Implementation of Multilayer Perceptron fro Scratch

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Contents

Implementation of Multilayer Perceptron from Scratch

Initialize Model Parameters

```
num_inputs, num_outputs, num_hiddens = 784, 10, 256

W1 = nd.random.normal(scale=0.01, shape=(num_inputs, num_hiddens))
b1 = nd.zeros(num_hiddens)
W2 = nd.random.normal(scale=0.01, shape=(num_hiddens,
b2 = nd.zeros(num_outputs)
params = [W1, b1, W2, b2]

for param in params:
    param.attach_grad()
```

Activation Function

```
def relu(X):
    return nd.maximum(X, 0)
```

The model

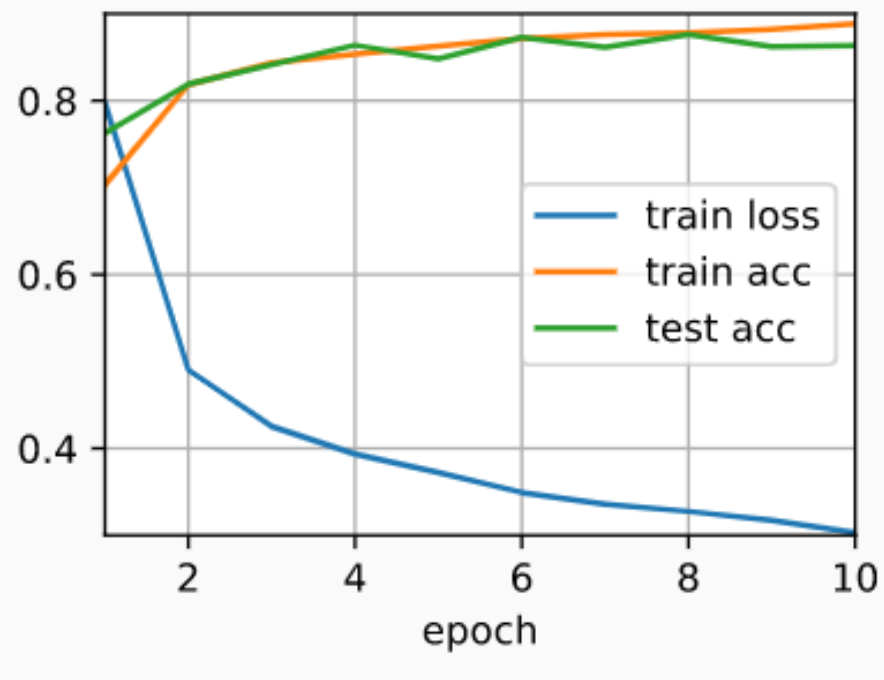
```
def net(X):
    X = X.reshape((-1, num_inputs))
    H = relu(nd.dot(X, W1) + b1)
    return nd.dot(H, W2) + b2
```

The Loss Function

```
loss = gluon.loss.SoftmaxCrossEntropyLoss()
```

Training

```
num_epochs, lr = 10, 0.5
d2l.train_ch3(net, train_iter, test_iter, loss, num_epochs,
              lambda batch_size: d2l.sgd(params, lr, batch_size))
```



Thank You !

Does anyone have any questions?

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Resources

Dive into Deep Learning