Assignment 7

Due: 3/25

Note: Show all your work.

Problem 1 (20 points). For this problem, you will run bagging and boosting algorithms that are implemented on Weka on the *processed.hungarian-2.arff* dataset.

Run the following six classifier algorithms on the *processed.hungarian-2.arff* dataset (1) each classifier alone, (2) Bagging with the classifier, and (3) AdaBoostM1 with the classifier, and enter the accuracies (% correctly classified instances) in the following table:

	Classifier alone	Bagging with classifier	AdaBoostM1 with classifier
Naïve Bayes			
Logistic			
MultilayerPerceptron			
J48			
RandomForest			
IBk (with k = 10)			

You also need to include in your submission screenshots of all Weka's classification result windows. Do Bagging and AdaBoostM1 increase accuracies?

Problem 2 (10 points) This question is about a learning classifier system XCS which we discussed in the class. Consider the following population, which has the current set of rules:

1101 01
1#1# 01
1#0# 01
#0#1 10
#01# 10
10#1 10
1011 01

Suppose that a sample 1011 10 is extracted from the training dataset.

(1). Generate the match set.
(2). Determine the action from the match set.
(3). Generate the action set.
(4). Which rules are rewarded? Which rules are not rewarded?

Problem 3 (20 points). Use JMP Pro to build and test five classifier models – Naïve Bayes, KNN, Partition (decision tree), Boosted Tree, and Neural Network – following the instruction in *JMP-classification-assignment.pdf* file.

Submission:

Include all answers in a single file and name it *lastName_firstName*_HW7.EXT. Here, "EXT" is an appropriate file extension (e.g., docx or pdf). If you have multiple files, then combine all files into a single archive file. Name the archive file as *lastName_firstName*_HW7.EXT. Here, "EXT" is an appropriate archive file extension (e.g., zip or rar). Upload the file to Blackboard.