UNIVERSITY OF SYDNEY

SCHOOL OF MATHEMATICS AND STATISTICS

<u>Statistics Seminar</u>

Friday, 31 August 2007, 2.00pm

Carslaw 373

Classification and Prediction with Independent Component Regression

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Abstract

For high-dimensional data the number of variables needs to be reduced before conventional classification and regression techniques can be applied. Principal Component Regression selects a reduced number of predictors from the original variables, but these predictors can be unrelated to the outcome variables, as they are chosen merely by their contribution to variance. We propose a method which combines variable ranking with a selection of the best reduced subset of predictors. Variable ranking is achieved by canonical correlation analysis, and the selection of the best subset is accomplished with independent component analysis. The method is applicable to classification and regression problems with multivariate response variables. We demonstrate the performance of the method on real data and simulation studies and show that it compares favourably with recent supervised classification and prediction techniques.

Enquiries about the Statistics Seminar should be directed to
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