Bocconi

Università Commerciale Luigi Bocconi

Department of Decision Sciences

Statistics Seminar

On matrix-variate regression analysis

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Abstract

Three-way data arise in different application domains when multiple responses are measured at different time points or locations. A new regression model for analyzing three-way data is proposed. By assuming the matrix normal distribution for the error terms, the proposed model represents the natural generalization of multiple and multivariate regression analysis. Despite the seeming complexity, inference can be performed through maximum likelihood. Inferential properties of the model estimators and a general approach for hypothesis testing are derived. The model fit is illustrated on a simulation study and on data coming from the study of aging Danish twins.

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