

RUTGERS UNIVERSITY
DEPARTMENT OF STATISTICS AND BIOSTATISTICS
HILL CENTER #501, BUSCH CAMPUS, PISCATAWAY

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Seminar

Speaker: Susan Murphy, University of Michigan
Title: A Prediction Interval for the Misclassification Rate
Date: Wednesday March 25, 2009
Time: 3:20 PM
Place: 552 Hill Center

Abstract

When small data sets are used for classification it is crucial that we provide some measure of confidence for the estimated misclassification rate. However the misclassification rate is a non-smooth function of the classifier. Furthermore the estimated rate suffers from bias due to over-fitting and the misclassification rate is a "minimized" quantity. For all of these reasons the construction of measures of confidence such as estimates of variance and confidence/prediction intervals are challenging. We discuss this problem and propose a method based on the use of a smooth upper bound combined with the bootstrap. This upper bound utilizes the surrogate loss that is used in the construction of the classifier.

Joint research with Eric Laber