

## CSE 5693 Machine Learning HW4 (Due April 8, 2009)

### 1. Written assignment:

- (a) 9.4
- (b) 10.1
- (c) 10.3
- (d) 10.6

### 2. Programming assignment: Genetic Algorithm

Implement the genetic algorithm described in the book. Your implementation should allow variable-length individuals and should work on the datasets in earlier assignments.

Test your implementation on:

- (a) the play tennis problem (Table 3.2)
- (b) one other data set with continuous attribute values and multiple outcomes (same with HW2)

Again, you should have two programs:

- (a) learning the rules from a training set [parameters include population size, replacement rate, mutation rate, and number of generations/iterations]
- (b) classifying the instances in a test set with the learned rules

Your implementation should also report how accurate the genetic algorithm is on a data set and allow displaying the learned rules in human readable form. Use your favorite programming language (C, C++, Java, or LISP).