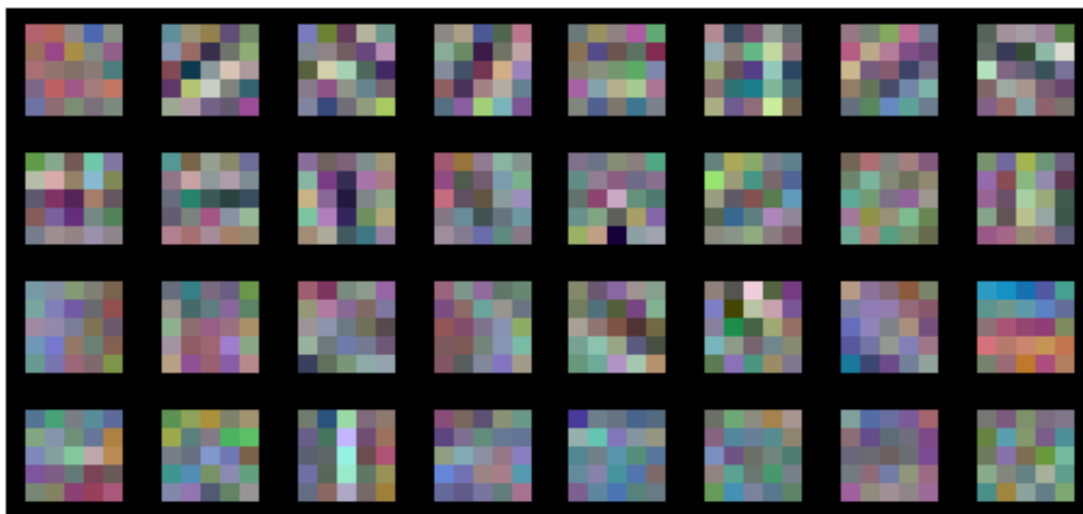
-	-

Training losses

Tesing accuracies

The

2. Alteration of LeNet

LeNet	3 Blocks	2 Blocks	1 Block
74.4	65.4	63.2	47.7

Given the same initialization and training parameters, fewer hidden layers results in a worse prediction accuracy, since the the network is not deep enough to capture the high dimensional nonlinear relationship. Whereas, with less parameter the training is a lot faster.

3. Visualization of Filters and Activations

32 filters of the first convoluational layer:

Filter response maps for a sample image:

Sample Image	Filter response maps