Programming 1

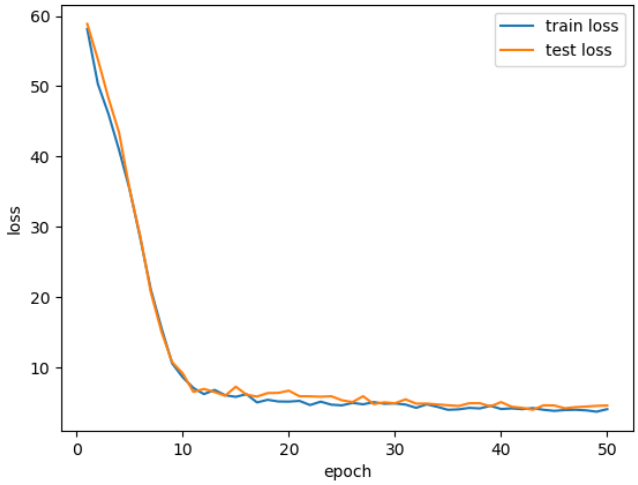

Figure 1: Training loss vs epochs

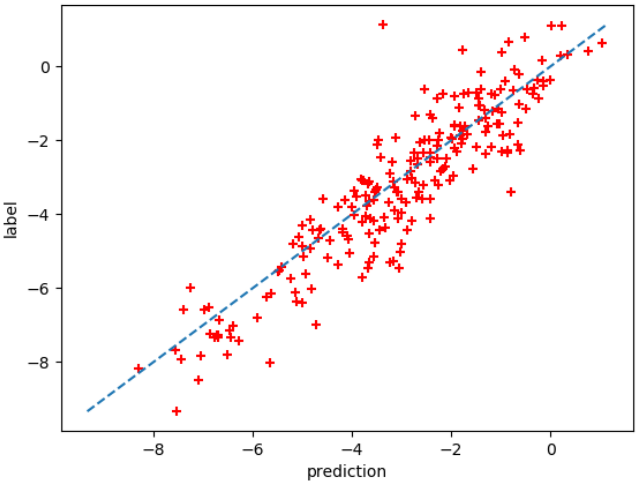

Figure 2: Labels vs predictions

Architecture:

- GCNConv(37, 64, cached=False, normalize=True, activation=Relu, Dropout=True)
- GCNConv(64, 128, cached=False, normalize=True, activation=Relu,Dropout=True)
- GCNConv(128, 256, cached=False, normalize=True, activation=Relu,Dropout=True)
- Global_max_pool()

- Linear(256,128, activation=Relu(), batchnorm=True)
- Linear(128,1)

Hyperparmeters:

- Batch size = 64
- Optimizer: Adam
- learning rate: 1e-3
- num epoch = 50

Test Performance: Summation of mean square error: 191.03

Programming 2

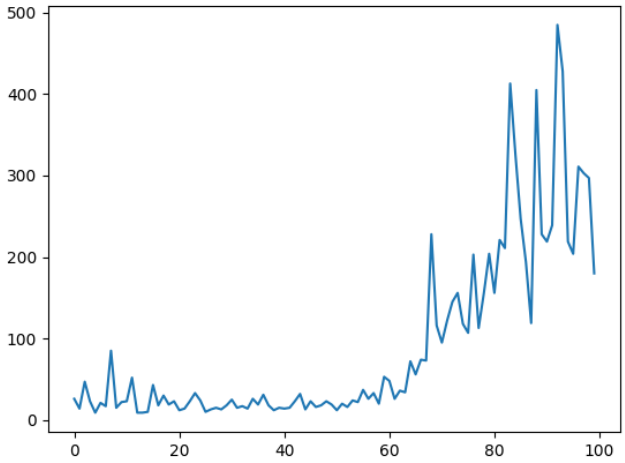

Figure 3: Episode duration vs episodes

Architecture:

- Linear layer (in_dim=4, out_dim=64, activation=Relu)
- Linear layer (in_dim=64, out_dim=2, activation=None)

Hyperparmeters:

- Batch size = 128
- GAMMA = 0.999
- EPS_START = 1.0
- EPS_END = 0.04
- EPS_DECAY = 0.0095
- TARGET_UPDATE = 10
- MEMORY_CAPACITY = 10000
- Optimizer: Adam
- learning rate: 1e-3
- num episodes = 100
- Network weight initialization: Xavier normal

Performance on test episodes: Total episodes = 10
Episode duration: = [291,267,216,291,269,298,271,303,381,223]
Mean duration for testing= 281.0
Link for video: Test episodes video