



SEMINAR SERIES 2018-2019

When: Thursday, November 29, 2018
Time: 3:30 – 4:30 pm
Refreshments at 3:15 pm
Where: Sidney Smith Hall Rm 2105
Speaker: Nicola Sartori, University of Padua
Host: Nancy Reid

Mean and median bias reduction in generalized linear models

We introduce an integrated framework for estimation and inference in generalized linear models using adjusted score equations that result in mean and median bias reduction. General expressions for the mean and median bias-reducing adjusted score functions are derived in terms of quantities that are readily available in standard software for fitting generalized linear models. Estimates can be easily obtained using an iteratively re-weighted least squares with appropriately adjusted working variates. Inference about the model parameters, including procedures for model comparison, can be performed using Wald statistics based on the resulting estimators.

Apart from providing mean and median bias reduction, the methods are also found to overcome practical issues related to infinite estimates that can occur with positive probability in generalized linear models with multinomial or discrete responses. Finally, we show that the properties of the methods are maintained also in extreme settings, characterized by large dimensional parameters.