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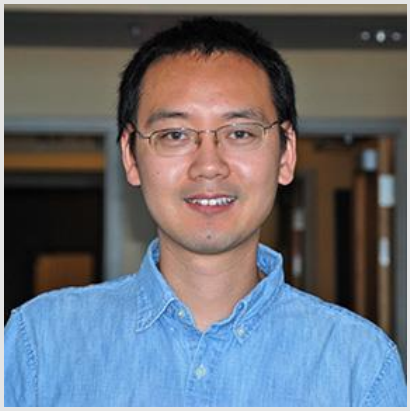

Friday, December 07, 2018

10:00-11:20 AM

W107 PBB

Management Sciences Research Seminar

Improved Decision Rule Approximations for Multi-Stage Robust Optimization

Abstract: We study decision rule approximations for generic multi-stage robust linear optimization problems. We examine linear decision rules for the case when the objective coefficients, the recourse matrices, and the right-hand sides are uncertain, and examine quadratic decision rules for the case when only the right-hand sides are uncertain. The resulting optimization problems are NP-hard but amenable to copositive programming reformulations that give rise to tight, tractable semidefinite programming solution approaches. We further enhance these approximations through new piecewise decision rule schemes. Finally, we prove that our proposed approximations are tighter than the state-of-the-art schemes and demonstrate their superiority through numerical experiments. This talk is based on https://arxiv.org/pdf/1808.06231.pdf.

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