# Results of LoRA  Part Two

Average Loss = 0.32639601368883936
**********
BEFORE LoRA APPLICATION
Layer Name = layers.0.linear1.weight
Parameter Size = torch.Size([1000, 784])
Layer Name = layers.0.linear1.bias
Parameter Size = torch.Size([1000])
Layer Name = layers.0.linear2.weight
Parameter Size = torch.Size([2000, 1000])
Layer Name = layers.0.linear2.bias
Parameter Size = torch.Size([2000])
Layer Name = layers.0.linear3.weight
Parameter Size = torch.Size([784, 2000])
Layer Name = layers.0.linear3.bias
Parameter Size = torch.Size([784])
Layer Name = layers.1.linear1.weight
Parameter Size = torch.Size([1000, 784])
Layer Name = layers.1.linear1.bias
Parameter Size = torch.Size([1000])
Layer Name = layers.1.linear2.weight
Parameter Size = torch.Size([2000, 1000])
Layer Name = layers.1.linear2.bias
Parameter Size = torch.Size([2000])
Layer Name = layers.1.linear3.weight
Parameter Size = torch.Size([784, 2000])
Layer Name = layers.1.linear3.bias
Parameter Size = torch.Size([784])
Layer Name = mlp_head.weight
Parameter Size = torch.Size([10, 784])
Layer Name = mlp_head.bias
Parameter Size = torch.Size([10])
**********
Total Number of Parameters = 8719418
Accuracy Before Application of LoRA
**********
accuracy=95.7
**********
Wrong Count for Digit 0 = 12
Wrong Count for Digit 1 = 6
Wrong Count for Digit 2 = 38
Wrong Count for Digit 3 = 116
Wrong Count for Digit 4 = 24
Wrong Count for Digit 5 = 38
Wrong Count for Digit 6 = 45
Wrong Count for Digit 7 = 48
Wrong Count for Digit 8 = 43
Wrong Count for Digit 9 = 60

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AFTER LoRA APPLICATION
Layer Name layers.0.linear1.bias
Parameter Size torch.Size([1000])
Layer Name layers.0.linear1.parametrizations.weight.original
Parameter Size torch.Size([1000, 784])
Layer Name layers.0.linear1.parametrizations.weight.0.lora_A
Parameter Size torch.Size([1, 784])
Layer Name layers.0.linear1.parametrizations.weight.0.lora_B
Parameter Size torch.Size([1000, 1])
Layer Name layers.0.linear2.bias
Parameter Size torch.Size([2000])
Layer Name layers.0.linear2.parametrizations.weight.original
Parameter Size torch.Size([2000, 1000])
Layer Name layers.0.linear2.parametrizations.weight.0.lora_A
Parameter Size torch.Size([1, 1000])
Layer Name layers.0.linear2.parametrizations.weight.0.lora_B
Parameter Size torch.Size([2000, 1])
Layer Name layers.0.linear3.bias
Parameter Size torch.Size([784])
Layer Name layers.0.linear3.parametrizations.weight.original
Parameter Size torch.Size([784, 2000])
Layer Name layers.0.linear3.parametrizations.weight.0.lora_A
Parameter Size torch.Size([1, 2000])
Layer Name layers.0.linear3.parametrizations.weight.0.lora_B
Parameter Size torch.Size([784, 1])
Layer Name layers.1.linear1.bias
Parameter Size torch.Size([1000])
Layer Name layers.1.linear1.parametrizations.weight.original
Parameter Size torch.Size([1000, 784])
Layer Name layers.1.linear1.parametrizations.weight.0.lora_A
Parameter Size torch.Size([1, 784])
Layer Name layers.1.linear1.parametrizations.weight.0.lora_B
Parameter Size torch.Size([1000, 1])
Layer Name layers.1.linear2.bias
Parameter Size torch.Size([2000])
Layer Name layers.1.linear2.parametrizations.weight.original
Parameter Size torch.Size([2000, 1000])
Layer Name layers.1.linear2.parametrizations.weight.0.lora_A
Parameter Size torch.Size([1, 1000])
Layer Name layers.1.linear2.parametrizations.weight.0.lora_B
Parameter Size torch.Size([2000, 1])
Layer Name layers.1.linear3.bias
Parameter Size torch.Size([784])
Layer Name layers.1.linear3.parametrizations.weight.original
Parameter Size torch.Size([784, 2000])
Layer Name layers.1.linear3.parametrizations.weight.0.lora_A
Parameter Size torch.Size([1, 2000])
Layer Name layers.1.linear3.parametrizations.weight.0.lora_B
Parameter Size torch.Size([784, 1])
Layer Name mlp_head.weight
Parameter Size torch.Size([10, 784])
```

Layer Name mlp_head.bias
Parameter Size torch.Size([10])
**********
PARAMETERS WHERE LoRA NOT IN NAME
Layer Name = layers.0.linear1.bias
Layer Shape = torch.Size([1000])
Layer Name = layers.0.linear1.parametrizations.weight.original
Layer Shape = torch.Size([1000, 784])
Layer Name = layers.0.linear2.bias
Layer Shape = torch.Size([2000])
Layer Name = layers.0.linear2.parametrizations.weight.original
Layer Shape = torch.Size([2000, 1000])
Layer Name = layers.0.linear3.bias
Layer Shape = torch.Size([784])
Layer Name = layers.0.linear3.parametrizations.weight.original
Layer Shape = torch.Size([784, 2000])
Layer Name = layers.1.linear1.bias
Layer Shape = torch.Size([1000])
Layer Name = layers.1.linear1.parametrizations.weight.original
Layer Shape = torch.Size([1000, 784])
Layer Name = layers.1.linear2.bias
Layer Shape = torch.Size([2000])
Layer Name = layers.1.linear2.parametrizations.weight.original
Layer Shape = torch.Size([2000, 1000])
Layer Name = layers.1.linear3.bias
Layer Shape = torch.Size([784])
Layer Name = layers.1.linear3.parametrizations.weight.original
Layer Shape = torch.Size([784, 2000])
Layer Name = mlp_head.weight
Layer Shape = torch.Size([10, 784])
Layer Name = mlp_head.bias
Layer Shape = torch.Size([10])
**********
PARAMETERS WHERE LoRA IN NAME
Layer Name = layers.0.linear1.parametrizations.weight.0.lora_A
Layer Shape = torch.Size([1, 784])
Layer Name = layers.0.linear1.parametrizations.weight.0.lora_B
Layer Shape = torch.Size([1000, 1])
Layer Name = layers.0.linear2.parametrizations.weight.0.lora_A
Layer Shape = torch.Size([1, 1000])
Layer Name = layers.0.linear2.parametrizations.weight.0.lora_B
Layer Shape = torch.Size([2000, 1])
Layer Name = layers.0.linear3.parametrizations.weight.0.lora_A
Layer Shape = torch.Size([1, 2000])
Layer Name = layers.0.linear3.parametrizations.weight.0.lora_B
Layer Shape = torch.Size([784, 1])
Layer Name = layers.1.linear1.parametrizations.weight.0.lora_A
Layer Shape = torch.Size([1, 784])
Layer Name = layers.1.linear1.parametrizations.weight.0.lora_B
Layer Shape = torch.Size([1000, 1])
Layer Name = layers.1.linear2.parametrizations.weight.0.lora_A
Layer Shape = torch.Size([1, 1000])

Layer Name = layers.1.linear2.parametrizations.weight.0.lora_B
Layer Shape = torch.Size([2000, 1])
Layer Name = layers.1.linear3.parametrizations.weight.0.lora_A
Layer Shape = torch.Size([1, 2000])
Layer Name = layers.1.linear3.parametrizations.weight.0.lora_B
Layer Shape = torch.Size([784, 1])
**********
INCREMENT OF PARAMETERS AFTER APPLICATION OF LoRA
Non LoRA Parameters = 8719418
LoRA Parameters = 15136
% Parameters Increment Due to LoRA 0.1735895675605872
**********
accuracy=61.529999999999994
**********
Wrong Count for Digit 0 = 117
Wrong Count for Digit 1 = 340
Wrong Count for Digit 2 = 711
Wrong Count for Digit 3 = 12
Wrong Count for Digit 4 = 85
Wrong Count for Digit 5 = 353
Wrong Count for Digit 6 = 167
Wrong Count for Digit 7 = 606
Wrong Count for Digit 8 = 959
Wrong Count for Digit 9 = 497