CS547-HW4

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1 Introduction

In HW4 we are asked to train a deep residual convolution network on a GPU with PyTorch for the CIFAR100 dataset, use pretrained model and do distributed training.

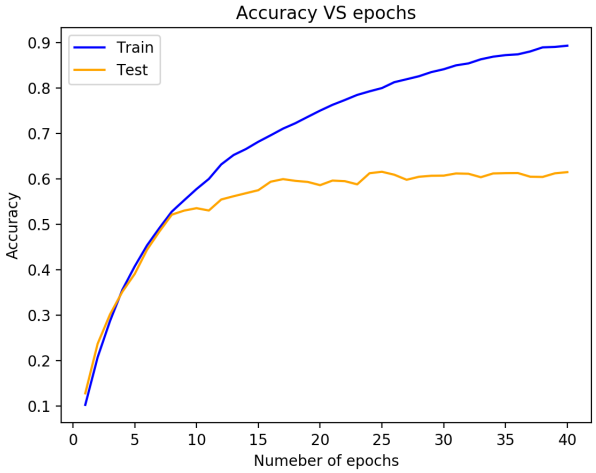
2 Result

2.1 Resnet in CIFAR100

Test Accuracy is 61.5%
Parameters are shown in the table below:

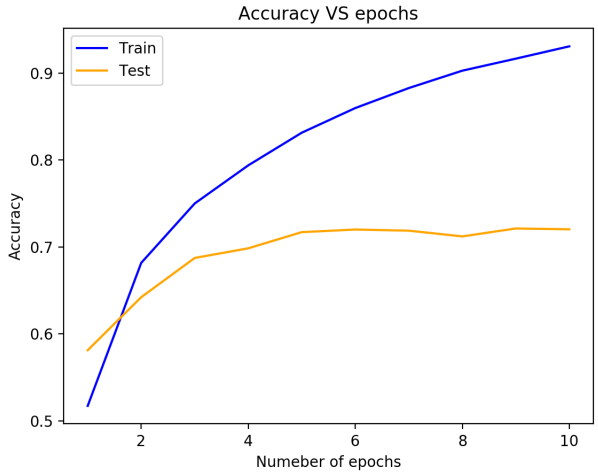
$learningrate = 0.001$
$weightdecay = 5e-4$
$epochs = 50$
$batch_size = 64$

And accuracy vs epoches is shown as below:



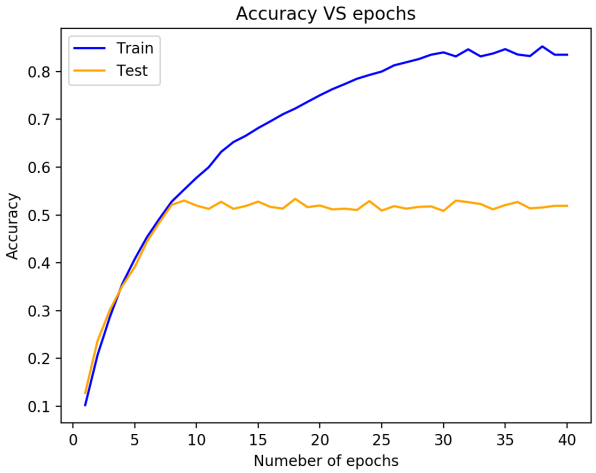
2.2 pretrained Resnet18 in CIFAR100

Test Accuracy is 72.03%
Just using the pretrained Resnet18 and adding one MLP in before the output, I trained this model 10 epochs. Considering the input size is different, I use transform to resize the dimension. And accuracy vs epochs is shown as below:



2.3 Resnet in TinyImageNet

Test Accuracy is 52.8%
I just change the input size of Resnet model in CIFAR100 (32 to 64). And the accuracy vs epochs is shown as below:



2.4 Resnet in CIFAR100 SYN

Test Accuracy is 61.8%
I used distributed training in this section. And accuracy vs epochs is shown as below: