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# Curriculum Vitae

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## EDUCATION

**Columbia University Graduate School of Business**, New York, New York

Ph.D. in Operations Research, May 1996.

Thesis, *Optimal Control of Flexible Production and Distribution Systems*.

Supervisor: G. J. van Ryzin.

M.Phil. in Operations Research, October 1995. Passed oral field examination *with honors*.

**Yale School of Management**, New Haven, Connecticut

Master of Public and Private Management (M.P.P.M.), May 1987.

**Harvard College**, Cambridge, Massachusetts

A.B., *cum laude*, June 1983. Concentration in Biology. Harvard College Scholar.

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## PROFESSIONAL EXPERIENCE

**The Wharton School, University of Pennsylvania**, Philadelphia, Pennsylvania

Operations and Information Management Department

- *Associate Professor* (summer 2003 - present)
- *Assistant Professor* (summer 1996 - summer 2003)
- *Lecturer* (summer 1995 - summer 1996)

**INSEAD, Fontainebleau, France**

- *Visiting Scholar*, 2004-2005.

**Booz • Allen & Hamilton**, New York, New York

Management Consulting Firm

- *Associate*, Operations Practice (spring 1989 - autumn 1990)
- *Associate*, Strategy Practice (autumn 1987 - spring 1989)

**The World Bank**, Washington, D.C.

International Financial Organization

- *Consultant*, Energy Division (summer 1986)

**Digital Productions**, Los Angeles, California

Computer-Generated Animation for Entertainment, Science, and Industry

- *Production Management* (spring 1985)
- *Technical Director* (summer 1983 - winter 1985)

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## PATENTS AND INVENTIONS

U.S. Patent No. 5,590,037 for “A Digital Computer System and Methods for Computing a Financial Projection and an Illustration of a Prefunding Program for an Employee Benefit Plan.” Covers financial analysis software that evaluates group life insurance contracts used by employers to fund retirees’ health care benefits.

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## PUBLICATIONS

### Papers Published or to Appear in Refereed Journals

1. N. Gans and G. van Ryzin (1997), “Optimal Control of a Multi-Class, Flexible Queueing System,” *Operations Research* **45**, 677 – 693.
2. N. Gans and G. van Ryzin (1998), “Optimal Dynamic Scheduling of a General Class of Parallel-Processing Queueing Systems,” *Advances in Applied Probability* **30**, 1130 – 1156.
3. N. Gans and G. van Ryzin (1999), “Dynamic Vehicle Dispatching: Optimal Heavy Traffic Performance and Practical Insights,” *Operations Research* **47**, 675 – 692.
4. N. Gans (2002), “Customer Loyalty and Supplier Quality Competition,” *Management Science* **48**, 207 – 221.
5. N. Gans and Y-P. Zhou (2002), “Managing Learning and Turnover in Employee Staffing,” *Operations Research* **50**, 991 – 1006.
6. N. Gans and Y-P. Zhou (2003), “A Call-Routing Problem with Service-Level Constraints.” *Operations Research* **51**, 255 – 271.
7. N. Gans, G. Koole and A. Mandelbaum (2003), “Telephone Call Centers: Tutorial, Review, and Research Prospects,” *Manufacturing & Service Operations Management (M&SOM)* **5**, 79 – 141.
8. S. Savin, M. Cohen, N. Gans, and Z. Katalan (2005), “Capacity Management in Rental Businesses with Heterogeneous Customer Bases,” *Operations Research* **53**, 617 – 631.
9. Brown, L., N. Gans, A. Mandelbaum, A. Sakov, H. Shen, S. Zeltyn and L. Zhao (2005), “Statistical Analysis of a Telephone Call Center: A Queueing-Science Perspective,” *Journal of the American Statistical Association (JASA)* **100**, 36 – 50.
10. N. Gans, and Y-P. Zhou, “Call-Routing Schemes for Call-Center Outsourcing,” to appear in *Manufacturing & Service Operations Management (M&SOM)*.

### Papers Under Review at Refereed Journals

11. N. Gans, G. Knox, and R. Croson, “Simple Models of Discrete Choice and Their Performance in Bandit Experiments,” under review at *Manufacturing & Service Operations Management (M&SOM)*.
12. N. Gans and S. Savin, “Pricing and Capacity Rationing in Rentals,” under 2<sup>nd</sup> round of review at *Management Science*.

13. S. Chick and N. Gans, "An Economic Analysis of Simulation Selection Problems," under review at *Management Science*.

### Working Papers

14. Gans, N., "Service Quality, Switching Costs, and Their Effect on Customer Retention," OPIM Department Working Paper.
15. Gans, N. and Y. Zhou, "A Single-Server Queue with Markov-Modulated Service Times," OPIM Department Working Paper.

### Teaching Cases

16. N. Gans, Z. Katalan., and J. Young (2001), "Offshore Drilling Incorporated," OPIM Department.

## GRANTS AND AWARDS

### Grants and Other Financial Support

- Fishman Davidson Center for Service and Operations Management, 2004-2005, \$15,000.
- Fishman Davidson Center for Service and Operations Management, 2003-2004, \$10,000.
- Co-Principal Investigator, Alfred P. Sloan Foundation Grant, 2003-2004, \$190,000.
- Senior Personnel, NSF *Engineering the Service Sector* Award DMI-0223304, 2003-2004, \$150,000.
- Principal Investigator, NSF CAREER Award SBR-9733739, 1998-2003, \$250,000.
- Wharton Electronic Business Initiative, 2001-2002, \$5,000.
- Fellow, Wharton Financial Institutions Center, 1996 - present: 1996-9, summer support.

### Professional Awards

- Meritorious Service Award, as Associate Editor of *Operations Research*, 2001.
- First Prize, INFORMS George E. Nicholson Student Paper Competition, 1995.
- Participant, ORSA Doctoral Colloquium, Ann Arbor, Michigan, 1994.

### Teaching Awards

- Miller-Scherrerd Award for Outstanding Teaching in the Wharton MBA Core, 2000, 2004.
- Wharton MBA Core Curriculum Cluster Teaching Award: 1997, 1998, 1999, 2000, 2001.

## PROFESSIONAL LEADERSHIP

### Editorial Positions

- Associate Editor, *Operations Research*, 2000 – 2005.
- Associate Editor, *Management Science*, 2001 – 2005.
- Editorial Board, *Manufacturing & Service Operations Management* (M&SOM), 2000 – 2002.
- Senior Editor, *Manufacturing & Service Operations Management* (M&SOM), 2003 – 2005.

### Participation on Prize Committees

- Chair, INFORMS George E. Nicholson Student Paper Competition, 2000.
- Panelist, INFORMS George E. Nicholson Student Paper Competition, 1998, 1999.
- Panelist, INFORMS M&SOM Student Paper Competition, 1997, 2003.

### **Participation on Grant Committees**

- Panelist, National Science Foundation, Operations Research and Production Systems, 1998.
- Referee, National Science Foundation, Decision Risk and Management Science, 1998.
- Participant, National Science Foundation Workshop on Engineering the Service Sector, 2001.
- Referee, Technology Foundation STW, Dutch Funding Agency for University Research, 2004.
- Referee, National Science and Engineering Research Council of Canada (NSERC) , 2005.

### **Ad Hoc Referee Work for Journals**

*European Journal of Operational Research, Management Science, Manufacturing & Service Operations Management (M&SOM), Operations Research, Operations Research Spectrum, Production and Operations Management (POM), Transportation Science*

### **Conference Organization**

- Co-Chair, INFORMS Doctoral Student Colloquium, Philadelphia, autumn 1999.
- Co-Organizer, WFIC Call Center Forum, Philadelphia, spring 2003.
- Organizer, WFIC Call Center Forum, Philadelphia, spring 2004.
- Co-Organizer, CRM Call Center Workshop, Montreal, summer 2004.
- Co-Organizer, POMS Service College Conference, New York, autumn 2004.

### **Professional Affiliations**

- Member of the Institute of Operations Research and Management Science (INFORMS).

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## **INVITED TALKS**

### **Optimal Control of Multi-Class Flexible Queueing Systems**

- OM Group, GSIA, Carnegie Mellon University, January 1995.
- OIT Group, Graduate School of Business, Stanford University, January 1995.
- OM Group, Graduate School of Business, University of Chicago, January 1995.
- OPIM Department, the Wharton School, University of Pennsylvania, February 1995.
- OM Group, Simon School, University of Rochester, February 1995.
- OM Group, Fuqua School, Duke University, February 1995.

### **Optimal Scheduling of a Parallel-Processing Queueing System**

- Systems Engineering Department, SEAS, University of Pennsylvania, March 1996.
- Mathematics Department, EPFL, Lausanne, Switzerland, July 1996.

### **Dynamic Vehicle Dispatching**

- OM Department, Stern School of Business, New York University, March 1997.

### **Customer Learning and Loyalty when Quality is Uncertain**

- MEDS Department, Kellogg School, Northwestern University, January 1999.
- Management Science Division, Graduate School of Business, Columbia University, May 1999.
- Technology Management Area, INSEAD, Fontainebleau, France, May 1999.
- OM Summer Camp, Sloan School of Management, MIT, June 1999.
- I&MSE Department, Lehigh University, September 1999.

### **Customer Loyalty and Supplier Strategies for Quality Competition**

- OM Group, Fuqua School, Duke University, November 1999.

- OM Group, University of Michigan Business School, November 1999.
- OM Group, GSIA, Carnegie Mellon University, December 1999.
- OM Department, Stern School of Business, New York University, May 2000.
- OTM Unit, Anderson Graduate School of Management, UCLA, May 2000.
- Management Science Department, School of Business, University of Washington, October 2000.
- OITM Group, Haas School of Business, University of California at Berkeley, November, 2001.
- OTIM Group, Kenan-Flagler School, University of North Carolina, April 2002.

#### **A Call-Routing Problem with Service-Level Constraints**

- OTIM Group, Kenan-Flagler School, University of North Carolina, September 2001.
- OM Group, University of Chicago Graduate School of Business, October 2001.
- DSES Department, Rensselaer Polytechnic Institute, Troy, New York, November, 2001.
- OM Group, Johnson School, Cornell University, March, 2002.
- OITM Group, Haas School of Business, University of California at Berkeley, September 2002.
- Decision Risk & Operations and IEOR Joint Seminar, Columbia University, October, 2002.
- ODT Group, University of California at Irvine, October 2002.
- IOM Department, Marshall School of Business, University of Southern California, October 2002.
- I&MSE Department, Lehigh University, October 2003.
- D&IT Area, Smith School of Business, University of Maryland, October 2003.
- IE/MS Department, School of Engineering, Northwestern University, November 2003.
- Laboratoire Génie Industriel, École Centrale Paris, December 2004.

#### **Simple Models of Discrete Choice and Their Performance in Bandit Experiments**

- Yale School of Management, April 2004.
- Marketing Group, INSEAD, January 2005.

#### **Pricing and Capacity Rationing in Rentals**

- Operations & Information Systems and IE Joint Seminar, Koç University, May 2005.
- Technology and Operations Management Group, INSEAD, May 2005.
- Operations Management Group, Rotman School, University of Toronto, October 2005.

#### **Call-Routing Schemes for Call-Center Outsourcing**

- Sloan Foundation Industry Conference, December 2005.

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### **TEACHING EXPERIENCE**

#### **Courses Taught**

- Queueing Theory (INSEAD Ph.D. Program), spring 2005.
- Linear and Integer Optimization (INSEAD Ph.D. Program), fall 2004.
- Service Excellence (Wharton Executive Education), fall 2003.
- Service Operations (Penn Undergraduate, M.B.A, Master of Engineering), 2000-present.
- Management Science (Wharton M.B.A. Core), 1995-present.
- Introduction to Production and Operations Management (Wharton Undergraduate), 1996-1999.

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

- Yong-Pin Zhou, Ph.D. August 2000.

Finalist, 1999 INFORMS George E. Nicholson Student Paper Competition.  
First position, School of Business Administration, University of Washington, Seattle.

- Sergei Savin, co-advisor with M. Cohen and Z. Katalan, Ph.D. May 2001.  
Finalist, 2000 INFORMS M&SOM Student Paper Competition.  
First position: Graduate School of Business, Columbia University.

### **Dissertation Committee Participation**

- Yunzeng Wang, OPIM Department, Wharton, Ph.D. May 1998.
- Wen Zhou, OPIM Department, Wharton, Ph.D. May 1999.
- Siddharth Mahajan, OPIM Department, Wharton, Ph.D. August 1999.
- Nils Rudi (Chair), OPIM Department, Wharton, Ph.D. September 2000.
- Hanfeng Gong, Statistics Department, Wharton, Ph.D. May 2002.
- Yusong Wang, Marketing Department, Wharton, Ph.D. August 2002.
- Murat Erkoç, I&MSE Department, Lehigh University, Ph.D. August 2002.
- Mei Xue, OPIM Department, Wharton, Ph.D. December 2002.
- Haipeng Shen, Statistics Department, Wharton, Ph.D. May 2003.
- Xuefeng Li, Statistics Department, Wharton, Ph.D. August 2003.
- Haitao Cui, Marketing Department, Wharton, Ph.D. August 2005.
- George Knox, Marketing Department, Wharton, Ph.D. expected August 2006.

### **Independent Studies Offered to Ph.D. Students**

- Yong-Pin Zhou, OPIM Department, introduction to queueing theory, fall 1996.
- Siddharth Mahajan, OPIM Department, advanced topics in dynamic programming, fall 1997.
- Haipeng Shen, Statistics Department, introduction to queueing theory, fall 2000.

### **Supervision of M.B.A. Advanced Study Projects**

- Outsourcing mutual fund clearing and accounting operations to India, spring 2002.

### **Other Undergraduate and M.B.A. Student Supervision**

- Robb Hsia, undergraduate SEAS student, advisor for engineering practicum, spring 1999.
- Jose Acosta, M.B.A. student, independent study in Management Science, spring 1999.
- John Young, M.B.A. student, independent study in Management Science, fall 2000.
- Erica Gold, undergraduate SEAS student, advisor for engineering practicum, spring 2001.

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## **SERVICE**

### **Department Service**

- OPIM Department Ph.D. admissions committee, 1996-8.
- OPIM Department Ph.D. program review committee, 1997-8.
- OPIM Department Faculty Seminar Series Coordinator, 1998-2000.
- OPIM Department M.B.A. advisor (with E. Clemons), 2000-1, 2003-4.
- OPIM 621 Course Coordinator, 2005-6.
- Chair, OPIM Department Recruiting Committee, 2005-6.

### **School Service**

- Wharton M.B.A. Executive Committee, 2000-1.
- Wharton Faculty Coordinator, Carnegie Mellon Operations Case Competition, 2000-2003.
- Wharton M.B.A. Operations Management Club, Faculty Advisor, 2002-4

- Wharton M.B.A. Curriculum Committee, 2003-4.
  - Wharton Management Department Q-Review Committee, 2003-4.
  - Wharton Statistics Department Q-Review Committee, 2005-6.
  - Wharton Core Curriculum Faculty Advisory Committee, 2005-6.
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