

## JING-SHENG (JEANNETTE) SONG

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### ACADEMIC APPOINTMENTS

Shanghai Jiao Tong University, The Antai School of Management  
*Distinguished Visiting Professor by special appointment*, January 2007 – January 2010  
Duke University, The Fuqua School of Business  
*Professor*, July 2003 – present  
Tsinghua University, School of Economics & Management  
*Chaired Professor by special appointment*, May 2002 - May 2004.  
University of California at Irvine, Graduate School of Management  
*Associate Professor with tenure*, July 1997– June 2003  
*Assistant Professor*, July 1991- June 1997 (on-leave 1996-1998)  
Columbia University, Department of Industrial Engineering and Operations Research  
*Assistant Professor*, July 1996 - June 1998  
University of California at Berkeley, Department of Industrial Engineering and Operations Research  
*Visiting Scholar*, July 1994 - March 1995  
Columbia University, Graduate School of Business  
*Instructor*, September 1990 – December 1990  
Chinese Academy of Sciences, The Institute of Applied Mathematics  
*Research Fellow*, January 1985- August 1986

### EDUCATION

Ph.D. in Operations Research, Columbia Business School, Columbia University, 1991.  
M.S. in Operations Research, Institute of Applied Mathematics, Chinese Academy of Sciences, 1984  
B.S. in Mathematics, Beijing Normal University, 1982.

### HONORS & GRANTS

- Participant, Invitation Program for U.S. Business School Educators, Keizai Koho Center (Japan Institute for Social and Economic Affairs), May 25-29, Tokyo, Japan
- Chinese Natural Science Foundation Grant 70731003
- Hohai Distinguished Professor by special appointment, Hohai University, 2007
- Outstanding Overseas Chinese Young Scientist Award, National Natural Science Foundation of China, 2003-2006
- Meritorious Service Award, *Operations Research*, 2002
- Meritorious Service Award, *Operations Research*, 2001
- National Science Foundation Research Grant 2000-2003  
*Multi-Product Assemble-to-Order Systems: Performance Optimization and Supply Chain Application*
- National Science Foundation Research Grant 1997-2000  
*Design and Control of Multi-Item, Assemble-to-Order Inventory Systems: An Order-Based Approach*
- National Science Foundation Research Planning Grant 1995-1996  
*Preliminary Studies on Order-Based Performance in Multi-Item Inventory Systems*

- The Anderson Consulting Outstanding Faculty Award, Graduate School of Management, University of California, Irvine, 1993
- Faculty Career Development Award, University of California, Irvine, 1992.
- Fellowship, Graduate School of Business, Columbia University, 1987-1991.
- Young Researcher Prize, The Institute of Applied Mathematics, Chinese Academy of Sciences, Beijing, 1985

## RESEARCH ACTIVITIES

### Book

Song, J.-S. and D. Yao (eds.) 2001. *Supply Chain Structures: Coordination, Information and Optimization*, Kluwer Academic Publishers.

### Published and Forthcoming Articles

1. Song, J.-S., H. Zhang, Y. Hou and M. Wang. The effect of leadtime and demand uncertainties in  $(r, q)$  inventory systems. *Operations Research*, forthcoming.
2. Song, J.-S. and Y. Zhao. The value of component commonality in a dynamic inventory system with lead times. *Manufacturing & Service Operations Management*, forthcoming.
3. Shang, K., J.-S. Song and P. Zipkin. 2009. Coordination mechanisms for serial supply chains with batch ordering. *Management Science* **55** (4), 685-695.
4. Song, J.-S. and P. Zipkin. 2009. Inventories with multiple supply and demand sources and networks of queues with overflow bypasses. *Management Science* **55** (3), 362-372 .
5. DeCroix, D., J.-S. Song and P. Zipkin. 2009. Managing an assemble-to-order system with returns. *Manufacturing & Service Operations Management* **11** (1), 144-159.
6. Lu, X., J.-S. Song and K. Zhu. 2008. Analysis of perishable-inventory systems with censored data. *Operations Research* **58** (4), 1034-1038.
7. Bernstein, F., J.-S. Song and X. Zheng. 2008. "Bricks-and-mortar" vs. "clicks-and-mortar": an equilibrium analysis. *European Journal of Operational Research* **187** (3), 671-690.
8. Shang, K. and J.-S. Song. 2007. Serial supply chains with economies of scale: bounds and approximations. *Operations Research* **55** (5), 843-853.
9. Lu, X., J.-S. Song and A. Regan. 2007. Rebate, returns, and price protection policies in supply chain coordination. *IIE Transactions* **39**, 111-124.
10. Lu, X., J.-S. Song and A. Regan. 2006. Inventory planning with forecast updates: approximate solutions and cost error bounds. *Operations Research* **54** (6), 1079-1097.
11. Shang, K. and J.-S. Song. 2006. A closed form approximation for serial inventory systems and its application to system design. *Manufacturing & Service Operations Management* **8** (4), 394-406.
12. Lu, X., J.-S. Song and K. Zhu. 2005. On "The censored newsvendor and the optimal acquisition of information". *Operations Research* **53** (6), 1024-1026.
13. Lu, Y., J.-S. Song and D. Yao. 2005. Backorder minimization in multiproduct assemble-to-order systems. *IIE Transactions* **37** (8), 763-774.
14. DeCroix, D., J.-S. Song and P. Zipkin. 2005. A series system with returns: stationary analysis. *Operations Research* **53** (2), 350-362.
15. Lu, Y. and J.-S. Song. 2005. Order-based cost optimization in assemble-to-order systems. *Operations Research* **53** (1), 151-169.
16. Choi, K.-S., J.G. Dai and J.-S. Song. 2004. On measuring supplier performance under vendor-managed-inventory programs in capacitated supply chains. *Manufacturing & Service Operations Management* **6** (1), 53-72.
17. Drezner, Z., C. Scott and J.-S. Song. 2003. The central warehouse location problem revisited. *IMA Journal of Management Mathematics* **14**, 321-336.

18. Song, J.-S. and P. Zipkin. 2003. Supply chain operations: assemble-to-order systems, Chapter 11 in *Handbooks in Operations Research and Management Science*, Vol. **XXX**: *Supply Chain Management*, S. Graves and T. De Kok, eds, North-Holland.
19. Boyaci, T., G. Gallego, K. Shang and J.-S. Song. 2003. Erratum to bounds in “serial production/distribution systems under service constraints”. *Manufacturing & Service Operations Management* **5**, 372-374.
20. Dayanik, S., J.-S. Song and S. Xu. 2003. The effectiveness of several performance bounds for capacitated production, partial-order-service assemble-to-order systems. *Manufacturing & Service Operations Management* **5**, 230-251.
21. Shang, K. and J.-S. Song. 2003. Newsvendor bounds and heuristic for optimal policies in serial supply chains. *Management Science* **49**, 618-638.
22. Lu, Y., J.-S. Song and D. Yao. 2003. Order fill rate, leadtime variability, and advance demand information in an assemble-to-order system. *Operations Research* **51**, 292-308.
23. Song, J.-S. and D. Yao. 2002. Performance analysis and optimization of assemble-to-order systems with random leadtimes. *Operations Research* **50**, 889-903.
24. Song, J.-S. 2002. Order-based backorders and their implications in multi-item inventory systems. *Management Science* **48**, 499-516.
25. Chen, F. and J.-S. Song. 2001. Optimal policies for multi-echelon inventory problems with Markov-modulated demand. *Operations Research* **49**, 226-234.
26. Song, J.-S., C. Yano and P. Lerssrisuriya. 2000. Contract assembly: dealing with combined supply lead time and demand quantity uncertainty. *Manufacturing & Service Operations Management* **2**, 287-296.
27. Song, J.-S. 2000. A note on assemble-to-order systems with batch ordering. *Management Science* **46**, 739-743.
28. Song, J.-S., S. Xu and B. Liu. 1999. Order-fulfillment performance measures in an assemble-to-order system with stochastic leadtimes, *Operations Research* **47**, 131-149.
29. Song, J.-S. 1998. On the order fill rate in multi-item, base-stock systems, *Operations Research* **46**, 831-845.
30. So, K. and J.-S. Song. 1998. Price, delivery time guarantees and capacity selection, *European Journal of Operations Research* **111**, 28-49.
31. Song, J.-S. and P. Zipkin. 1996. Inventory control with information about supply conditions, *Management Science* **42**, 1409-1419.
32. Song, J.-S. and P. Zipkin. 1996. The joint effect of leadtime variance and lot size in a parallel processing environment, *Management Science* **42**, 1352-1363.
33. Song, J.-S. and P. Zipkin. 1996. Evaluation of base-stock policies in multiechelon inventory systems with state-dependent demands: Part II: state-dependent depot policies, *Naval Research Logistics* **43**, 381-396.
34. Song, J.-S. and P. Zipkin. 1996. Managing inventory with the prospect of obsolescence, *Operations Research* **44**, 215-222.
35. Song, J.-S. 1994. Understanding the leadtime effects in stochastic inventory systems with discounted costs, *Operations Research Letters* **15**, 85-93.
36. Song, J.-S. 1994. The effect of leadtime uncertainty in a simple stochastic inventory model, *Management Science* **40**, 603-613.
37. Song, J.-S. and P. Zipkin. 1993. Inventory control in a fluctuating demand environment, *Operations Research* **41**, 351-370.
38. Song, J.-S. and P. Zipkin. 1992. Evaluation of base-stock policies in multiechelon inventory systems with state-dependent demands: Part I: State-independent policies, *Naval Research Logistics* **39**, 715-728.
39. Song, J.-S. 1988. Continuous-time Markov decision processes with non-uniformly bounded transition rates, *Scientia Sinica (Series A)*, (English Edition) **XXXI**, 1281-1291.

40. Dong, Z. and J.-S. Song. 1988. A secondary approach to the discounted model in semi-Markov decision processes. *Science Bulletin*, (English Edition) **33**, 448-454.
41. Song, J.-S. and Z. Dong. 1987. A note on continuous-time Markov decision processes with undiscounted cost criterion. *Science Bulletin*, (Chinese Edition) **32**, 1201-1205.

### **Working Papers**

1. Guo, P., J.-S. Song and Y. Wang. Outsourcing structures and information flow in a three-tier supply chain. Revised June 2009.
2. Bernstein, F., J.-S. Song and X. Zheng. Free riding in a multi-channel supply chain. Revised May 2009.
3. Lu, Y., J.-S. Song and Y. Zhao. No-holdback allocation rules for continuous-time assemble-to-order systems. Revised February 2009.
4. Song, J.-S. and P. Zipkin. Newsvendor problems with sequentially revealed demand information. Revised May 2008.
5. Song, J.-S., M. Wang and H. Zhang. 2008. On the convexity of discrete  $(r, Q)$  and  $(s, T)$  inventory systems.
6. Guo, P., J.-S. Song and Y. Wang. 2008. Who should bargain with tough suppliers: the OEM or the CM?
7. Song, J.-S. and Z. Xue. 2007. Demand management and inventory control for substitutable products.
8. Hu, W., J.-S. Song and H. Zhang. 2007. On “Resource Flexibility with Responsive Pricing”.
9. Zheng, X. and J.-S. Song. 2007. e-Fulfillment: vertical vs. horizontal cooperation.
10. Song, J.-S. and P. Zipkin. 2006. Supply streams.
11. Lu, X., J.-S. Song and K. Zhu. 2006. Inventory control with unobservable lost sales and Bayesian updates.
12. Singh, M., J.-S. Song, C. Yano and A. Moreno-Beltran. 2004. Production and repair decisions with time-consuming repair and a deadline.

### **TEACHING ACTIVITIES**

#### **Courses taught**

MBA & Executive MBA core courses:

- Operations Management
- Management Science

MBA & Executive MBA elective courses:

- International Operations Management
- Supply Chain Management
- Field Studies in Operations Management
- Management Science IT Lab

Engineering Master Program courses:

- Operations Management
- Design and Management of Production and Service Systems
- Facilities Layout and Planning
- Production Management

Undergraduate course:

- Quantitative Methods for Management

Ph.D. courses:

- Stochastic Comparison: Theory and Applications
- Supply Chain Optimization
- Current Research Topics in Supply Chain Management
- Inventory Planning Models

- Foundations of Optimization

#### **Ph.D. Students**

- Kevin H. Shang (2002)  
Dissertation: *Simple Solutions to Supply Chain Inventory Management*  
Current position: Associate Professor, Fuqua School of Business, Duke University
- Xiaona Zheng (2005)  
Dissertation: *Essays on Multi-Channel Supply Chains*  
Current position: Assistant Professor, Guanghua School of Management, Peking University
- Zhengliang Xue (2008)  
Dissertation: *Integrated Marketing and Operations Strategies: Multi-product Demand Shaping and Inventory Planning*  
Current Position: Postdoctoral researcher, IBM Research

#### **Postdoctoral Researchers Supervised**

- Yingdong Lu (1999-2000)  
Topic: *Assemble-to-Order Systems with Random Leadtimes*  
Current position: Researcher, IBM Research
- Xiangwen Lu (2002-2003)  
Topic: *Forecasting and Inventory Control*  
Current position: Researcher, Cisco Systems

### **PROFESSIONAL ACTIVITIES**

#### **Memberships**

- The Institute of Operations Research and Management Science (INFORMS)
- INFORMS Manufacturing and Service Operations Management Society (MSOM)
- INFORMS Applied Probability Society (APS)
- Production and Operations Management Society (POMS)

#### **Editorial positions**

- Area Editor, *Operations Research*, Manufacturing, Service and Supply Chain Operations Area, 2006-present
- Department Editor, *IIE Transactions*, *Scheduling and Logistics Focus Issues*, Supply-Chain/Production-Inventory Department, 2005-2006
- Associate Editor, *Manufacturing and Service Operations Management*, 2006-2007
- Associate Editor, *Management Science*, 2000-2006
- Associate Editor, *Operations Research*, 1997-2005
- Associate Editor, *Naval Research Logistics*, 2003-2005
- Associate Editor, *IIE Transactions*, 2000-2005
- Editorial board member, *Manufacturing and Service Operations Management*, 1999-2005
- Referee for *European Journal of Operational Research*, *IEEE Transactions*, *IIE Transactions*, *INFOR*, *Management Science*, *Mathematical Analysis and Applications*, *Mathematics of Operations Research*, *Naval Research Logistics*, *Operations Research*

#### **Professional services**

- President, INFORMS Manufacturing and Service Operations Management Society (MSOM), July 2009-June 2010
- Panelist, National Science Foundation, Manufacturing Enterprise Systems program, 2008
- External Examiner, Executive M.Sc. in Logistics and Supply Chain Management, 2007-2010

- Chair, INFORMS Dantzig Dissertation Award Committee, 2007
- Member, INFORMS Dantzig Dissertation Award Committee, 2006
- Member, Committee on 2005 WORMS Award for the Advancement of Women in OR/MS
- Reviewer, INFORMS-Junior Faculty Interest Group Paper Competition, 2004-2006
- Panelist, National Science Foundation, DMII, 1999, 2001

### **Professional conference activities**

- Cluster Chair and Co-Chair, INFORMS San Diego 1997, Salt Lake City 2000, Seattle 2007, INFORMS International Conference, Hong Kong 2006
- Program Chair, International Conference on Global Supply Chain Management, Beijing, 2002
- Session Chair, INFORMS national meetings in New Orleans 1995, Atlanta 1996, San Diego 1997, Seattle 1999, Salt Lake City 2000, San Antonio 2000, Miami Beach 2001, San Jose 2002, Atlanta 2003, Denver 2004, San Francisco 2005, Pittsburgh 2006

## **UNIVERSITY SERVICE**

### **At Duke University**

- Operations area coordinator, 2006-present
- Executive committee, 2005-2007
- Ph.D. Operations area coordinator, 2003-2005
- Various ad hoc committees and committee chairs for faculty promotions, 2003-
- Strategic alliances task force, 2004-2005

### **At University of California, Irvine**

- Council on Research, Computing, and Library Resources, 2000-2003
- Chair, Ad hoc Committee for Pacific Rim Research, 2000-2001
- Ad hoc Committee for Pacific Rim Research, 2001-2002
- Search Committee for Research Librarian for Business, 2002-2003
- Representative to Representative Assembly of the Academic Senate, 1993-1995
- Student Fee Advisory Committee, 1995-1996
- Geometry/Topology Faculty Recruiting Committee, Department of Mathematics, School of Physical Sciences, 2002-2003
- GSM Personnel Committee, 1999-2000, 2001-2003
- Area Coordinator, Operations and Decision Technologies, 1995-1996, 1999-2000
- GSM Master Program Committee, 1992-1994, 1995-1996, 2000-2002
- GSM Ph.D. Program Committee, 2001-2002
- GSM ITM Implementation Task Force, 1998-2001
- Chair, GSM Faculty Computing Committee, 1998-1999
- ODT Colloquia Coordinator, GSM, Fall 1992, 1993-1994, 1999-2000, 2001-2002

## **INDUSTRY ADVISING/CONSULTING ACTIVITIES**

- ATK North America
  - Auto parts inventory control system development – replenishment policies and cost parameter estimations
- Bowers/Masco
  - Improving customer order fill rate – production scheduling and stock allocation
- Disneyland
  - Outdoor vending operational efficiency -- waiting time reduction
  - Merchandise-store labor optimization
  - Spare-part inventory management

- Outdoor vending warehouse design (facility layout)
- J.B. Hunt
  - Truck dispatching scheduling and routing
  - Railroad shipment efficiency; storage waiting time reduction
- Lucky Stores
  - Outbound trucks loading and unloading efficiency
- In-N-Out
  - Demand forecasting and labor optimization