

Autonomous Intelligent Systems

Laboratory

Exercise Nr. 1

Classifying MNIST with MLPs

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Introduction:

Implementation of a Neural Network (or MPL) and classifying the MNIST digits with it. MNIST is a "well hung" dataset that has been used a lot over the years to benchmark different classification algorithms.

Results:

After defining a neural network architecture in python with the parameters, I found the following results.

1. Parameters : (learning rate = 0.1, batch_size=128, epochs = 50, regularization=dropout, sgd, unit_cells=(100,100,10), activation_func='relu')

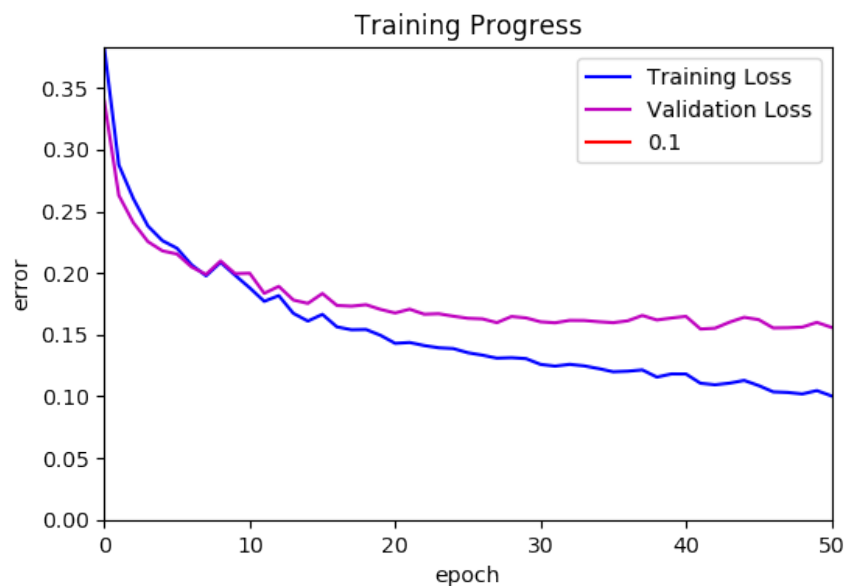


Figure :1 "learning rate = 0.1"

2. Parameters : (learning rate = 0.01, batch_size=64, epochs=50, regularization=dropout, sgd, unit_cells=(100,100,10), activation_func='relu')

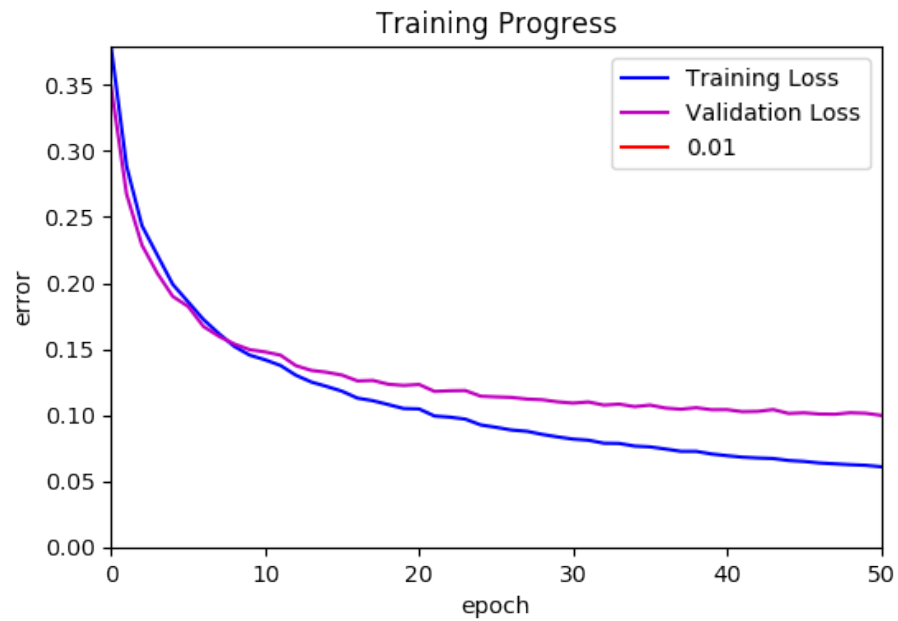


Figure 2: "learning rate = 0.01"