

Assignment 6

for NeuroComputing/Theoretical Neuroscience 2014

This assignment has two parts with different due dates. The first part is due next Thursday in class so that we can talk about it. The next part is due on the Friday a week later, but I expect to discuss this project with you several times within the two weeks

Part 1:

- a. Implement a single-layer perceptron and train it to translate the digital letters given in file *pattern1* into the corresponding ASCII representation. Plot a training curve and interpret your results.
- b. Implement an MLP and train it to translate the digital letters given in file *pattern1* into the corresponding ASCII representation. Plot a training curve and interpret your results.
- c. Investigate how much noise the different perceptrons (with and without hidden nodes) can tolerate in the pattern before being unable to recognize a letter.
- d. Which letter is represented in file *pattern2*?

Part 2:

This part is about applying an MLP perceptron to any data you find interesting (e.g. from the UCI Machine Learning repository at <http://archive.ics.uci.edu/ml/>) or your own data and discuss the performance or possible problems.

Send your results for part 1 to prof6508@cs.dal.ca with subject line A6a by Friday, March 7, and your brief report of part 2 with subject line A6b by Friday, March 14.