Central Michigan University

Department of Mathematics

Graduate Student Seminar

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Estimating Covariance Matrix of High-Dimensional Regression Coefficients under Random Design

Tuesday, April 11, 4:00 pm - 5:00 pm
Pearce Hall, Room 227

Though there many methods of obtaining point estimators of high-dimensional regression coefficients, there are only few that attempts to obtain interval estimates. This due to the difficulty of obtaining an adequate distribution, an estimate of the error variance, or both. In this talk, we present a new method of estimating the covariance matrix of high-dimensional regression coefficients' estimates under random design. To assess the performance of the estimator, we investigate its asymptotic properties. The diagonals of the matrix estimate are used then to obtain confidence intervals of the coefficients and for variable selection. The off-diagonal terms are used to shrink the covariance matrix and obtain an improved estimate.

2016