159.372 Intelligent Machines
Lab 5: The Multi-Layer Perceptron

Marsland, S. (2015). Machine Learning: An Algorithmic Perspective. New York: Chapman and Hall

1 Introduction

In order to minimise the overhead of new datasets, and to make comparison between the Perceptron and Multi-Layer Perceptron simpler, we will carry on using the MNIST dataset. There is more experimentation to do, since you will need to consider different numbers of hidden nodes as well as setting the learning rate. Download the MLP code from stream and see how much better you can do than just using the Perceptron. **mlp.py** is the implementation of multi layer perceptron, and **mnist.py** reads the MNIST dataset and trains a MLP to recognize the digits.

You task is to read and understand how the code implementation works.

What is the effect of changing the number of hidden nodes on the test error? (better to visualize it with a graph)

How much difference does early stopping make?