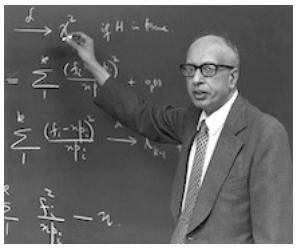
The University of Chicago, Department of Statistics

Bahadur Memorial Lectures

In honor of Raj Bahadur's fundamental contributions to statistics and to our department.



SARA VAN de GEER
Department of Mathematics
ETH Zürich

"Small noise, no regularization"

THURSDAY, MAY 4, 2023 at 3:30 PM
Jones 303, 5747 S. Ellis Avenue
Refreshments before the seminar at 3:00 PM in Jones 303.

Abstract

We consider interpolation in regression and classification. Basis Pursuit estimates the vector of regression coefficients by choosing the interpolator of the data that has the smallest ℓ_1-norm. For the case of i.i.d. Gaussian design independent of the noise, Wang et al. [2021] show the intriguing result that noisy Basis Pursuit is consistent. By cleverly exploiting the Gordon Min-Max Theorem, they derive tight bounds. We will address the question whether consistency can be established in a more direct way using geometric insights and standard empirical process theory. For the classification problem, we compare error bounds for interpolation and various other estimation methods.

References

G. Wang, Donhauser K., and F. Yang. Tight bounds for minimum ℓ_1-norm interpolation of noisy data, 2021. arXiv:2111.05987.