

Stanford University
Department of Statistics

DEPARTMENTAL SEMINAR

4:30pm, Tuesday, February 25, 2020
Sloan Mathematics Center Room 380C

Refreshments served at 4pm in Sequoia Lounge.

Speaker: Sourav Chatterjee, *Stanford Mathematics and Statistics*

Title: Feature Ordering by Conditional Independence

Abstract:

I will talk about a coefficient of conditional dependence between two random variables Y and Z given a set of other variables X_1, \dots, X_p , based on an i.i.d. sample. The coefficient has a long list of desirable properties, the most important of which is that under absolutely no distributional assumptions, it converges to a limit in $[0, 1]$, where the limit is 0 if and only if Y and Z are conditionally independent given X_1, \dots, X_p , and is 1 if and only if Y is equal to a measurable function of Z given X_1, \dots, X_p . I will then present a new variable selection algorithm based on this statistic, called Feature Ordering by Conditional Independence (FOCI), which is model-free, has no tuning parameters, and is provably consistent under sparsity assumptions.

This is based on joint work with Mona Azadkia.