

Homework 4

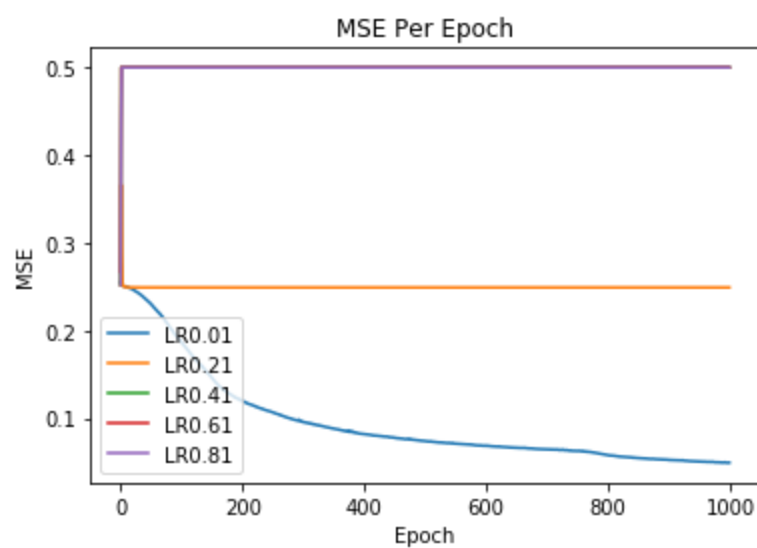
Math 189Z – Covid-19: Data Analytics and Machine Learning

Nico Espinosa Dice

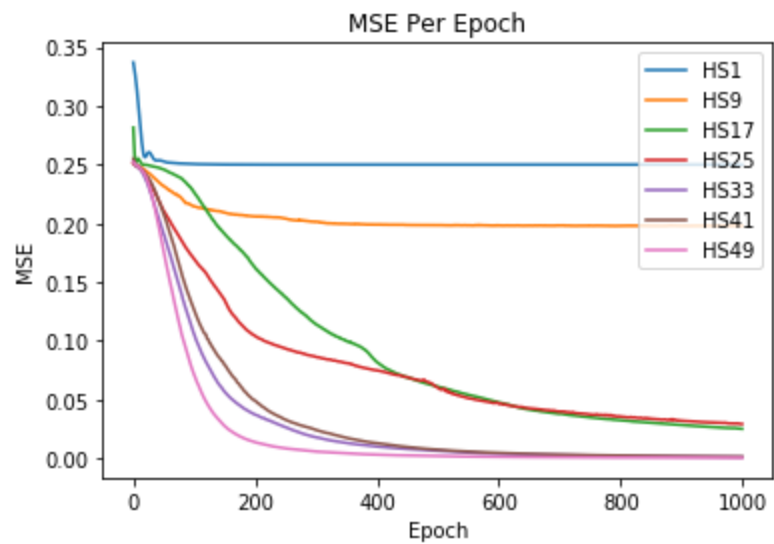
April 30, 2020

Feed Forward Tasks

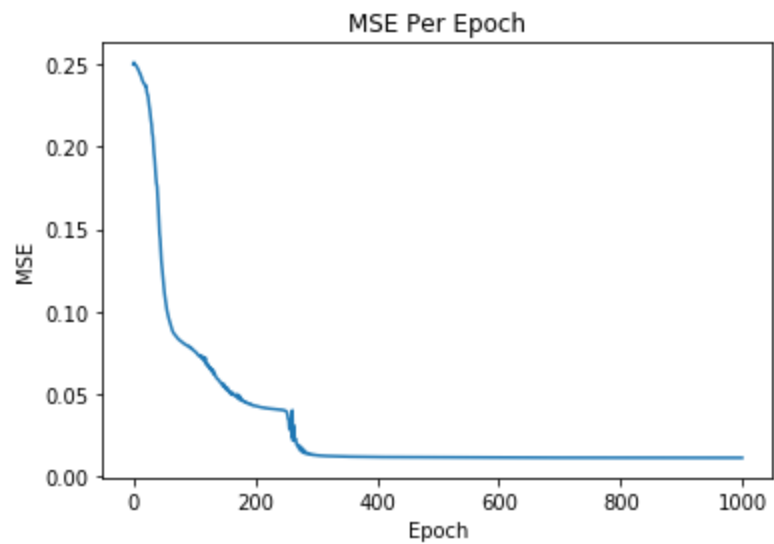
Graph of Loss Curve for 5 Different Learning Rates



Graph of Loss Curve for 5 Different Numbers of Hidden Nodes

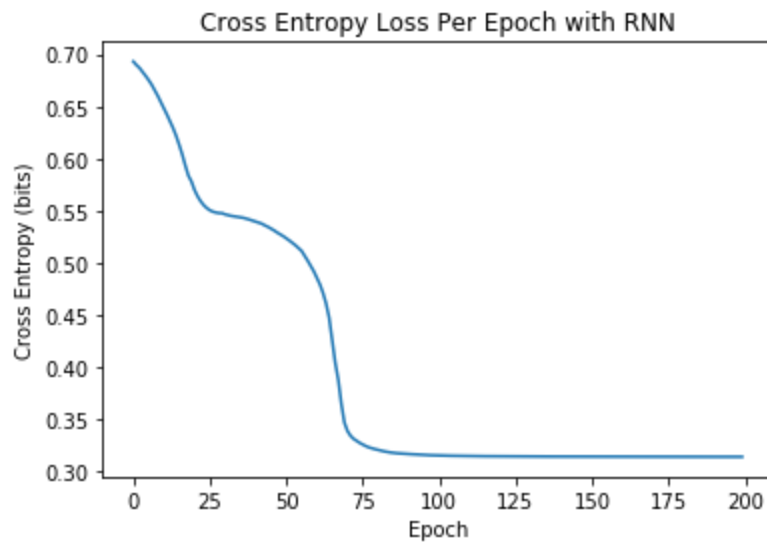


Graph of Loss Curve with an Additional Layer



RNN Task

Loss Curve of RNN



Screenshot of RNN Classifying 5 Sequences of Different Lengths

Length Sequence: [0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1]
 tensor([[9.9909e-01, 9.1440e-04]], grad_fn=<SoftmaxBackward>)

Length Sequence: [0, 1, 1, 0, 0, 1, 1, 1, 1, 0, 1, 1]
 tensor([[9.9913e-01, 8.7000e-04]], grad_fn=<SoftmaxBackward>)

Length Sequence: [0, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0]
 tensor([[0.0010, 0.9990]], grad_fn=<SoftmaxBackward>)

Length Sequence: [0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1]
 tensor([[2.9474e-05, 9.9997e-01]], grad_fn=<SoftmaxBackward>)

Length Sequence: [0, 0, 1, 0, 0, 1, 1, 1, 1, 1, 0, 1]
 tensor([[2.8808e-05, 9.9997e-01]], grad_fn=<SoftmaxBackward>)

Length Sequence: [1, 1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0]
 tensor([[0.0011, 0.9989]], grad_fn=<SoftmaxBackward>)