THE UNIVERSITY OF CHICAGO

Department of Statistics

DISSERTATION PROPOSAL

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Computation-Risk Tradeoffs in Statistical Estimation

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ABSTRACT

I will discuss approaches to trading off statistical risk for speed of computation in both the parametric and nonparametric settings. For linear regression, hard-thresholding the sample covariance degrades the model but allows us to take advantage of recent progress on fast solvers for symmetric diagonally dominant systems. In the nonparametric setting, we show how locality sensitive hashing can be used to speed up kernel regression. I will also discuss possibilities for future work, focusing primarily on cluster tree estimation.
