CSCI/ARTI 8950 Machine Learning

Assignment Number 7: Due 4/14/2009 (in class)

1. [**10 points**] The exclusive OR function (XOR) takes two binary (bit) inputs X1 and X2 and produces one binary output which is 1 if X1 and X2 are different and 0 otherwise.

   (a) Give a decision tree which correctly computes the XOR function for any values of X1 and X2.

   (b) Give a classifier in the format used by the GIL program which correctly computes the XOR function for any values of X1 and X2 (i.e. matches the value pairs that result in a 1 and does not match the others).

2. [**20 points**] Solve problem 8.3 on page 247 of the text book.

3. [**10 points**] Solve problem 7.1 on page 227 of the text book.