EECS/EEAP 484 Computational Intelligence

PS6: Backpropagation, part II

In this problem set, you should use Matlab's Neural-Net toolbox to analyze the financial data from problem-set 1. For the financial data, you should divide the training data into a training set and a test set. (This can be done for you automatically by Matlab). If you "overtrain", you will find that the function fit to the training set will keep improving while the fit to the test set can start getting worse. This shows that you are losing generality and cannot trust the network to give reliable outputs for novel inputs.

Once you have trained a network on the training data, simulate your network with the validation data. Decide how to pick stocks from among the validation set, based on your network simulations. (E.g., you might decide that if the network predicts a return greater than some percentage, then the stock is recommended). Report on the returns on your chosen stocks. For the validation set, plot out the actual stock-price changes and the network's predicted stock-price changes for each of the 51 validation stocks. Report on training times, observations on overtraining, and recommended number of interneurons.