SEMINAR NOTICE

Preston M. Green Department of Electrical and Systems Engineering

Allocating Interventions Based on Counterfactual Predictions: A Case Study on Homelessness Services

MS Dissertation Defense

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Abstract: Modern statistical and machine learning methods are increasingly capable of modeling individual or personalized treatment effects by predicting counterfactual outcomes. These counterfactual predictions could be used to allocate different interventions across populations based on individual characteristics. In many domains, like social services, the availability of possible interventions can be severely resource limited. This paper considers possible improvements to the allocation of such services in the context of homelessness service provision in a major metropolitan area. Using data from the homeless system, I show potential for substantial predicted benefits in terms of reducing the number of families who experience repeat episodes of homelessness by choosing optimal allocations (based on predicted outcomes) to a fixed number of beds in different types of homelessness service facilities. Such changes in the allocation mechanism would not be without tradeoffs, however; a significant fraction of households are predicted to have a higher probability of re-entry in the optimal allocation than in the original one. I discuss the efficiency, equity and fairness issues that arise and consider potential implications for policy.

DATE:	Friday, April 13, 2018
TIME:	2:30 pm
PLACE:	Brauer Hall, Room 12

Research Advisor:
Dr. Zachary Feinstein

This seminar is in partial fulfillment
of the Masters Degree

Washington University in St. Louis
School of Engineering & Applied Science