

CSE691 Assignment 5 Report

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1. The structure of the CNN is the following order
 - 2D Convolution with 32 filter of 5x5, stride 1
 - Relu activation
 - 2x2 Max pooling with stride 2
 - 2D Convolution with 32 filter of 5x5, stride 1
 - Relu activation
 - 2x2 Max pooling with stride 2
 - Fully connected with 512 hidden neurons
 - Relu activation
 - Fully connected with 120 hidden neurons
 - Relu activation
 - Fully connected that maps to 10 output class
 - Softmax

The criterion is cross entropy loss and optimizer is stochastic gradient decent with learning rate 0.001 and momentum 0.9. Both of these two parameters and the learning method are kept the same from previous implementation. The number of epochs is 8.

2. In the original implementation, the accuracy with epoch = 2 is 65% and with epoch = 3 is 67%. In my implementation the epoch = 8 and achieved accuracy of 72%. Below is a side by side comparison of accuracy in different class with epoch 3 and 8 respectively.

Overall, there is an increase in accuracy.

Accuracy of plane : 77 %	Accuracy of plane : 71 %
Accuracy of car : 71 %	Accuracy of car : 86 %
Accuracy of bird : 59 %	Accuracy of bird : 53 %
Accuracy of cat : 49 %	Accuracy of cat : 52 %
Accuracy of deer : 59 %	Accuracy of deer : 76 %
Accuracy of dog : 47 %	Accuracy of dog : 63 %
Accuracy of frog : 86 %	Accuracy of frog : 78 %
Accuracy of horse : 71 %	Accuracy of horse : 83 %
Accuracy of ship : 71 %	Accuracy of ship : 82 %
Accuracy of truck : 76 %	Accuracy of truck : 78 %