Industrial & Systems Engineering
Seminar Announcement

Balancing Patient and Physician Needs for Efficient Healthcare Staffing and Paneling

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Abstract: Modern healthcare staffing decisions involve a complex interaction between patient and physician behavior. In order to plan optimal staffing decisions, numerical or discrete event simulation models can be used to describe the needs of patients and physicians within a geographically distributed set of healthcare clinics. We explore several models for healthcare staffing that balance the need to meet random patient demand while considering the costs and benefits of distributed care. Additionally, our model incorporates risk metrics to account for risk-averse decision makers. We present a linearized model for developing staffing strategies in a geographically distributed set of clinics and discuss the results. We go on to explore the similar problems of forming panels of patients for primary care physicians. We present several discrete event simulation models for optimizing the critical decisions for paneling patients. We briefly discuss new simulation optimization methods for solving these models and overview preliminary results and future directions.

Bio: *David Linz* is a PhD candidate in the Department of Industrial and Systems Engineering at the University of Washington. He holds a Masters in Industrial Engineering and has an expected PhD completion date of Summer of 2018. David's research interests include stochastic optimization and simulation optimization with a focus on adaptive random search methods. David is currently working on applying optimization methods to healthcare decision making as well as exploring practical benchmarking approaches for simulation optimization algorithms.

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