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Time and location: 11:00 a.m.-12:00 p.m. on Friday, Sep 9th, 2022; Room S121 PBB

Title: Computational Issues in Stochastic Programming for Management Problems

Abstract: Input data for quantitative optimization is almost always uncertain. In this talk we will describe computational issues related to explicitly taking the uncertainty into account. We will consider using bootstrap and bagging for confidence intervals, highly parallel decomposition for computing solutions with upper and lower bounds, and decomposition methods for computing solutions. We will consider data-based stochastic programming as well as other means of modeling stochastic processes to support the optimization.

This talk is based on the few pre-prints:

<https://optimization-online.org/2022/08/software-for-data-based-stochastic-programming-using-bootstrap-estimation/>

<https://optimization-online.org/2020/11/8088/>

<https://optimization-online.org/2018/10/6895/>

Speaker's bio sketch:

Professor David Woodruff's research concerns computational aspects of optimal decision making. He is particularly interested in problems with a mix of discrete and continuous decisions with multiple time stages when there is significant uncertainty. His research includes solution algorithms, problem representation and modeling language support. He has worked on applications in operations, logistics, science, and has been involved recently in a number of applications in electrical energy planning and scheduling. From 2013 to 2019 he was editor-in-chief of the INFORMS Journal on Computing, which is a publication of the Institute for Operations Research and Management Science. Woodruff earned his Ph.D. in industrial engineering and management sciences from Northwestern University. He received both his M.S. and B.S. in industrial engineering and engineering management from Stanford University.