

11/03/2022

Homework 5

1 Number of Parameters

Layer	Calculation	Bias	Total
conv1	$3 * 96 * 11^2$	96	34,944
conv2	$96 * 256 * 5^2$	256	614,656
conv3	$256 * 384 * 3^2$	384	885,120
conv4	$384 * 256 * 3^2$	256	884,992
conv5	$256 * 128 * 3^2$	128	295,040
linear1	$6912 * 1024$	1024	7,078,912
linear2	$1024 * 1024$	1024	1,049,600
linear3	$1024 * 11$	11	11,275
Total			10,854,539

2 CIFAR10 Accuracy Improvements

A variety of techniques were used to improve the CIFAR10 accuracy. First, more convolutional neural network layers were added, and batch norms were applied throughout to help stabilize the model and improve accuracy. Additionally, dropout layers were added to help mitigate the effects of overfitting to the training dataset. Data augmentation was also used - in this case, random horizontal flip was utilized to augment the dataset.