

Industrial and Systems Engineering Seminar

Applying Machine Learning in Online Revenue Management

Wednesday, November 11

3:15 PM – Refreshments before the Seminar

3:30 PM – Graduate Seminar

Mechanical Engineering Room 4125 A & B



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In a dynamic pricing problem where the demand function is unknown a priori, price experimentation can be used for demand learning. In practice, however, online sellers are faced with a few business constraints, including the inability to conduct extensive experimentation, limited inventory and high demand uncertainty. In this talk we discuss models and algorithms that combine machine learning and price optimization that significantly improve revenue. We report results from live implementations at companies such as Rue La La, Groupon and a large European Airline carrier.

BIO: David Simchi-Levi is a Professor of Engineering Systems at MIT and Chairman of OPS Rules, an operations analytics consulting company and Opalytics, a cloud analytics platform. He is considered one of the premier thought leaders in supply chain management and business analytics. His research focuses on developing and implementing robust and efficient techniques for operations management. He has published widely in professional journals on both practical and theoretical aspects of supply chain and revenue management. His Ph.D. students have accepted faculty positions in leading academic institutes including U. of California Berkeley, Columbia U., Cornell U., Duke U., Georgia Tech, Harvard U., U. of Illinois Urbana-Champaign, U. of Michigan, Purdue U. and Virginia Tech. Professor Simchi-Levi co-authored the books *Managing the Supply Chain* (McGraw-Hill, 2004), the award winning *Designing and Managing the Supply Chain* (McGraw-Hill, 2007) and *The Logic of Logistics* (3rd edition, Springer 2013). He also published *Operations Rules: Delivering Customer Value through Flexible Operations* (MIT Press, 2011). He served as the Editor-in-Chief for Operations Research (2006-2012), the flagship journal of INFORMS and for Naval Research Logistics (2003-2005). He is an INFORMS Fellow, MSOM Distinguished Fellow and the recipient of the 2014 INFORMS Daniel H. Wagner Prize for Excellence in Operations Research Practice; 2014 INFORMS Revenue Management and Pricing Section Practice Award; 2009 INFORMS Revenue Management and Pricing Section Prize and Ford 2015 Engineering Excellence Award. Professor Simchi-Levi has consulted and collaborated extensively with private and public organizations. He was the founder of LogicTools which provided software solutions and professional services for supply chain optimization. LogicTools became part of IBM in 2009.