Computer Science 152, Fall 2010
Assignment 4
Due Thur. 7 October 2010

Research and select a SVM (support-vector-machine) training and execution implementation. Some standard choices are listed below, but you might find others. In this assignment you will be a user, rather than coding your own from scratch.

Demonstrate your implementation on the parity6.in dataset on the CS 152 website, which is a 6-input exclusive-or function.

If possible, use two different kernel function choices: (a) radial-basis functions, and (b) a polynomial of adequate degree, to be determined. (Show results of 3-different spreads in case (a), and 3-different degrees in case (b), each with 2 different "C" values.) Results include accuracy and number of support vectors used.

Ideally, compare the result to what your MLP implementation provides, in terms of accuracy and training time. (If your MLP is not up to this task, just focus on the SVM.)

SVM Implementations		
Name	**Location**	**Comments**
libsvm	http://www.csie.ntu.edu.tw/~cjlin/libsvm/	Long-standing open-source implementation (C++ and Java) with a variety of language bindings.
svmtrain and **svmclassify** in Matlab Bioinformatics toolbox	Matlab software (available from CIS). Note that there are also 3rd party Matlab implementations that are not in the commercial release.	Commercial, but HMC has license
SVM^{light}	http://svmlight.joachims.org/	Academic release by Thorsten Joachims of Cornell
Links to many more listings	http://www.support-vector-machines.org/SVM_soft.html	
Still more listings	http://www.kernel-machines.org/software	