CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, April 25
10:30 – 11:00 AM
Davidson Hall, Room 207

THE APPLICATION OF DECISION TREES FOR DIAGNOSING LIVER DESEASE

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(Data Mining MS Thesis Presentation)

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Abstract: Liver disease is a major problem in India and many parts of the world. This thesis analyzed the performance of the C5.0, CHAID, QUEST, and CART algorithms in predicting liver disease based on results of blood tests. Two data sets were analyzed. The analysis took into account misclassification costs while reducing the number of parameters required by two, thus cutting the cost of the needed blood test by 20%. Analysis also showed that total bilirubin, direct bilirubin, alamine aminotransferase, asparate aminotransferase, and total proteins are important variables in evaluating for liver disease. The performance of the decision models was analyzed on the basis of total cost and average cost per customer. Gain and life charts were also used to analyze the performance. Analysis showed CHAID performs better than other models, followed by CART.

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