# Discovering preference structure from choice data

» **Date:**
Feb. 14, 2019
3:00 - 4:30 pm

» **Location:**
Georgia Tech
Stephen C. Hall
Room 102

**Preference, rationality, and public policy**

Approaches that elicit preference from individual choices often assume decision-makers know what they want. That is true if decision-makers can consistently order the available alternatives, yielding transitive preferences, and are not susceptible to subtle changes in how alternatives are described. We leverage recent advances in graph matching and non-linear embeddings to cluster decision-makers based on their preferences structure. We characterize heterogeneity of both the content and structure of preferences using two pairwise comparison experiments, including a classic study of risky choice and a two attribute study about $CO_2$ mitigation. Decision-makers frequently choose in a way consistent with utility maximization, yet some decision-makers make choices consistent with heuristic rules. Furthermore, some participants appear to be uncertain about their preferences, exhibiting violations of weak stochastic transitivity. As a generalization of traditional preference analysis, our approach can be used to make recommendations for those with consistent preferences, uncover complex choice rules, and suggest paths towards clarification for those who are uncertain.

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