

Departmental Colloquium

Learning about Agents and Mechanisms from Opaque Transactions

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Abstract: In this talk I will discuss the problem of trying to learn the requirements and preferences of economic agents by observing the outcomes of an allocation mechanism whose rules you also don't initially know. As an example, consider observing web pages where the agents are advertisers and the winners are those whose ads show up on the given page. We know these ads are placed based on bids and other constraints given to some auction mechanism, but we do not get to see these bids and constraints. What we would like to do is from repeated observations of this type to learn what the requirements and preferences of the agents are. Or consider observing the input-output behavior of some scheduling service, where the input consists of a set of agents requesting service, and the output tells us which actually received service and which did not. In this case, we assume the agents who did not receive service were not served due to overlap of their resource needs with higher-priority requests. From such input-output behavior, we would like to learn the underlying structure. Our goal will be from observing a series of such interactions to try to learn both the needs and preferences of the agents and perhaps also the rules of the allocation mechanism.

This talk is based on work joint with Yishay Mansour and Jamie Morgenstern, as well as work joint with Michael Liang.

Friday, March 16 at 3:00 PM in SEO 636
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