Machine Learning Spring 2022
Assignment 5 Report

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1 Task # 1

1.1 Loss Curve

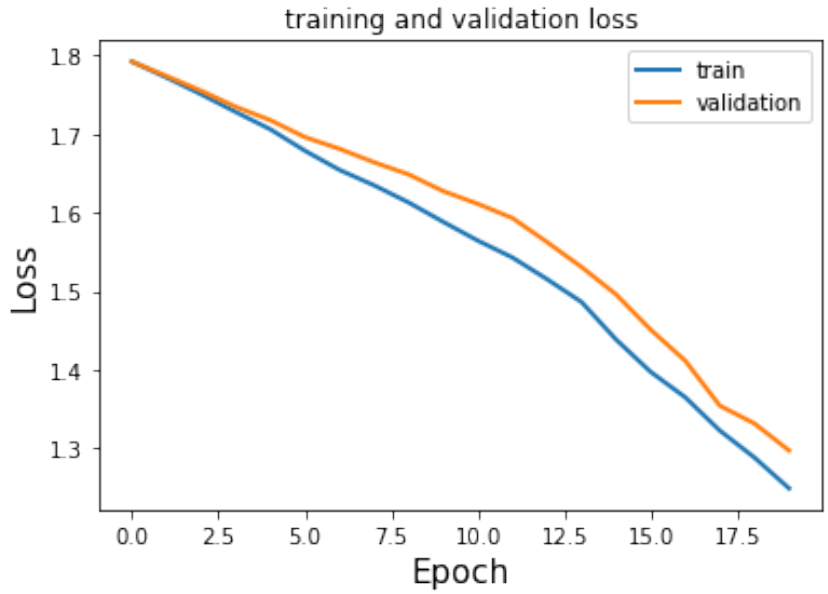

Figure 1: Loss Curve

1.2 Accuracy Curve

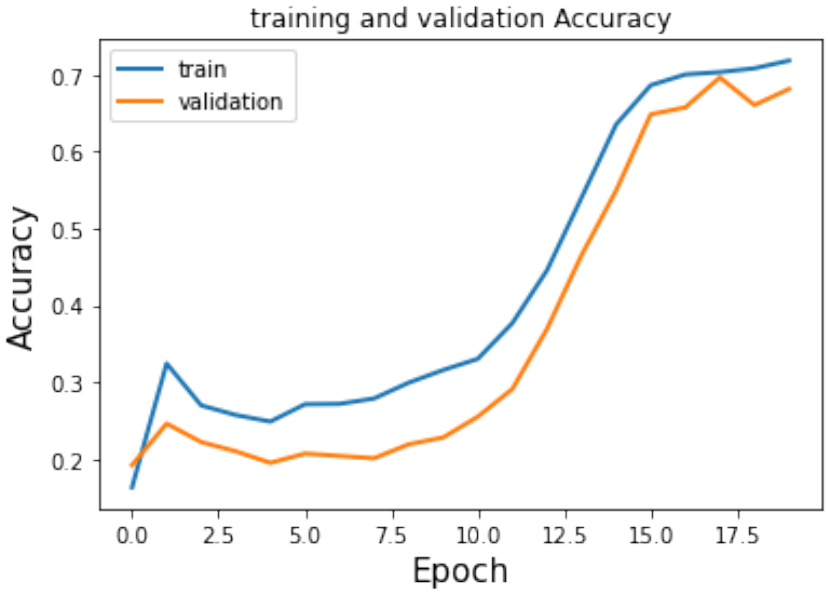

Figure 2: Accuracy Curve

1.3 Predictions

- best prediction: 5.1663
- worst prediction: 0.3313

1.4 Experiments

Experiment # 1
model = GCN((conv1): GCNConv(3703, 128) (conv2): GCNConv(128, 6))
learning rate = 0.01
epochs = 20
batch size = 64
Accuracy

- Train Set: 71.85 %
- Validation Set: 68.16 %
- Test Set: 70.71 %

Loss

- Train Set: 1.2491
- Validation Set: 1.2973
- Test Set: 1.2532

Experiment # 2
model = GCN((conv1): GCNConv(3703, 128) (conv2): GCNConv(128, 6))
learning rate = 0.01
epochs = 10
batch size = 64
Accuracy

- Train Set: 31.60 %
- Validation Set: 22.82 %
- Test Set: 32.20 %

Loss

- Train Set: 1.5880
- Validation Set: 1.6271
- Test Set: 1.5717

2 Task # 2

2.1 Loss Curve

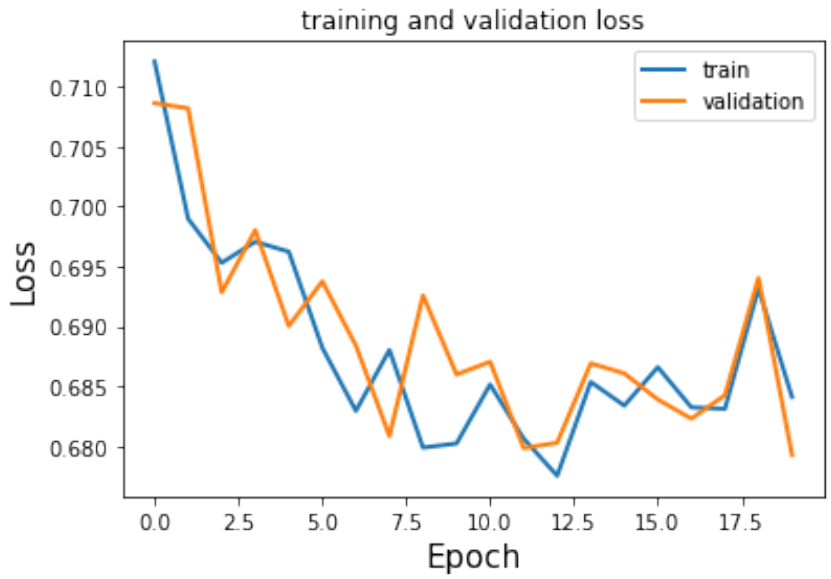

Figure 3: Loss Curve

2.2 Accuracy Curve

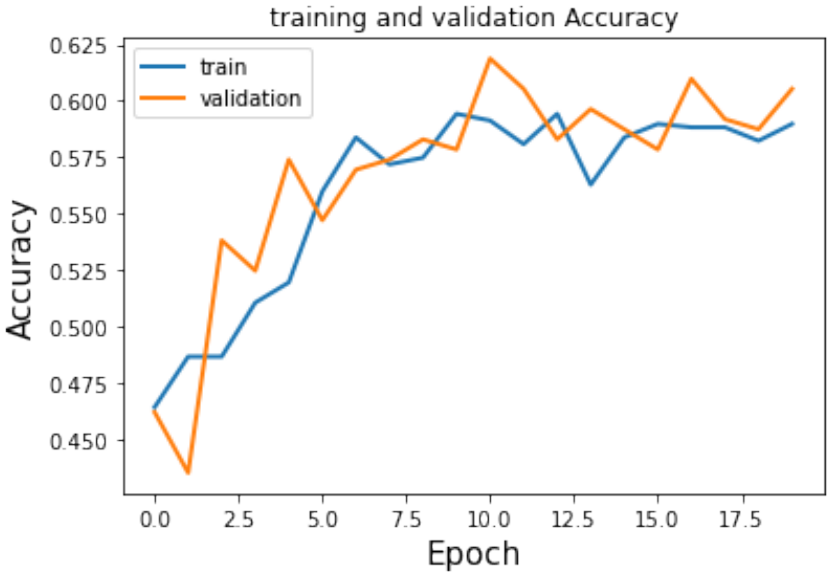

Figure 4: Accuracy Curve

2.3 Predictions

- best prediction: 1.2773
- worst prediction: 0.0820

2.4 Experiments

Experiment # 1
GCN((conv1): GCNConv(1, 256) (conv2): GCNConv(256, 256) (conv3): GCNConv(256, 128) (lin): Linear(in_features=128, out_features=2, bias=True))
learning rate = 0.001
epochs = 20
batch size = 64

Accuracy

- Train Set: 58.98 %
- Validation Set: 60.54 %
- Test Set: 55.86 %

Loss

- Train Set: 0.6841
- Validation Set: 0.6793
- Test Set: 0.7168

Experiment # 2
model = GCN((conv1): GCNConv(1, 256) (conv2): GCNConv(256, 256) (conv3): GCNConv(256, 128) (lin): Linear(in_features=128, out_features=2, bias=True))
learning rate = 0.001
epochs = 10
batch size = 64

Accuracy

- Train Set: 59.43 %
- Validation Set: 57.85 %
- Test Set: 56.31 %

Loss

- Train Set: 6802
- Validation Set: 0.6860
- Test Set: 0.7116