# CSCI/ARTI 8950 Machine Learning

# Assignment Number 6: Due Thursday 4/19/2007 (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 system 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. [**10 points**] Solve problem 7.1 on page 227 of the text book.

3. [**10 points**] Solve problem 8.3 on page 247 of the text book.

4. [**10 points**] Solve problem 10.1 on page 303 of the text book.

5. [**50 points**]

   Choose five of the research papers presented in class and provide a brief review for each of them (no more than half a page each). Your review for each paper should include:

   - Paper title
   - Which machine learning technique was used in the paper
   - What was the best thing you liked about the paper
   - What was the worst thing about the paper
   - How could you continue/extend the research described in the paper