

ICSI 435/535 Artificial Intelligence

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Install Dependencies:

```
pip install numpy scikit-image matplotlib scikit-learn
```

Run Experiments:

(a) TwoLayerNet with SGD:

```
python ANN_LeNet_MNIST_demo.py -model TwoLayerNet -iter 25000 -opti SGD
```

```
TRAIN--> Correct: 56751/60000 | Acc: 0.9458  
TEST--> Correct: 9443/10000 | Acc: 0.9443
```

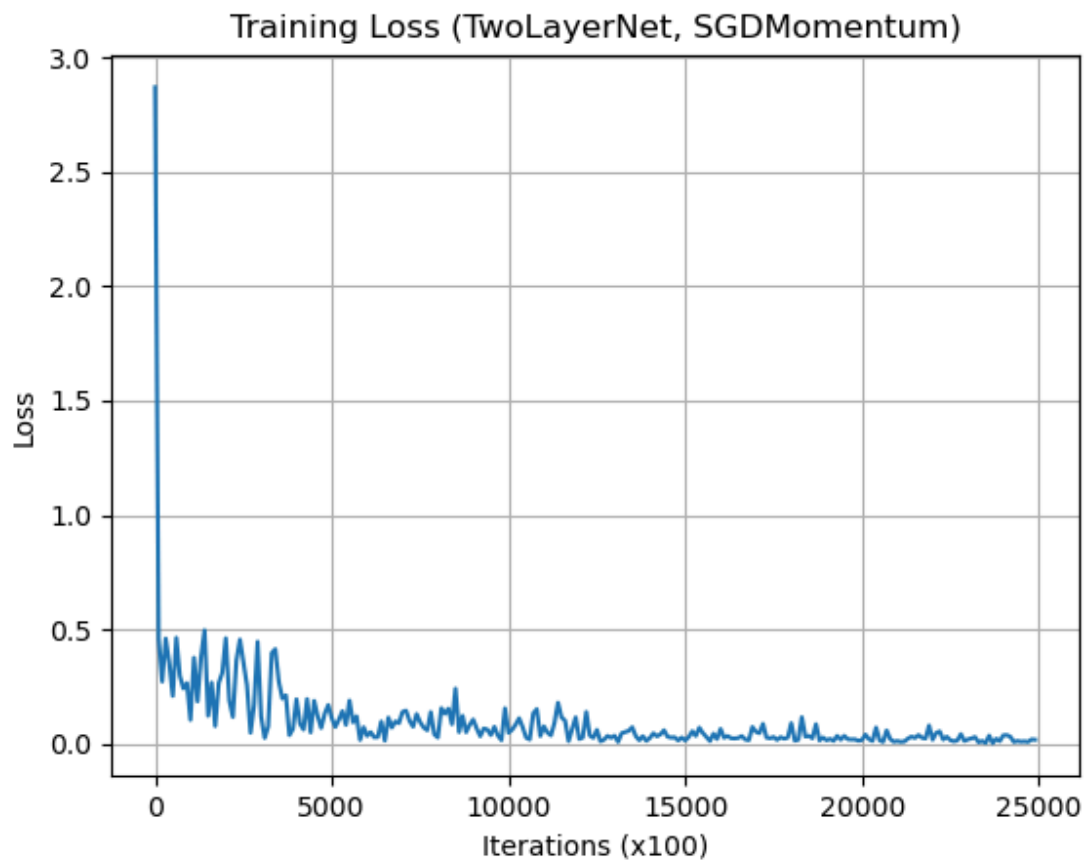


(a) TwoLayerNet with SGDMomentum

```
python ANN_LeNet_MNIST_demo.py -model TwoLayerNet -iter 25000 -opti
```

SGDMomentum

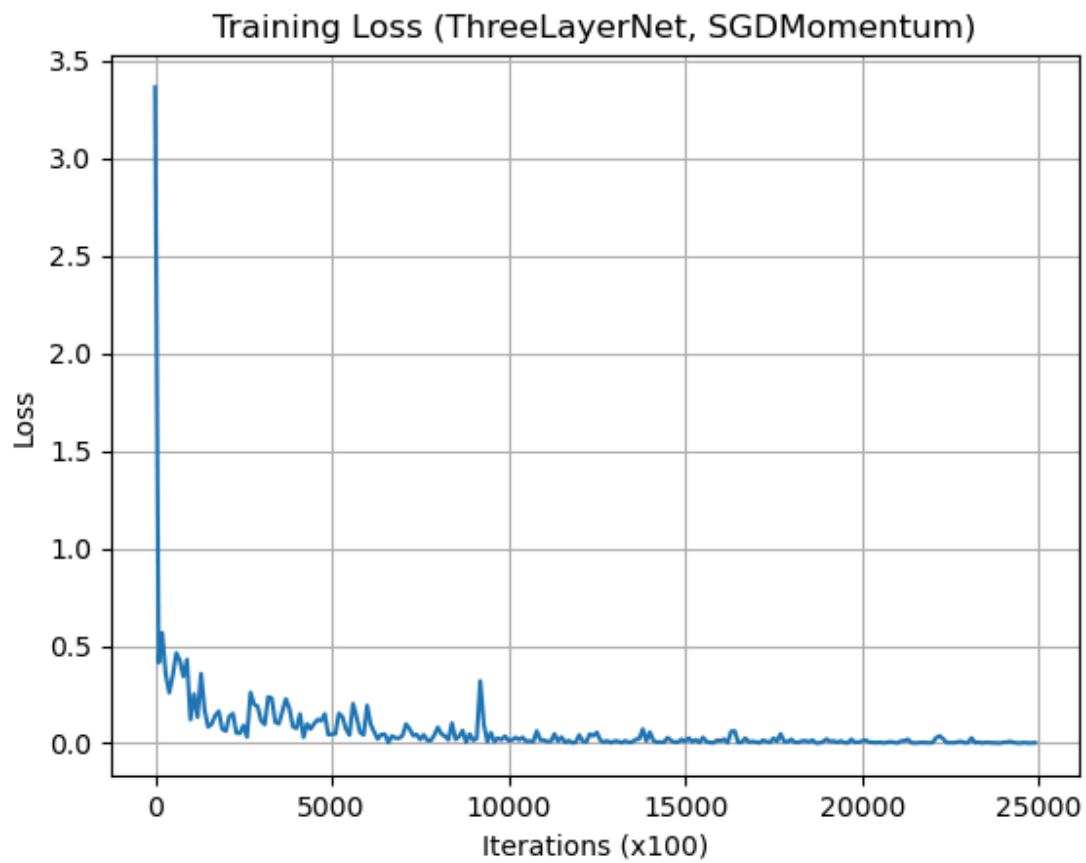
```
TRAIN--> Correct: 59719/60000 | Acc: 0.9953  
TEST--> Correct: 9787/10000 | Acc: 0.9787
```



(b) ThreeLayerNet (H1=300, H2=100)

```
python ANN_LeNet_MNIST_demo.py -model ThreeLayerNet -H1 300 -H2 100 -iter  
25000
```

```
TRAIN--> Correct: 59977/60000 | Acc: 0.9996  
TEST--> Correct: 9797/10000 | Acc: 0.9797
```



(c) LeNet5

python ANN_LeNet_MNIST_demo.py -model LeNet5 -iter 2000 -opti SGDMomentum

```
TRAIN--> Correct: 23755/60000 | Acc: 0.3959  
TEST--> Correct: 4007/10000 | Acc: 0.4007
```

