Seminar

FINITE SAMPLE UNBIASEDNESS IN HIGH DIMENSIONS VIA THE ITERATIVE BOOTSTRAP

Maria Pia Victoria Feser

University of Geneva

March 8,2019 | 12.30 p.m.| Aula Benvenuti Campus S. Caterina

Abstract : www.stat.unipd.it/fare-ricerca/seminari

FINITE SAMPLE UNBIASEDNESS IN HIGH DIMENSIONS VIA THE ITERATIVE BOOTSTRAP*

Maria Pia Victoria Feser

Full Professor | Research Center for Statistics| University of Geneva

Considering the increasing size of available data, the need for statistical methods that control the finite sample bias, while remaining computationally tractable, is growing. This is mainly due to frequent high dimensional settings that bring many inferential procedures to incur significant loss in terms of statistical and computational performance. In this paper, we propose a simulation based method, the Iterative Bootstrap [Guerrier et al., 2018a,b], that can be used, very generally, to remove the finite sample bias of consistent and nearly consistent estimators, when the number of parameters is allowed to increase with the sample size. It can be applied to a wide class of models and we consider here, in particular, the logistic regression model with possibly also random effects. We also show that the Iterative Bootstrap converges exponentially fast, which makes it a realistic algorithm in high dimensions.

Joint work with Stéphane Guerrier, Mucyo Karemera, Samuel Orso