Machine Learning Assignment 2b
Simple Classifiers

1. Download the USPS data set from the Moodle Page together with a skeleton python file, named `assignment_perceptron_stub.py`. It is the same data as for the NCC assignment, also the stub is very similar to the previous assignment.

2. Linear Perceptrons

   a) Program a linear perceptron that classifies the digit **0** against all others

   b) Train the perceptron on 70% of the entire data set

   c) In each iteration of the training phase store the prediction accuracy on the remaining 30% of the data (the test data set)

   d) The perceptron function should return the accuracy on the test data and the weight vector

   e) Plot the accuracy as a function of iterations and plot the weight vector as an image, as in Figure 1

3. Merge this code with the NCC code you have already written and try to produce a figure similar to the one below.

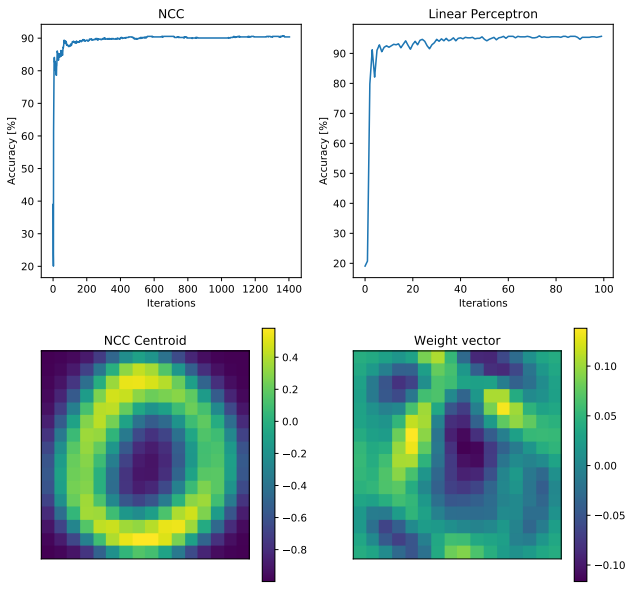

Figure 1: *Left*: Classification accuracy as function of iterations. *Right*: Weight vector for digit 3 plotted as image