



Operations Research and Engineering Management Dissertation Defense

Research Seminar

**Robust Optimization with Recourse in Portfolio Management Theory
and Applications to Stocks and Projects**



**Ph.D. Dissertation
Presented by
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11:00am**

<https://zoom.us/j/96591606074?pwd=eUtYL0cvTmR5dUVpcnF2N0d4V0VCUT09>

Abstract

Robust optimization (RO) methodology takes into account uncertain parameters in the decision-making framework. RO does not assume to know the probability distribution but instead it assumes the uncertain data is placed in a user-specified set of uncertain parameters called uncertainty set. In this dissertation, we investigate the applicability of robust optimization techniques in different portfolio management problems such as financial European Options, Mean-variance problem along with exogenous shocks, and selection and scheduling of project

portfolios under endogenous and exogenous uncertainty. We also provide tractable reformulations, theoretical insights and numerical experiments to show the superiority of our proposed approaches over the benchmarks.

Biography

Hedieh Ashrafi received her bachelor's degree in industrial engineering from Sharif University of Technology, Tehran, Iran in 2017. She joined SMU as a Direct Ph.D. student in OREM department in August 2017. In 2022, she accepted a full-time Data Scientist position at Carvana working on last mile delivery-related projects. Her research interests include decision making under high uncertainty, robust optimization, and portfolio management.