MS&E Winter Speaker Series

Tuesday
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**Allen-X
Auditorium
04-055
Room 101
12:15 – 1:15**

Testing for Two-Stage Experiments in the Presence of Interference

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Many important causal questions concern interactions between units, also known as interference. Examples include interactions between individuals in households, students in schools, and firms in markets. Standard analyses that ignore interference can often break down in this setting: estimators can be badly biased, while classical randomization tests can be invalid. In this talk, Basse presents recent results on testing for two-stage experiments, which are powerful designs for assessing interference. In these designs, whole clusters (e.g. households, schools, or graph partitions) are assigned to treatment or control; then units within each treated cluster are randomly assigned to treatment or control. Basse demonstrates how to construct powerful tests for non-sharp null hypotheses and uses these results to analyze a two-stage randomized trial evaluating an intervention to reduce student absenteeism in the School District of Philadelphia. He discusses some extensions to more general forms of interference, as well as some current challenges.

Guillaume Basse is a PhD candidate in the Statistics department at Harvard University, where he is advised by Edoardo Airoldi. Basse's research develops methods for designing and analyzing experiments in the presence of network interference, with applications in education, political science, and online platforms. Before coming to Harvard, he attended the Ecole Centrale Paris where he studied Applied Mathematics and Engineering. He has lived in France, Israel, the United States and Senegal, where he was born.

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