COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS
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ON DISCRIMINATION AND CLASSIFICATION WITH MULTIVARIATE REPEATED MEASURES DATA

Abstract

Multivariate repeated measures are very common in medical and pharmaceutical research. Clinical trials often report repeated outcome measures on more than one characteristic and on each characteristic at several time points. In this talk, we consider the classification and discrimination of this kind of continuous multivariate repeated measurements data based on the assumption of multivariate normality. The problem can not be solved under the classical method as the number of variables can become exceedingly large. For example, in diagnosis osteoporosis patient, a physician may take bone mineral density at four different anatomic locations on the body, each at five time points. This will result in a covariance matrix of order 20 x 20. We circumvent this problem by introducing some covariance structure on the repeated measures. Classification rules for populations with certain structured and unstructured mean vectors and under covariance structures will be discussed. We will present the results on two real data sets on these classification rules.

372 Science and Engineering Building
Thursday, October 11th, 2001
3:00 to 4:00 P.M.
(Refreshment at 2:30 to 3:00 P.M. in Room 368,
Science and Engineering Building)

About the speaker

Anuradha Roy is a Ph.D. student in Applied Statistics at Oakland University. She earned her M. Stat. degree from Indian Statistical Institute and worked on various statistical modelling problems for almost 10 years at various government agencies in India before she joined Oakland University as a graduate student. Her current research interests are discriminant analysis/pattern recognition, data mining, analysis of repeated measures data and mixed effects models.