THE UNIVERSITY OF CHICAGO | DEPARTMENT OF STATISTICS

Statistics Colloquium

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"Tie-breaker Designs"

MONDAY, March 20, 2023, at 4:30 PM
Jones 303, 5747 S. Ellis Avenue
Refreshments before the seminar at 4:00 PM in Jones 304.

ABSTRACT

Companies may offer incentives to their best customers and philanthropists may offer scholarships to the strongest students. They can evaluate the impact of these treatments later using a regression discontinuity analysis. Unfortunately, regression discontinuity analyses have high variance. It is possible to get much more statistical efficiency using a tie-breaker design that works by triage: top subjects get the treatment, bottom subjects do not, and those in between have their treatment randomized. This talk presents statistical analyses of tie-breaker designs including notions of D-optimality. It includes multivariate models and nonparametric models. The conclusion is that when it is possible (and ethical) to randomize for a group of subjects, it is best to do so.

Based on joint work with Hal Varian, Google and Dan Kluger, Harrison Li, Tim Morrison, Stanford University. Some portions of this work were done as a paid consultant for Google and were not part of Art Owen's Stanford responsibilities. Subsequent work was done as a Stanford faculty member.

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