

*Faculty of Computer Science*  
*2002-2003 Seminar Series*

**A New Method for Evaluating Learning Algorithms**

By

**Huajie Zhang**

*Faculty of Computer Science*  
*University of New Brunswick*

*Wednesday November 20th, 2002*

*3:30 p.m.*

*ITC317*

**\*\*Refreshments will be served at 3:20 p.m.\*\***

Most traditional learning algorithms are error-based. That is, they construct a classification model with maximum predictive accuracy. However, many data mining applications require cases to be ranked by the probability of class membership. For example, in direct marketing, we often need a ranking of our customers on the basis of the probabilities that they are going to buy our products. Such a ranking is called a probability-based ranking. It is possible that an algorithm produces rankings of high quality, but yields poor probability estimates.

A crucial issue in developing learning algorithms for ranking is how to evaluate an algorithm in terms of the quality of rankings produced by it. This talk will introduce a new method for evaluating learning algorithms, that is, the area under the ROC (Receiver Operating Characteristics) curve, or simply denoted by AUC. In fact, AUC provides an effective way to evaluate the quality of a ranking.

This talk will discuss the concepts of ROC curve and AUC, the computation of AUC, the comparison between of AUC and error rate (accuracy), and the related work and research topics.

\*\*\*\*\*

**GRADUATE STUDENTS ARE ENCOURAGED TO ATTEND**

\*\*\*\*\*

---

---