



THE UNIVERSITY OF CHICAGO

Department of Statistics

DISSERTATION PRESENTATION AND DEFENSE

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Statistical and Algorithmic Guarantees for High Dimensional Single
Index Model

THURSDAY, July 16, 2020, at 2:00 PM

See following page for Zoom info

ABSTRACT

High dimensional semiparametric models are useful for analyses of data that are not only high-dimensional, but also exhibit complex data structures. One example of such models is the High Dimensional Single Index Model (HDSIM), which is more flexible than a parametric model, but also circumvents the “curse of dimensionality”, since its nonparametric element is a one dimensional isotonic regression. We are interested in the statistical and algorithmic convergence guarantee of the HDSIMs. In this presentation, we first talk about the bias of isotonic regression, which provides insights for open questions in the the statistical properties of single index models (SIMs). Then we discuss a projected gradient descent algorithm for estimation of the HDSIMs, for which we show a polynomial-time algorithmic convergence guarantee and a statistical convergence guarantee for the estimation and prediction.

Ran Dai is inviting you to a scheduled Zoom meeting.

Topic: Ran Dai's Thesis Defense

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