

Industrial & Systems Engineering Seminar

Nonparametric Learning Algorithms for Perishable Inventory Systems

Wednesday, October 19

3:15 PM - Refreshments, 3:30 - Graduate Seminar

Lind Hall Room 305



Professor Xiuli Chao

Professor

Industrial & Operations Engineering

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Perishable inventory system is an important class of stochastic inventory system that is notoriously difficult to analyze and solve. The problem becomes even harder when the decision maker has limited or no prior information about the probability distribution of demand process. We develop simple non-parametric algorithms for this system that learn the demand information on the fly, and show that the algorithms achieve the best possible convergence rates as the planning horizon becomes long. Our numerical results show that the algorithms perform close to optimal. This is a joint work with Huanan Zhang and Cong Shi.

BIO:

Xiuli Chao is a professor of Industrial and Operations Engineering at the University of Michigan, Ann Arbor. His research interests include stochastic optimization, queueing, game theory, inventory control, and supply chain management. He is the co-author of two books, "Operations Scheduling with Applications in Manufacturing and Services" (Irwin/McGraw-Hill, 1998), and "Queueing Networks: Customers, Signals, and Product Form Solutions" (John Wiley & Sons, 1999). Chao received the 1998 Erlang Prize from the Applied Probability Society of INFORMS, and in 2005 he received the David F. Baker Distinguished Research Award from Institute of Industrial Engineers (IIE). He holds a doctoral degree in Operations Research from Columbia University.