

PENG SUN

Fuqua School of Business
Box 90120, Duke University
One Tower View Rd
Durham, NC 27708

Tel.: (919) 660-7777
Fax: (919) 681-6246
Email: peng.sun@duke.edu
<http://faculty.fuqua.duke.edu/~psun/bio/>

Academic Position

Duke University: the Fuqua School of Business, Durham, NC
Associate Professor of Decision Sciences, 2008- (tenured, 2010)
Assistant Professor of Decision Sciences, 2003-2008

Education

Ph.D., Operations Research Center, Massachusetts Institute of Technology, May 2003
Dissertation topic: *Constructing Learning Models from Data: The Dynamic Catalog Mailing Problem.*
Committee: Duncan Simester (chair), John Tsitsiklis and Robert Freund
B. Eng., Tsinghua University, Beijing, China, July 1998

Publication

- P. Sun and R. M. Freund, (2004) "Computation of Minimum Volume Covering Ellipsoids," *Operations Research*, 52(5), pp. 690-706.
- D.I. Simester, P. Sun and J.N. Tsitsiklis, (2006) "Dynamic Catalog Mailing Policies," *Management Science*, 52(5), pp. 683-696.
- S. Mannor, D.I. Simester, P. Sun and J.N. Tsitsiklis, (2007) "Bias and Variance Approximation in Value Function Estimates," *Management Science*, 53(2), pp. 308-322.
- X. Chen, M. Sim, D. Simchi-Levi and P. Sun, (2007) "Risk Aversion in Inventory Management," *Operations Research*, 55(5), pp. 828-842.
- X. Chen, M. Sim, and P. Sun, "A Robust Optimization Perspective to Stochastic Models," (2007) *Operations Research*, 55(6), pp. 1058-1071.
- X. Chen, M. Sim, P. Sun and J. Zhang, (2008) "A Linear Decision Based Approximation Approach to Stochastic Programming," *Operations Research*, 56(2), pp. 344-357.
- D. Ahipasaoglu, P. Sun and M. Todd, (2008) "Linear Convergence of a Modified Frank-Wolfe Algorithm for Computing Minimum Volume Enclosing Ellipsoids," *Optimization Methods and Software*, 23(1), pp. 5-19,
- P. Sun, L. Yang and F. De Vericourt, (2009) "Selfish Drug Allocation for Containing an International Influenza Pandemic," *Operations Research*, 57(6), pp. 1320-1332.
- S. Wang, F. de Vericourt and P. Sun, (2009) "Decentralized Resource Allocation to Control an Epidemic: A Game Theoretic Approach," *Mathematical Biosciences*, 22(1), pp. 1-12.

D. Brown, J.E. Smith and P. Sun, (2010) "Information Relaxation and Duality in Stochastic Dynamic Programs," *Operations Research*, 58(4), pp. 785-801.

G. Lopomo, L. Marx and P. Sun, (2011) "Linear Programming for Mechanism Design: An Application to Bidder Collusion in First Price Auctions," *Review of Economic Design*, 15:177-211.

X. Chen and P. Sun, "Optimal Structural Policies for Ambiguity and Risk Averse Inventory and Pricing Models," *SIAM Journal on Control and Optimization*, accepted for publication 2011.

S. Alizamir, F. de Vericourt and P. Sun, "Diagnostic Accuracy under Congestion," *Management Science*, accepted for publication 2012.

Grant

Co-PI, National Science Foundation #SES-0849349, "Applied Mechanism Design," 2009-2011. (PI: Leslie Marx, Co-PIs: A. Belloni, G. Lopomo, P. Sun.)

PhD Student Supervision

Liu Yang, "Application of Game Theory Analysis in Epidemiology and Service Management," Duke FSB, 2010. (co-advisor, first appointment: Tsinghua University, China.)

Saed Alizamir, Duke FSB, expected 2013. (co-advising with Francis de Vericourt)

PhD Thesis Committee Member

Gavin Taylor, "Feature Selection for Value Function Approximation," 2011. (Duke Computer Science.)

Shouqiang Wang, "Essays on Individual Incentives and Private Information," 2011. (Duke Decision Science.)

Professional Activities

Associate Editor, *Operations Research*, 2006 - .

Associate Editor, *Management Science*, 2012 - .

Referee, *Operations Research*, *Management Science*, *Econometrica*, *SIAM Journal on Optimization*, *Mathematics of Operations Research*, *Mathematical Programming*, *Journal of Machine Learning Research*, *Manufacturing & Service Operations Management*, *SIAM Journal on Control and Optimization*, *Journal of Optimization Theory and Application*, *Journal of Marketing Research*, *Computational Optimization and Applications*, *Decision Analysis*, *IEEE Transactions on Neural Network*, *IEEE Transactions on Automatic Control*, etc.

2011 *Management Science* Meritorious Service Award.

Sponsored Sessions Chair, INFORMS Annual Meeting, Charlotte, 2011.

NSF Panelist, 2011.

Invited Presentations at Conferences and Seminars

Managing Scrip Systems

- NYU Stern School of Business, New York, March 2012

Diagnostic Accuracy Under Congestion

- University of Illinois, Urbana-Champaign, March 11, 2010
- UNC, Chapel Hill, April 11, 2011

Optimal Structural Policies for Infinite Horizon Ambiguity and Risk Averse Inventory and Pricing Models

- M&SOM 2008, College Park, Maryland, June 2008

Information Relaxation and Duality in Stochastic Dynamic Programs

- NYU Stern School of Business, New York, November 2007
- INFORMS Optimization Society Meeting, Atlanta, March 2008
- Tsinghua University, Beijing, China, May 2008
- National Singapore University, Singapore, May 2008
- Columbia University, New York, November 24, 2009
- University of British Columbia, Vancouver, Canada, January 18, 2010
- University of Michigan, An Arbor, February 24, 2010

Game Theoretical Approach to Contain an International Influenza Pandemic

- INFORMS Annual Meeting, Seattle, WA, November 2007
- AMS Sectional Conference, Winston-Salem, NC, September 2011

A Robust Optimization Perspective to Stochastic Programming

- INFORMS Annual Meeting, San Francisco, CA, November 2005

Risk Aversion in Inventory Management

- MOPTA 04, Hamilton, Ontario, Canada, July 2004
- Fuqua Summer 04 Luncheon Seminar Series, July 2004
- M&SOM 2005, Evanston, IL, July 2005

Biases and Variances in Value Function Estimates

- INFORMS Annual Meeting, Denver, CO, October 2004
- INFORMS International Meeting, Hong Kong, China, June 2006
- SAMSI Summer 2007 Program on Challenges in Dynamic Treatment Regimes and Multistage Decision-Making, Research Triangle Park, NC, June 2007

Dynamic Optimization for Direct Marketing Problem

- INFORMS Annual Meeting, San Jose, CA, November 2002
- University of Western Ontario, Texas A&M University, University of Florida, University of Chicago, Duke University, Queens University and University of Iowa, January – February 2003
- University of North Carolina at Chapel Hill, November 2003

Computation of Minimum Volume Covering Ellipsoids – an Application from Data Mining

- MOPTA01, McMaster University, Canada, August 2001
- INFORMS Annual Meeting, Miami FL, November 2001
- INFORMS Annual Meeting, Atlanta GA, October 2003

Time-Dependent Shortest Paths in Multimodal Dynamic Networks

- Optimization Days '99, University of Montreal, Canada, May 1999

Teaching

Duke University: the Fuqua School of Business

Decision Models, core course, Daytime MBA, and Weekend, Cross Continent, Duke-Goethe EMBA programs, 2003 – 2009.

Dynamic Programming and Optimal Control, PhD course, 2005, 2007, 2008, 2010.

Strategic Modeling and Business Dynamics, MBA elective, 2011 - .

Global Academic Travel Experience (GATE), MBA elective, 2010, 2012.

Service

Dean's Advisory Committee, Fuqua School of Business, Duke University, 2008-2010.

China Strategy Committee, Fuqua School of Business, Duke University, 2010-2011.

Honor Code Committee, Fuqua School of Business, Duke University, 2010-2011.

Curriculum Committee, Fuqua School of Business, Duke University, 2011-.