Department of Statistics

DISSERTATION PROPOSAL

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Lessons in Thinking Linearly

TUESDAY, November 27, 2018, at 1:00 PM
Jones 226, 5747 S. Ellis Avenue

ABSTRACT

Arguably, all estimation problems in high-dimensional statistics boil down to figuring out ways to identify the right low-dimensional structure. In this talk, we shall illustrate how the same philosophical principle may be applied to the problems of inference in high-dimensional settings. In very rough terms, this has to do with finding the right "subspace" in which the first-order approximations carry the desired property. This is done via two examples from two recent projects. The first part of the talk is devoted to constructing a de-biased estimator from a regularized estimator with a particular emphasis on estimating and doing inference on the difference between two Markov random fields. The second part of the talk describes a future project regarding the validity of both empirical and non-Gaussian wild bootstrap approximations to high-dimensional U-statistics.

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