

February 8, 2021

## Curriculum Vitae

### JEYAVEERASINGAM GEORGE SHANTHIKUMAR

Richard E. Dauch Chair in Manufacturing and Operations Management &  
Distinguished University Professor of Management

Department of Management  
Krannert School of Management  
Purdue University  
West Lafayette, IN 47907-2076  
Phone: (765) 494-4468  
Fax: (765) 496-7434  
email: shanthikumar@purdue.edu

#### EDUCATION

**Ph.D.** (1979) University of Toronto, Department of Industrial Engineering. Thesis: *Approximate Queueing Models of Dynamic Job Shops*. Supervisor: Professor J. A. Buzacott.

**M.A.Sc.** (1977) University of Toronto, Department of Industrial Engineering. Thesis: *Decomposition Approaches in Permutation Scheduling Problems*. Supervisor: Professor J. A. Buzacott.

**B.Sc.** (1972) University of Sri Lanka, Department of Mechanical Engineering. Placed first in the class of 1972.

#### EMPLOYMENT

**2009-present:** Professor, Department of Management, Krannert School of Management, Purdue University, West Lafayette, IN.

**2009-present:** Professor Emeritus, Department of Industrial Engineering and Operations Research, College of Engineering, University of California, Berkeley, CA.

**2018-2019:** Area Coordinator, Supply Chain and Operations Management Area, Department of Management, Krannert School of Management, Purdue University, West Lafayette, IN.

**2012-2016:** Academic Director, MS program in Global Supply Chain Management, Department of Management, Krannert School of Management, Purdue University, West Lafayette, IN.

**2013-2015:** Group Head, MIS/OM/QM, Department of Management, Krannert School of Management, Purdue University, West Lafayette, IN.

**2012-2013:** Area Head, Operations Management Group, Department of Management, Krannert School of Management, Purdue University, West Lafayette, IN.

**2011-2015:** Director, (DCMME) Dauch Center for the Management of Manufacturing Enterprises, Krannert School of Management, Purdue University, West Lafayette, IN.

**2011-2015:** Director, (GSCMI) Global Supply Chain Management Initiative, Krannert School of Management, Purdue University, West Lafayette, IN.

**1993-2009:** Professor, Department of Industrial Engineering and Operations Research, College of Engineering, University of California, Berkeley, CA.

**1989-2009:** Research Associate, Lawrence Berkeley Laboratories, Berkeley, CA.

**1988-2001:** Professor, Manufacturing, Information and Technology, Haas School of Business, University of California, Berkeley, CA.

**1989-1992:** Chairman of Management Science Group, School of Business Administration, University of California, Berkeley, CA.

**1986-1988:** Associate Professor of Management Science, University of California, Berkeley, CA.

**1984-1986:** Acting Associate Professor of Management Science, School of Business Administration, University of California, Berkeley, CA.

**1982-1984:** Associate Professor of Systems and Industrial Engineering, University of Arizona, Tucson, AZ.

**1979-1982:** Assistant Professor of Industrial Engineering and Operations Research, Syracuse University, Syracuse, NY.

**1975-1979:** Teaching Assistant, University of Toronto, Toronto, Ontario, Canada.

**1973-1975:** Assistant Lecturer, Department of Production Engineering, University of Sri Lanka, Peradeniya, Sri Lanka.

## **SCHOLARSHIPS, GRANTS, AND AWARDS**

**1972:** Dr. C.A. Hewavitarne Prize in Engineering for the highest GPA in the final Part III (Senior year) examination in Engineering, November 1972.

**1972:** E.O.E. Pereira Gold Medal for the outstanding student graduating from the Faculty of Engineering, University of Sri Lanka.

**1975-1979:** Canadian Commonwealth Scholarship for M.A.Sc. and Ph.D.

**1980:** Outstanding Young Man of America award.

**1980:** (Summer) Supported under contract No. F30602-77-C-0235 with Rome Air Development Center, Rome, NY.

**1981:** (Summer) Supported by Syracuse University Senate Research Fund.

**1981-1982:** New York State Science and Technology Foundation Grant.

**1983:** (Summer) Supported by the University of Arizona, Engineering Experimentation Station Fund.

**1984:** (Summer) Supported by a Bell Core Research Grant.

**1984-1990:** Co-Principal Investigator, Air Force Office of Scientific Research Grant. Grant number AFOSR-84-0205.

**1986-1987:** Principal Investigator, National Science Foundation Grant. Grant number ECS-8601210.

**1987-1988:** Schwabacher Fellowship.

**1988-1991:** Principal Investigator, National Science Foundation Grant. Grant number ECS-8811234.

**1989:** (Summer) Information Science Foundation of Japan Grant.

**1990:** (Summer) Supported by the Sloan Foundation Grant for 'Consortium for Competitiveness and Cooperation'.

**1990-1993:** Co-Principal Investigator, Air Force Office of Scientific Research Grant. Grant number AFOSR-90201.

1991-1998: (Participant) Sloan Foundation Grant for ‘Study on Competitive Semiconductor Manufacturing’.

1991-1994: Principal Investigator, National Science Foundation Grant. Grant Number DDM-9113008.

1993-1996: Principal Investigator, National Science Foundation Grant. Grant Number DMS-9308149.

1993 ORSA Lanchester Prize for the best publication in Operations Research: runner-up for the book *Stochastic Models of Manufacturing Systems*, co-authored with J. A. Buzacott. Was given an Honorable Mention.

1994-1996: Co-Principal Investigator, Semiconductor Research Corporation Grant for *Advances in Factory Logistics and Yield Management*.

1997-1998: Alpha Pi Mu Faculty of the Year Award

1999-2001: Principal Investigator, KLA-Tencor Corporation Grant for *Semiconductor Yield Management*.

1999-2001: Co-Principal Investigator, KLA-Tencor Corporation Grant for *Fabless-Foundry Partnership in Semiconductor Manufacturing*.

2000-2001: KLA-Tencor General Managers Award for the Best Team Project

2000-2001: Alpha Pi Mu Faculty of the Year Award

2002-2003: Alpha Pi Mu Faculty of the Year Award

2003-2004: Alpha Pi Mu Faculty of the Year Award

2004-2005: Co-Principal Investigator, National Science Foundation Grant. Grant number DMI-0434826.

2004-2005: Principal Investigator, KLA-Tencor Corporation Grant for *Semiconductor Yield Management*.

2005-2006: Principal Investigator, KLA-Tencor Corporation Grant for *Semiconductor Yield Management*.

2005-2008: Co-Principal Investigator (with Andrew Lim), National Science Foundation Grant. Grant number DMI-0500503, *Objective Operational Learning and Applications*.

2006-2008: Principal Investigator, Intel Grant for *Cycle Time Reduction in Semiconductor Fabrication Facilities*.

2008-2009: Co-Principal Investigator, Sustainable Products & Solutions Program Grant for *Improved Stoves for Health and Environmental Sustainability*.

2008-2009: Co-Principal Investigator (with Andrew Lim), Coleman Fung Risk Management Center Research Grant for *Fragility of Risk Measures and Other Computed Metrics*.

2010-2013: Co-Principal Investigator (with Andrew Lim and Max Shen), National Science Foundation Grant. Grant Number CMMI-1031637, *Coordinating Multiple Decision Makers in a Service Environment*

2012-2015: Co-Principal Investigator (with Andrew Lim), National Science Foundation Grant. Grant number CMMI-1201085, *Stochastic Optimization with Model Uncertainty and Learning*.

2013-2015: Co-Principal Investigator (with Qi Feng), Purdue OVRP Grant.

2014 Fellow of the Production and Operations Management Society (POMS)

2014 Fellow of the Institute for Operations Research and Management Science (INFORMS)

2017: President Elect for Production and Operations Management Society.

**2018:** President for Production and Operations Management Society.

**2018:** POMS Wickham Skinner Best Paper Award.

**2019:** Krannert Blake Family Ethics Fund.

**2020:** Krannert Blake Family Ethics Fund.

## **TEACHING EXPERIENCE**

**2009-present:** Purdue University, West Lafayette, IN

**1984-2009:** University of California, Berkeley, CA

**1987:** (Summer) Invited lecturer for Advanced Management Program for Caribbean Managers (held in Kingston, Jamaica, July 6-24).

**1987:** (Summer) Invited lecturer for Asian Institute of Technology - U.C. Berkeley Management Development Program (held in Bangkok, Thailand, August 2-14, 1987).

**1982-1984:** University of Arizona, Tucson, AZ

**1979-1982:** Syracuse University, Syracuse, New York

**1981:** (Summer) Invited lecturer of Management Dynamics for International Executives on Production and Inventory Control.

**1980:** (Summer) Invited lecturer for Algerian Program organized by the International Management Development Department of Syracuse University on Scheduling.

**1975-1979:** Teaching Assistant at University of Toronto, Toronto, Ontario, Canada

**1973-1975:** Assistant Lecturer, Department of Production Engineering, University of Sri Lanka, Peradeniya, Sri Lanka.

**1974-1975:** Visiting Lecturer, Saravathi Kalakam (a private institute for students appearing for the British Chartered Engineer's Examination) 17, Fussels Lane, Wellawatte, Sri Lanka.

**1974-1975:** Organizer and Principal Lecturer, Ananda Vidiyalaya (a private institute for students appearing for the British Chartered Engineers Examination) 18/1 George E. De Silva Mawaththa, Kandy, Sri Lanka.

## **DOCTORAL STUDENTS - completed**

1. K. Sriram, A Study of Multiplexing Schemes for Voice and Data (Co-chaired with Pramod K. Varshney), December 1983.

2. M. A. Jafari, Modelling of Automatic Transfer Lines with Scrapping, August 1984.

3. S. S. Hwang, Models for Production Planning in Flexible Manufacturing Systems, June 1986.

4. P. Y. Huang, Job Class Decomposition of Multi-Class Queueing Systems, December 1987.

5. C. Samaratinga, Adaptive Routing and Control in Integrated Circuit Fabrication Systems, June 1989.

6. R. L. Salstrom, Optimization of Manufacturing Systems, June 1989.

7. L. E. Meester, Contributions to the Theory and Applications of Stochastic Convexity, November 1990.

8. C. Wu, Analysis of Discrete Queueing Network Models of Communication Systems, December 1991.
9. S. Seshadri, Stochastic Models of Semiconductor Fabs (Co-chaired with Roger Glassey), August 1993.
10. W. Jang, Markovian Quality Control for Multiple Processes under Capacity Constraints, August 1997.
11. W. Kuo, Adaptive Sampling Strategies for Semiconductor Manufacturing, December 1997.
12. T. Sloan, Scheduling Semiconductor Wafer Manufacturing using In-Line Equipment Condition and Yield Information, May 1988.
13. S. J. Lee, Inspection Tool Selection and Capacity Allocation for In Line Process Control, May 1999.
14. J. Mo, Fair Congestion Control Protocols for the Internet (Co-chaired with Jean Walrand), May 1999.
15. C. Beam, Auctioning and Bidding in the Electronic Commerce: The Online Auction (Co-chaired with Arie Segev), May 1999.
16. N. Takezawa, Optimal Control of Service Times for Multi-Class Queues, July 1999.
17. R. Nassongkhla, Pricing and Yield Management for an Effective Fabless-Foundry Partnership, October 1999.
18. A. Ross, Queueing Systems with Daily Cycles and Stochastic Demand with Uncertain Parameters, 2001
19. E. Junquiera, Customer Forecasts and Supplier Commitment and Production Decisions in Supply Contract Relationships , (Co-chaired with Candice Yano), 2002
20. M. Celikbas, The Effects of Demand Uncertainty on Equilibrium of Price and Quantities in a Competitive Market, (Co-chaired with Miguel Vilalobas), 2002
21. D. Gudmundsson, Inspection and Metrology Capacity Allocation in the Full Production and Ramp Phases of Semiconductor Manufacturing, Fall 2005
22. A. Jain, Topics in Model Uncertainty and Learning, Spring 2010 (Co-chaired with Andrew Lim)
23. S-P. Kim, Stochastic Inventory Control in Closed-loop Hybrid System with Remanufacturing, Summer 2012 (Co-Chair with Seokcheon Lee)
24. V. Ramamurthy, Online, Data Driven Learning Approaches in Operations Management Problems, Summer 2012 (Co-chair with Max Shen)
25. N. Zhang, Essays on Nudging Customers' Behaviors: Evidence from Online Grocery Shopping and Crowdfunding, Summer 2015 (co-chair with Karthik Kannan)

Member of 74 **DOCTORAL COMMITTEES**

**DOCTORAL COMMITTEE outside reader or external examiner**

1. R. Nurani, Role of In-Line Process Monitoring and Control in Wafer Fab Management, Graduate School of Industrial Administration, Carnegie Mellon University, Pittsburg, PA. (December 1995)
2. T. Wong, Contributions to the Theory of Stochastic Orders, Program in Applied Mathematics, University of Arizona, Tucson, AZ. (May 1996)
3. H. C. Xia, Dynamic Scheduling of Queueing Systems with Applications to Computer Networks and Flexible Manufacturing, Stanford University, Palo Alto, CA. (December 1998)

4. M. A. Begen, Appointment Scheduling with Discrete Random Durations and Applications, The University of British Columbia, Vancouver, BC, Canada (March 2010)
5. Raha Akhavan-Tabatabaei, A Markov Chain Framework for Approximation of Cycle Time in Semiconductor Manufacturing Toolsets, North Carolina State University, NC (November 2010).
6. A. K. Misra, Stochastic Comparisons of Some Models in Reliability Theory, Indian Institute of Technology, Kanpur (March 2012)
7. C. D. Senanayake, Analytical Methods for the Performance Evaluation and Improvement of Multiple Part-Type Manufacturing Systems, National University of Singapore (May 2012)

#### **BOARD MEMBERSHIP OF COMPANIES**

**2006- 2018:** Member of the Technical Advisory Board, Intermolecular

**2009- 2016:** Member of the Technical Advisory Board, ReelSolar

#### **PRINCIPAL CONSULTANT**

**2006- 2018:** Sensor Analytics

#### **CONSULTING**

**1982:** Syracuse Research Incorporate

**1984-1986:** Bell Canada

**1989-1992:** Bell Communications Research

**1992:** Safeway, Inc.

**1993:** Southern Pacific Railways

**1993-2009:** Ken Leavy Associates, Instrumentations / Tencor (through KLA-Tencor worked on joint development projects with AMD, IBM, Intel, LSI, Motorola, TI, Toshiba, Fujitsu, TSMC and UMC)

**1994:** NTT, Japan

**1994:** IBM

**2005-2007:** Applied Materials

**2006-2009 and 2015-2016:** Intermolecular

#### **MEMBERSHIPS IN SCIENTIFIC ORGANIZATIONS**

**1989-present:** Production and Operations Management Society (POMS)

**1994-present:** Institute for Operations Research and Management Science (INFORMS)

**2015-present:** Institute for Electrical and Electronic Engineers (IEEE)

**1978-1994:** The Institute of Management Sciences (TIMS)

**1978-1994:** Operations Research Society of America (ORSA)

**1978-1979:** Canadian Operational Research Society (CORS)

**1980-1983:** Institute of Industrial Engineers (IIE)

**1980-1984:** Association for Computing Machinery (ACM)

**1980-1984:** Institute for Electrical and Electronic Engineers (IEEE)

**1981-1991:** Sigma Xi

**1982-1984:** Operations Research Society of Japan

**1992-1993:** Society for Industrial and Applied Mathematics (SIAM)

**2009-2012:** Institute for Electrical and Electronic Engineers (IEEE)

## PROFESSIONAL ACTIVITIES

### PRIZE COMMITTEES

1990: Co-chair, Best paper award committee for the first annual meeting of the Production and Operations Management Society

1990-1991: Member, ORSA Lanchester Prize Committee.

1991-1992: Chairman, ORSA Lanchester Prize Committee.

1992-1993: Member, Applied Probability Group's Erlang Prize Committee.

1995-1996: Member, Applied Probability Group's Erlang Prize Committee.

1996-1997: Member, Applied Probability Group's Erlang Prize Committee.

2003-2004: Member, POM's Wickham Skinner Early Career Achievement Award Committee.

2004-2005: Member, POM's Wickham Skinner Early Career Achievement Award Committee.

### COMMITTEES - PROFESSIONAL SOCIETIES

1986-1989: Member, Council of the ORSA/TIMS Group on Applied Probability

1989-1991: Member, Board of Directors, Production and Operations Management Society

1990-1991: Vice Chairman, ORSA/TIMS Group on Applied Probability

1991-1992: Chairman, ORSA/TIMS Group on Applied Probability

1992-1995: Member, Council of the ORSA/TIMS Group on Applied Probability

### ASSOCIATE EDITOR

1986-1999: *Operations Research*

1988-1989: *Annals of Operations Research* (special volume 1989)

1988-1995: *International Journal of Flexible Manufacturing Systems*

1988-1999: *Operations Research Letters*

1990-2000: *Queueing Systems: Theory and Applications*

1991-1995: *OPSEARCH*

1993-1995: *Journal of Discrete Event Dynamic Systems*

1993-2013: *Probability in the Engineering and Informational Sciences*

2017-present: *Naval Research Logistics*

### DEPARTMENT AND AREA EDITOR

1992-1995: *Journal of the Production and Operations Management Society*

1999-2001: *Operations Research Letters*

2018-present: *Management Science*

2019-present: *Production and Operations Management*

### SPECIAL EDITOR

2006-2019: *Journal of the Production and Operations Management Society*

### EDITOR

2006- 2009: *Journal of Flexible Services and Manufacturing* (Co-Editor)

## **EDITORIAL BOARD**

1997-2005 *IIE Transactions on Design and Manufacturing*

## **ADVISORY BOARD**

1997-2003: *Journal of the Production and Operations Management Society*

2004- to date: *IEEE Transactions on Automation Science and Engineering*

2005- to date: *Asia Pacific Journal on Operations Research*

2017- to date: *Journal of Flexible Services and Manufacturing*

## **REFEREE**

(i) Papers: Refereed over 400 technical papers for 70 journals: and for several conference proceedings and Proposals for AFOSR, NSF, ARO-National Research Council.

## **CONFERENCE ORGANIZING COMMITTEES**

**1985-1986:** Member, Organizing Committee, Second ORSA/TIMS Special Interest Conference on Flexible Manufacturing Systems, Ann Arbor, MI, August 13-15, 1986.

**1987-1988:** Organizer, Applied Probability Cluster Sessions, ORSA/TIMS Joint National Meeting, Denver, CO, October 24-26, 1988.

**1989-1990:** Co-chair, Organizing Committee, SIAM Special Interest Meeting on Applied Probability, New Orleans, LA, March 5-7, 1990.

**1990-1991:** Co-chair, ORSA/TIMS Special Interest Conference on Applied Probability, Monterey, CA, January 11-13, 1991.

**1990-1991:** Organizer, Multi-echelon Inventory Systems Conference, University of California at Berkeley, CA, June 1991.

**1991-1992:** Co-chair, Program Committee, ORSA/TIMS Joint National Meeting, San Francisco, CA, 1992.

**1992-1993:** Member, Organizing Committee, ORSA/TIMS Special Interest Conference on Applied Probability, Paris, France, 1993.

**1993-1994:** Member, Organizing Committee, International Conference on Stochastic Modeling, Delhi, India, 1994.

**1998:** Chair and Organizer of Contributed Paper Sessions, 15th Annual Quality and Productivity Research Conference, Santa Rosa, CA, 1998.

**2007:** Tutorial Chair for the Third annual IEEE Conference on Automation Science and Engineering, Scottsdale, AZ, September 22-25, 2007

**2012:** Member, Organizing Committee, INFORMS International, Beijing, China, June 24-27, 2012

**2014:** Member, Organizing Committee, Conference of the Chinese Scholars Association for Management Science and Engineering, Hohhot, Inner Mongolia, China, June 26-28, 2014.



**2015:** General Co-Chair, POMS 26th Annual Conference Planning Committee, Washington, DC, May 8-11, 2015

**2015:** Co-Chair, Organizing Committee, The 7th International Workshop on Behavioral Operations Management, Tianjin, China, December 19-20, 2015.

**2018:** Member, Organizing Committee, Tsinghua-JD-POMS International Workshop, Beijing, China, June 3-5, 2018.

**2018:** Member, Organizing Committee, POMS International Conference, Sri Lanka, Kandy, December 14-16, 2018.

**2019:** Honorary President, POMS China International Conference Board.

### **ORGANIZED AND/OR CHAIRED CONFERENCE SESSIONS**

Session #TC4: Queueing Models, at the ORSA/TIMS Joint National Meeting, Orlando, November 7-9, 1983.

Session #WB9: Reliability, at the ORSA/TIMS Joint National Meeting, Orlando, November 7-9, 1983.

Session #WA7: Stochastic Models of Job and Flow Shops, at the ORSA/TIMS Joint National Meeting, San Francisco, May 14-16, 1984.

Session #WA26: Applied Probability, at the ORSA/TIMS Joint National Meeting, Dallas, November 26-28, 1984.

Session #TB5: Stochastic Models of Production Systems, at the TIMS/ORSA Joint National Meeting, Boston, April 29 - May 1, 1985.

Session #MA14: Structural Properties of Stochastic Systems, at the TIMS/ORSA Joint National Meeting, Los Angeles, CA, April 14-16, 1986.

Session #WC07: Combinatorial Optimization III, at the TIMS/ORSA Joint National Meeting, Los Angeles, CA, April 14-16, 1986.

Session #IX: Production Planning I, at the 2nd ORSA/TIMS Special Interest Conference on Flexible Manufacturing System, Ann Arbor, MI, August 13-15, 1986.

Session #XIII: Production Planning III, at the 2nd ORSA/TIMS Special Interest Conference on Flexible Manufacturing System, Ann Arbor, MI, August 13-15, 1986.

Session #MC15: Reliability Modelling, at the ORSA/TIMS Joint National Meeting, Miami Beach, FL, October 27-29, 1986.

Session: Performance Evaluation of Computer / Production Systems, at the Eleventh IFORS International Conference on Operations Research, Buenos Aires, Argentina, August 10-14, 1987.

Session #TC03: Design and Control of Stochastic Systems, at the TIMS/ORSA Joint National Meeting, Washington, D.C., April 25-27, 1988.

Session #TD06: Queueing Theory and Teletraffic Applications, at the TIMS XXIX International Meeting, Osaka, Japan, July 23-26, 1989.

Minisymposium 5: Theory and Applications of Stochastic Ordering and Convexity, at the SIAM Conference on Applied Probability in Science and Engineering, New Orleans, LA, March 5-7, 1990.

Session #MA7: Queueing Network Models of Manufacturing Systems, at the ORSA- /TIMS Joint National Meeting, Philadelphia, PA, October 29-31, 1990.

Session C: Applications of Inequalities I, at the AMS-IMS-SIAM Joint Summer Research Conference, University of Washington, Seattle, WA, June 22-August 2, 1991.

Session #MA 28: Analysis and Control of Queueing Networks, at the ORSA/TIMS Joint National Meeting, Anaheim, CA, November 3-6, 1991.

Special Session on Applied Probability 1, at the 870th meeting of the AMS, Santa Barbara, CA, November 9-10, 1991.

Session # TE05: Contracts for coordinating Supply Chains, at the INFORMS National Meeting, Seattle, WA, 1998.

## **PANEL DISCUSSIONS, TUTORIALS AND KEYNOTE ADDRESSES IN CONFERENCES**

1. Hybrid Simulation/Analytic Models and Modelling of Dynamic Job Shops, invited panelist at the 1982 Winter Simulation Conference, San Diego, CA, December 6-8, 1982.
2. Analytic Representation of Simulation, invited panelist at the 1984 Winter Simulation Conference, Dallas, November 28-30, 1984.
3. What Type of Models: Analytic, Simulation, or Hybrid Simulation/Analytic, invited panelist at the 1984 Winter Simulation Conference, Dallas, Nov. 28-30, 1984.
4. Stochastic Orderings and Applications, Keynote Address at the Applied Probability Special Interest Meeting, Chapel Hill, NC, May 23-25, 1988.
5. A Critical Appraisal of the Management of Waiting, invited panelist at the ORSA- /TIMS Joint National Meeting, Nashville, TN, May 12-15, 1991.
6. The PAC System: A General Approach for Coordinating Multiple Cell Manufacturing Systems, Tutorial given at the ORSA/TIMS Joint National Meeting, Anaheim, CA, November 3-6, 1991.
7. Queueing Networks with Gated Service, Plenary Address at the Second ORSA Telecommunications Conference, Boca Raton, FL, March 9-11, 1992.
8. Stochastic Ordering, Theory of Stochastic Functions and Applications, Tutorial given at the TIMS/ORSA Joint National Meeting, Orlando, FL, April 26-29, 1992.
9. New Models and Approaches for Yield Management and Learning in Semiconductor Manufacturing, Tutorial given (jointly with R. Akella) at the INFORMS National Meeting, Washington DC, May 5-8, 1996.
10. Automated defect Classification, Invited panelist at the KLA-Tencor ADC Best Practices Workshop, San Francisco, CA, July 14, 1999.
11. Incorporating Model Uncertainty and Learning in Management Science, Plenary Address given at the International Conference on Management Science Applications, Chengdu, China, June 20-22, 2005.
12. Stochastic Dynamic Optimization with Model Uncertainty and Learning, Tutorial given (jointly with A. Lim and T. Watewai) at the INFORMS National Meeting, San Francisco, CA, November 13-16, 2005.
13. Model Uncertainty, Robust Optimization and Learning (jointly with Lim, A., J. G. Shanthikumar and Z-J. M. Shen) at the INFORMS National Meeting, Pittsburgh, PA, November 05-08, 2006.
14. Queueing Systems Modelling with Operational Statistics, Keynote Talk at the EURANDOM workshop on Stochastic Models of Manufacturing Systems, Eindhoven, The Netherlands, June 24-25, 2010.
15. Model Uncertainty, Robust Optimization and Learning, Invited Tutorial at the INFORMS International, Beijing, China, June 24-27, 2012.
16. Risk Management in Supply Chains, Invited Tutorial at the Mostly OM Conference, Beijing, China, May 30-31, 2013.

17. Analytics of Information in Operations Management, Invited Tutorial at the Conference of the Chinese Scholars Association for Management Science and Engineering, Hohhot, Inner Mongolia, China, June 26-28 , 2014.
18. Analytics of Information in Operations Management, Invited Keynote Address at the 2014 IEEE international conference on automation and logistics, Hulun-Buir, Inner Mongolia, China, June 30-31, 2014.
19. Frontier Analytics for Practical Production and Operations Management, Panelist at the 26th POMS Conference, Washington, DC, May 8-11, 2015.
20. Prescriptive Empirical Operations Management, Panelist at the 26th POMS Conference, Washington, DC, May 8-11, 2015.
21. Prescriptive Empirical Modeling and Frontier Analytics for Operations Management, Keynote Address, 3rd ISB-POMS Workshop, Hyderabad, India, December 21-22, 2015.
22. Prescriptive Empirical Operations Management, Tutorial at the 27th POMS Conference, Orlando, FL, May 6-8, 2016.
23. A Framework for Prescriptive Empirical Operations Management, Keynote Address, EURANDOM Workshop on "Data Driven Operations Management", Eindhoven, Netherland, October 24-26, 2016.
24. A Framework for Data Integrated Prescriptive Operations Management, Tutorial at the 27th POMS-HK Conference, Hong Kong, January 7-8, 2017.
25. From Data Driven to Data Integrated Operations Management, Thought Leader Presentation at the MSOM SIG Conference on Supply Chain, Chapel Hill, NC., June 19, 2017.
26. Operational Data Analytics for Supply Chain Management, Keynote Presented at the Tsinghua-JD-POMS International Workshop, Beijing, June 3: Qindao, June 4-5, 2018.
27. Data Integrated Stochastics: Models and Methods, Tutorial Presented at the INFORMS international Conference, Taipei, Taiwan, June 17-20, 2018.
28. Meet the Editors, Panel Discussion at the INFORMS international Conference, Taipei, Taiwan, June 17-20, 2018.
29. Enhancing the Value of Machine Learning with Structured Modeling, Keynote Presentation at the Applied Materials Annual Engineering and Technology (AMAT ET) Conference, Las Vegas NV, June 26-28, 2018.
30. Operational Data Analytics for Operations Management, Keynote Presented at the JD-USTC International Workshop on Data Driven Logistics and Supply Chain Management, University of Science and Technology, Hebei, China, July 11-12, 2018.
31. Operational Data Analytics for Operations Management, Keynote Presented at the Workshop on Data-driven Innovations in Business Operations, Fudan University, Shanghai, China, July 18, 2018.
32. Building a Business Data Science community: Publishing and reviewing practices in the top business journals, Panelist at the INFORMS Data Science workshop, Phoenix, AZ, November 3, 2018.
33. Data-integrated Stochastics: Models And Methods, Tutorial Presented at the INFORMS Annual Meeting, Phoenix, AZ, November 4-7, 2018.
34. Data Integrated Operations Management with Operational Data Analytics, Keynote Presented at the POMS International Conference, Sri Lanka, Kandy, Sri Lanka, Decmber 14-16, 2018.

195 PAPERS CONTRIBUTED TO CONFERENCES (with no proceedings)

112 INVITED TALKS AT UNIVERSITIES AND RESEARCH INSTITUTES

## EXTRACURRICULAR INTERESTS AND ACTIVITIES

Photography, travelling, fishing, tennis, music, electrical Repairs and building personal computers. Social/Seminar Organizer, Industrial Engineering Graduate Students Association, 1976-1977. Captain, Jaffna Central College Athletic team, 1968.

## PUBLICATIONS

### I. REFEREED PUBLICATIONS

#### A. Archival Journals

- [1] Shanthikumar, J.G., A Comment on the Paper: An Optimal Solution for Scheduling of Printing and Binding, *INFOR, Canadian Journal of Operational Research and Information Processing*, 14, (October 1976), 288-291.
- [2] Shanthikumar, J.G., On a Single Server Queue with State Dependent Service, *Naval Research Logistics Quarterly*, 26, (June 1979), 305-309.
- [3] Shanthikumar, J.G., Effects of Opportune Maintenance in a Single Machine Job Shop, *Engineer, Quarterly Journal of the Institute of Engineers, Sri Lanka*, 7, (December 1979), 22-25.
- [4] Shanthikumar, J.G., Some Analyses on the Control of Queues Using Level Crossings of Regenerative Processes, *Journal of Applied Probability*, 17, (September 1980), 814-821.
- [5] Shanthikumar, J.G., On the Production Capacity of Automatic Transfer Lines with Unlimited Buffer Space, *AIIE Transactions*, 12, (September 1980), 273-274.
- [6] Shanthikumar, J.G. and J.A. Buzacott, On the Approximations to the Single Server Queue, *International Journal of Production Research*, 19, (November/December 1980), 761-773.
- [7] Buzacott, J.A. and J.G. Shanthikumar, Models for Understanding Flexible Manufacturing Systems, *AIIE Transactions*, 14, (December 1980), 339-350.
- [8] Shanthikumar, J.G., Analysis of the Control of Queues with Shortest Processing Time Service Discipline, *Journal of the Operations Research Society of Japan*, 23, (December 1980), 341-352.
- [9] Shanthikumar, J.G., Comments on the Buffer Behavior in Computer Communications Systems, *IEEE Transactions on Computers*, C30, (February 1981), 157.
- [10] Shanthikumar, J.G. and J.A. Buzacott, Open Queueing Network Models of Dynamic Job Shops, *International Journal of Production Research*, 19, (May/June 1981), 255-266.
- [11] Shanthikumar, J.G., Optimal Control of an M/G/1 Priority Queue Via N-Control, *American Journal of Mathematical and Management Sciences*, 1, (September 1981), 191-212.

- [12] Shanthikumar, J.G., A General Software Reliability Model for Performance Prediction, *Microelectronics and Reliability*, 21, (September/October 1981), 671-682.
- [13] Shanthikumar, J.G., M/G/1 Queue with Scheduling within Generations and Removable Server, *Operations Research*, 29, (September/October 1981), 1010-1018.
- [14] Shanthikumar, J.G., On the Buffer Behavior with Poisson Arrivals, Priority Service, and Random Server Interruptions, *IEEE Transactions on Computers*, C30, (October 1981), 781-786.
- [15] Shanthikumar, J.G. and R.G. Sargent, An Algorithmic Solution for a Queueing Model of a Computer System with Interactive and Batch Jobs, *Performance Evaluation, An International Journal*, 1, (December 1981), 334-357.
- [16] Shanthikumar, J.G., On Level Crossing Analysis of Queues, *The Australian Journal of Statistics*, 23, (December 1981), 337-342.
- [17] Shanthikumar, J.G., On the Use of Decomposition Approach in a Single Machine Scheduling Problem, *Journal of the Operations Research Society of Japan*, 25, (March 1982), 29-47.
- [18] Shanthikumar, J.G., On Reducing Time Spent in M/G/1 Systems, *European Journal of Operational Research*, 9, (March 1982), 286-294.
- [19] Shanthikumar, J.G., A Recursive Algorithm to Generate Joint Probability Distribution of Arrivals from Exponential Sources During a Random Time Interval, *Information Processing Letters*, 14, (July 1982), 214-217.
- [20] Shanthikumar, J.G., Level Crossing Analysis of Some Variants of GI/M/1 Queues, *OPSEARCH*, 19, (September 1982), 148-159.
- [21] Shanthikumar, J.G., Recursive Algorithm to Evaluate the Reliability of a Consecutive-k-out-of-n:F System, *IEEE Transactions on Reliability*, R31, (December 1982), 442-443.
- [22] Sargent, R.G. and J.G. Shanthikumar, Cyclic Regenerative Method of Simulation, *Operations Research Letters*, 1, (December 1982), 222-229.
- [23] Shanthikumar, J.G., Analysis of a Single Server Queue with Time- and Operation-Dependent Server Failures, *Advances in Management Studies*, 1, (December 1982), 339-359.
- [24] Shanthikumar, J.G. and M.J. Chandra, Application of Level Crossing Analysis to Discrete State Processes in Queueing Systems, *Naval Research Logistics Quarterly*, 29, (December 1982), 593-608.
- [25] Sarker, B.R. and J.G. Shanthikumar, A Generalized Approach for Serial or Parallel Line Balancing, *International Journal of Production Research*, 21, (January/February 1983), 109-113.
- [26] Shanthikumar, J.G. and S. Tufekci, Application of a Software Reliability Model to Decide Software Release Time, *Microelectronics and Reliability*, 23, (March 1983), 41-59.
- [27] Shanthikumar, J.G., Bounds for the Expected Number of Hospital Bed Occupancy, *Engineer, Journal of the Institution of Engineers, Sri Lanka*, 1, (June 1983), 20-23.
- [28] Shanthikumar, J.G., Scheduling n Jobs on One Machine to Minimize Maximum Tardiness with Minimum Number of Tardy Jobs, *Computers and Operations Research*, 10, (June 1983), 255-266.
- [29] Shanthikumar, J.G., Bounds and an Approximation for Single Server Queues, *Journal of the*

*Operations Research Society of Japan*, 26, (June 1983), 118-134.

[30] Chandra, M.J. and J.G. Shanthikumar, On a Machine Interference Problem with Several Types of Machines Attended by a Single Repairman, *International Journal of Production Research*, 21, (July/August 1983), 529-541.

[31] Shanthikumar, J.G. and C.C. Tien, An Algorithmic Solution to Two-Stage Transfer Lines with Possible Scrapping of Units, *Management Science*, 29, (September 1983), 1069-1086.

[32] Shanthikumar, J.G. and U. Sumita, General Shock Models Associated with Correlated Renewal Sequences, *Journal of Applied Probability*, 20, (September 1983), 604-614.

[33] Shanthikumar, J.G., Software Reliability Models: A Review, *Microelectronics and Reliability*, 23, (September/October 1983), 903-943.

[34] Shanthikumar, J.G. and M. Gocmen, Heuristic Analysis of Closed Queueing Networks, *International Journal of Production Research*, 21, (September/October 1983), 675-690.

[35] Shanthikumar, J.G., and R.G. Sargent, A Unifying View of Hybrid Simulation/Analytic Models and Modeling, *Operations Research*, 31, (November/December 1983), 1030-1052.

[36] Sriram, K., P.K. Varshney and J.G. Shanthikumar, Discrete-Time Analysis of Integrated Voice/Data Multiplexers With and Without Speech Activity Detectors, *IEEE Journal on Selected Areas in Communications*, 1, (December 1983), 1124-1132.

[37] Shanthikumar, J.G., On a Software Availability Model with Imperfect Maintenance, *Operations Research Letters*, 2, (March 1984), 285-290.

[38] Shanthikumar, J.G., Comparison of Dispatch Policies for a Single Server Queueing Model with Limited Operational Control, *International Journal of Production Research*, 22, (May/June 1984), 389-403.

[39] Shanthikumar, J.G. and U. Sumita, Distribution Properties of System Failure Time in a General Shock Model, *Advances in Applied Probability*, 16, (June 1984), 363-377.

[40] Shanthikumar, J.G. and R.G. Sargent, An Algorithmic Approach for a Special Class of Markov Chains, *Operations Research Letters*, 3, (June 1984), 81-84.

[41] Shanthikumar, J.G. and U. Sumita, A Central Limit Theorem for Random Sums of Random Variables, *Operations Research Letters*, 3, (August 1984), 153-155.

[42] Shanthikumar, J.G. and J.A. Buzacott, The Time Spent in a Dynamic Job Shop, *European Journal of Operational Research*, 17, (August 1984), 215-226.

[43] Shanthikumar, J.G., Processes with New Better than Used First Passage Times, *Advances in Applied Probability*, 16, (September 1984), 667-686.

[44] Shanthikumar, J.G., Analyses of Priority Queues with Server Control, *OPSEARCH*, 27, (September 1984), 183-192.

[45] Shanthikumar, J.G. and Y.B. Wu, Decomposition Approaches in Permutation Scheduling Problems with Application to the M-machine Flow Shop Scheduling Problem, *European Journal of Operational Research*, 19, (January 1985), 125-141.

- [46] Shanthikumar, J.G., Bilateral Phase Type Distribution, *Naval Research Logistics Quarterly*, 32, (March 1985), 119-136.
- [47] Assaf, D., M. Shaked and J.G. Shanthikumar, First Passage Times with  $PF_r$  Densities, *Journal of Applied Probability*, 22, (March 1985), 185-196.
- [48] Shanthikumar, J.G. and L.A. Baxter, Closure Properties of the Relevation Transform, *Naval Research Logistics Quarterly*, 32, (March 1985), 185-189.
- [49] Sumita, U. and J.G. Shanthikumar, A Class of Correlated Cumulative Shock Models, *Advances in Applied Probability*, 17, (June 1985), 347-366.
- [50] Buzacott, J.A. and J.G. Shanthikumar, On Approximate Queueing Models of Dynamic Job Shops, *Management Science*, 31, (July 1985), 870-887.
- [51] Shanthikumar, J.G., Discrete Random Variate Generation Using Uniformization, *European Journal of Operational Research*, 21, (September 1985), 387-398.
- [52] Shanthikumar, J.G., Lifetime Distribution of Consecutive-k-out-of-n:F Systems with Exchangeable Lifetimes, *IEEE Transactions on Reliability*, R34, (December 1985), 480-483.
- [53] Shanthikumar, J.G. and U. Sumita, On the Busy Period Distributions of M/G/1/K Queues with State Dependent Arrivals and FCFS/LCFS-P Service Disciplines, *Journal of Applied Probability*, 22, (December 1985), 912-919.
- [54] Shanthikumar, J.G., Bounds for the System Reliability Function, *Stochastic Models*, 2, (February 1986), 151-159.
- [55] Shaked, M. and J.G. Shanthikumar, Multivariate Imperfect Repair, *Operations Research*, 34, (May/June 1986), 437-448.
- [56] Masuda, Y., J.G. Shanthikumar and U. Sumita, A General Software Availability / Reliability Model: Numerical Exploration via the Matrix Laguerre Transform, *Stochastic Models*, 2, (June 1986), 203-236.
- [57] Shanthikumar, J.G. and D.D. Yao, The Effect of Increasing Service Rates in a Closed Queueing Network, *Journal of Applied Probability*, 23, (June 1986), 474-483.
- [58] Shaked, M. and J.G. Shanthikumar, Total Hazard Construction, Antithetic Variates and Simulation of Stochastic Systems, *Stochastic Models*, 2, (June 1986), 237-249.
- [59] Shanthikumar, J.G., Uniformization and Hybrid Simulation/Analytic Models of Renewal Processes, *Operations Research*, 34, (July/August 1986), 573-580.
- [60] Shanthikumar, J.G. and K. Steckel, Reducing Work-in-Process Inventory in Certain Classes of Flexible Manufacturing Systems, *European Journal of Operational Research*, 26, (August 1986), 266-271.
- [61] Shanthikumar, J.G. and U. Sumita, On G/G/I Queues with LIFO-P Service Discipline, *Journal of the Operations Research Society of Japan*, 29, (September 1986), 220-231.
- [62] Shanthikumar, J.G., First Failure Time of Dependent Parallel Systems with Safety Periods, *Microelectronics and Reliability*, 26, (September/October 1986), 955-972.

- [63] Sumita, U. and J. G. Shanthikumar, Software Reliability Models with Multiple Error Introduction and Removals, *IEEE Transactions on Reliability*, *R35*, (October 1986), 459-462.
- [64] Shanthikumar, J. G. and D. D. Yao, The Preservation of Likelihood Ratio Ordering under Convolution, *Stochastic Processes and Their Applications*, *23*, (December 1986), 259-267.
- [65] Gupta, J.N.D., J.G. Shanthikumar and W. Swarc, Generating Improved Dominance Conditions for Flowshop Scheduling Problem, *Computers and Operations Research*, *14*, (February 1987), 41-45.
- [66] Yao, D.D. and J.G. Shanthikumar, The Optimal Input Rates to a System of Manufacturing Cells, *INFOR, Canadian Journal of Operational Research and Information Processing*, *25*, (February 1987), 57-65.
- [67] Mok, S.K. and J.G. Shanthikumar, A Transient Queueing Model for Business Office with Standby Servers, *European Journal of Operational Research*, *28*, (February 1987), 158-174.
- [68] Shaked, M. and J.G. Shanthikumar, Multivariate Hazard Rates and Stochastic Ordering, *Advances in Applied Probability*, *19*, (March 1987), 123-137.
- [69] Shanthikumar, J.G., On Stochastic Comparison of Random Vectors, *Journal of Applied Probability*, *24*, (March 1987), 123-136.
- [70] Sumita, U., J.G. Shanthikumar and Y. Masuda, Analysis of Fault Tolerant Computer Systems, *Microelectronics and Reliability*, *27*, (March/April 1987), 65-78.
- [71] Shanthikumar, J.G. and D.D. Yao, Comparing Ordered-Entry Queues with Heterogeneous Servers, *Queueing Systems: Theory and Applications*, *2*, (June 1987), 235-244.
- [72] Shaked, M. and J.G. Shanthikumar, The Multivariate Hazard Construction, *Stochastic Processes and their Applications*, *24*, (July 1987), 241-258.
- [73] Shanthikumar, J. G. and D. D. Yao, Stochastic Monotonicity of the Queue Lengths in Closed Queueing Networks, *Operations Research*, *35*, (July/August 1987), 583-588.
- [74] Shaked, M. and J. G. Shanthikumar, IFRA Properties of Some Markov Jump Processes with General State Space, *Mathematics of Operations Research*, *12*, (August 1987), 562-568.
- [75] Shanthikumar, J.G. and D.D. Yao, Optimal Server Allocation in a System of Multi-Server Stations, *Management Science*, *33*, (September 1987), 1173-1180.
- [76] Shaked, M. and J.G. Shanthikumar, Characterization of First Passage Times Using Logconcavity and Logconvexity as Aging Notions, *Probability in the Engineering and Informational Sciences*, *1*, (September 1987), 279-291.
- [77] Shanthikumar, J. G. and U. Sumita, Convex Ordering of Sojourn Times in Single Server Queues: Extremal Properties of FIFO and LIFO Service Disciplines, *Journal of Applied Probability*, *24*, (September 1987), 737-748.
- [78] Jafari, M.A. and J.G. Shanthikumar, An Approximate Model of Multistage Automatic Transfer Lines with Possible Scrapping of Workpieces, *IIE Transactions*, *19*, (September 1987), 252-265.
- [79] Assaf, D. and J. G. Shanthikumar, Optimal Group Maintenance Policies with Continuous and Periodic Inspection, *Management Science*, *33*, (November 1987), 1440-1452.



- [80] Shanthikumar, J.G., Stochastic Majorization of Random Variables with Proportional Equilibrium Rates, *Advances in Applied Probability*, 19, (December 1987), 854-872.
- [81] Jafari, M. A. and J. G. Shanthikumar, Exact and Approximate Solutions to Two-Stage Flow Lines with General Uptime and Downtime Distributions, *IIE Transactions*, 19, (December 1987).
- [82] Shanthikumar, J.G., Reliability of Systems with Consecutive Minimal Cutsets, *IEEE Transactions on Reliability*, R36, (December 1987), 546-550.
- [83] Sumita, U. and J.G. Shanthikumar, A Hybrid Simulation/Analytic Approach for Computer Communication Systems via Exponential Limit Theorems, *Microelectronics and Reliability*, 28, (January 1988), 1-5.
- [84] Shanthikumar, J.G., DFR Property of First Passage Times and Its Preservation under Geometric Compounding, *Annals of Probability*, 16, (January 1988), 397-406.
- [85] Shaked, M. and J.G. Shanthikumar, On the First Failure Time of Dependent Multicomponent Reliability Systems, *Mathematics of Operations Research*, 13, (February 1988), 50-64.
- [86] Shaked, M. and J. G. Shanthikumar, Multivariate Conditional Hazard Rates and the MIFRA and MIFR Properties, *Journal of Applied Probability*, 25, (March 1988), 150-168.
- [87] Shanthikumar, J. G. and D. D. Yao, On Server Allocation in Multiple Center Manufacturing Systems, *Operations Research*, 36, (March/April 1988), 333-342.
- [88] Shanthikumar, J.G., Bounding Network Reliability using Consecutive Minimal Cutsets, *IEEE Transactions on Reliability*, R37, (April 1988), 45-49.
- [89] Shaked, M. and J.G. Shanthikumar, Stochastic Convexity and its Applications, *Advances in Applied Probability*, 20, (June 1988), 427-446.
- [90] Shanthikumar, J.G., On Stochastic Decomposition in M/G/1 Type Queues with Generalized Server Vacations, *Operations Research*, 36, (July/August 1988), 566-569.
- [91] Shanthikumar, J.G., On Some Queueing Models of Time Division Multiple Access Communication System, *Performance Evaluation*, 8, (August 1988), 289-304.
- [92] Shanthikumar, J.G. and U. Sumita, Approximations for the Time Spent in a Dynamic Job Shop with Application to Due Date Assignment," *International Journal of Production Research*, 26, (August 1988), 1329-1352.
- [93] Yao, D.D. and J.G. Shanthikumar, Allocating a Joint Setup in a Multi-Cell System, *Annals of Operations Research*, 15, (August 1988), 155-167.
- [94] Shanthikumar, J.G. and D.D. Yao, Second-Order Properties of the Throughput of a Closed Queueing Network, *Mathematics of Operations Research*, 13, (August 1988), 524-534.
- [95] Shaked, M. and J.G. Shanthikumar, On the First Passage Times of Pure Jump Processes, *Journal of Applied Probability*, 25, (September 1988), 501-509.
- [96] Shanthikumar, J.G. and D.D. Yao, Throughput Bounds for Closed Queueing Networks with Queue-Dependent Service Rates, *Performance Evaluation*, 9, (September 1988), 69-78.
- [87] Shaked, M. and J. G. Shanthikumar, Temporal Stochastic Convexity and Concavity, *Stochastic*

- Processes and Their Applications*, 27, (December 1988), 1-20.
- [98] Sumita, U. and J.G. Shanthikumar, An Age Dependent Counting Process Generated from a Renewal Process, *Advances in Applied Probability*, 20, (December 1988), 739-755.
- [99] Shanthikumar, J.G. and D. D. Yao, Second-Order Stochastic Properties in Queueing Systems, *Proceedings of the IEEE*, 77, (January 1989), 162-170.
- [100] Shaked, M. and J.G. Shanthikumar, Some Replacement Policies in a Random Environment, *Probability in the Engineering and Informational Sciences*, 3, (March 1989), 117-134.
- [101] Yoon, B.S. and J.G. Shanthikumar, Bounds and Approximations for the Transient Behavior of Continuous Time Markov Chains, *Probability in the Engineering and Informational Sciences*, 3, (June 1989), 175-198.
- [102] Jafari, M.A. and J.G. Shanthikumar, Determination of Optimal Buffer Storage Capacities and Optimal Allocation in Multistage Automatic Transfer Lines, *IIE Transactions*, 21, (June 1989), 130-135.
- [103] Shanthikumar, J.G. and D.D. Yao, Stochastic Monotonicity in General Queueing Networks, *Journal of Applied Probability*, 26, (June 1989), 413-417.
- [104] Shanthikumar, J.G. and D.D. Yao, Optimal Allocation of Buffers in a System of Flexible Manufacturing Cells, *International Journal of Flexible Manufacturing Systems*, 1, (September 1989), 347-356.
- [105] Righter, R. and J.G. Shanthikumar, Scheduling Multiclass Single Server Queueing System to Stochastically Maximize the Number of Successful Departures, *Probabilities in the Engineering and the Informational Sciences*, 3, (September 1989), 323-334.
- [106] Shanthikumar, J.G. and U. Sumita, Modified Lindley Process with Replacement: Dynamic Behavior, Asymptotic Decomposition and Applications, *Journal of Applied Probability*, 26, (September 1989), 552-565.
- [107] Shanthikumar, J.G., Level Crossing Analysis of Priority Queues and a Conservation Identity for Vacation Models, *Naval Research Logistics*, 36, (November/December 1989), 797-806.
- [108] Cinlar, E., M. Shaked and J.G. Shanthikumar, On Lifetimes Influenced by a Common Environment, *Stochastic Processes and their Applications*, 33, (December 1989), 347-359.
- [109] Shanthikumar, J.G. and H.W. Koo, On Uniform Conditional Stochastic Order Conditioned on Planar Regions, *Journal of Applied Probability*, 27, (March 1990), 115-123.
- [110] Shaked, M. and J.G. Shanthikumar, Convexity of a Set of Stochastically Ordered Random Variables, *Advances in Applied Probability*, 22, (March 1990), 160-177.
- [111] Assaf, D. and J.G. Shanthikumar, Optimal Spares Provisioning when Component Price is Changing, *Operations Research*, 38, (March/April 1990), 319-329.
- [112] Righter, R., J.G. Shanthikumar and G. Yamazaki, On Extremal Service Disciplines in Single Stage Queueing Systems, *Journal of Applied Probability*, 27, (June 1990), 409-416.
- [113] Shaked, M. and J.G. Shanthikumar, Multivariate Stochastic Orderings and Positive Dependence in Reliability Theory, *Mathematics of Operations Research*, 15, (August 1990), 545-552.

- [114] Ott, T.J. and J.G. Shanthikumar, On Maxima and Minima of Partial Sums of Strongly Interchangeable Random Variable, *Probability in the Engineering and Informational Sciences*, 4, (September 1990), 319-332.
- [115] Shaked, M. and J.G. Shanthikumar, Parametric Stochastic Convexity and Concavity of Stochastic Processes, *Annals of the Institute of Statistical Mathematics*, 42, (September 1990), 509-531.
- [116] Meester, L.E. and J.G. Shanthikumar, Concavity of the Throughput of Tandem Queueing Systems with Finite Buffer Storage Space, *Advances in Applied Probability*, 22, (September 1990), 764-767.
- [117] Hochbaum, D.S. and J.G. Shanthikumar, Convex Separable Optimization is Not Much Harder than Linear Optimization, *Journal of the Association for Computing Machinery*, 37, (October 1990), 843-862.
- [118] Yao, D.D. and J.G. Shanthikumar, Optimal Scheduling Control of a Flexible Machine, *IEEE Journal of Robotics and Automation*, 6, (December 1990), 706-712.
- [119] Shanthikumar, J.G., G. Yamazaki and H. Sakasegawa, Characterization of Optimal Ordering of Servers in a Tandem Queue with Blocking, *Operations Research Letters*, 10, (January 1991), 17-22.
- [120] Miyazawa, M. and J.G. Shanthikumar, Monotonicity of the Loss Probabilities of Single Server Finite Queues with Respect to Convex Order of Arrival or Service Processes, *Probability in the Engineering and Informational Sciences*, 5, (March 1991), 43-52.
- [121] Shaked, M. and J.G. Shanthikumar, Dynamic Multivariate Aging Notions in Reliability Theory, *Stochastic Processes and Their Applications*, 38, (March 1991), 85-97.
- [122] Yamazaki, G., H. Sakasegawa and J.G. Shanthikumar, A Conservation Law for Single Server Queues and its Applications, *Journal of Applied Probability*, 28, (March 1991), 198-201.
- [123] Shanthikumar, J.G. and D.D. Yao, Strong Stochastic Convexity: Closure Properties and Applications, *Journal of Applied Probability*, 28, (March 1991), 131-145.
- [124] Ott, T.J. and J.G. Shanthikumar, Structural Properties and Stochastic Bounds for a Buffer Problem in Packetized Voice Transmission, *Queueing Systems: Theory and Applications*, 8, (April 1991), 225-236.
- [125] Rachamadugu, R. and J.G. Shanthikumar, Layout Considerations in Assembly Line Design, *International Journal of Productions Research*, 29, (April 1991), 755-768.
- [126] Shanthikumar, J.G. and C. Wu, On the Starshapeness of G/G/c Queueing Systems, *Advances in Applied Probability*, 23, (June 1991), 431-435.
- [127] Shaked, M. and J.G. Shanthikumar, Shock Models with MIFRA Time to Failure Distributions, *Journal of Statistical Planning and Inference*, 29, (June 1991), 157-169.
- [128] Shaked, M. and J.G. Shanthikumar, Dynamic Multivariate Mean Residual Life Functions, *Journal of Applied Probability*, 28, (September 1991), 613-629.
- [129] Ott, T.J. and J.G. Shanthikumar, On a Buffer Problem for Packetized Voice with an N-Periodic Strongly Interchangeable Input Process, *Journal of Applied Probability*, 28, (September

1991), 630-646.

[130] Shanthikumar, J.G. and D.D. Yao, Bivariate Characterization of Some Stochastic Order Relations, *Advances in Applied Probability*, 23, (September 1991), 642-659.

[131] Chang, C. S., X. Chao, M. Pinedo and J. G. Shanthikumar, Stochastic Convexity for Multidimensional Processes and Its Applications, *IEEE Transaction on Automatic Control*, 36, (December 1991), 1347-1355.

[132] Yamazaki, G., H. Sakasegawa and J.G. Shanthikumar, On Optimal Arrangement of Stations in Tandem Queueing System with Blocking, *Management Science*, 38, (January 1992), 137-153.

[133] Buzacott, J. A. and J. G. Shanthikumar, A General Approach for Coordinating Production in Multiple-Cell Manufacturing Systems, *Production and Operations Management*, 1, (February 1992), 34-52.

[134] Shanthikumar, J.G. and D.D. Yao, Spatiotemporal Convexity of Stochastic Processes and Applications, *Probability in the Engineering and Informational Sciences*, 6, (March 1992), 1-16.

[135] Shanthikumar, J.G. and D.D. Yao, Multiclass Queueing Systems: Polymatroid Structure and Optimal Scheduling Control, *Operations Research*, 40, (May/June 1992), S293-S299.

[136] Hochbaum, D.S., R. Shamir and J. G. Shanthikumar, A Polynomial Algorithm for an Integer Quadratic Nonseparable Transportation Problem, *Mathematical Programming*, 55, (June 1992), 359-371.

[137] Righter, R. and J.G. Shanthikumar, Extension of the Bivariate Characterization for Stochastic Orders, *Advances in Applied Probability*, 24, (June 1992), 506-508.

[138] Xu, S. H., R. Righter and J. G. Shanthikumar, Optimal Dynamic Assignment of Customers to Heterogeneous Servers in Parallel, *Operations Research*, 40, (Nov/Dec 1992), 1126-1138.

[139] Shaked, M. and J. G. Shanthikumar, Optimal Allocation of Resources to Nodes of Parallel and Series Systems, *Advances in Applied Probability*, 24, (December 1992), 894-914.

[140] Righter, R. and J. G. Shanthikumar, Extremal Properties of the FIFO Discipline in Queueing Networks, *Journal of Applied Probability*, 29, (December 1992), 967-978.

[141] Buzacott, J. A. and J. G. Shanthikumar, Design of Manufacturing Systems using Queueing Models, *Queueing Systems: Theory and Applications*, 12, (December 1992), 135-213.

[142] Segev, A., H. Gunadhi, R. Chandra and J.G. Shanthikumar, Selectivity Estimation of Temporal Data Manipulations, *Information Sciences*, 74, (March 1993) 111-149.

[143] Ross, S. M., J. G. Shanthikumar and X. Zhang, Some Pitfalls of Black Box Queue Inference: The Case of State Dependent Server Queues, *Probability in the Engineering and Informational Sciences*, 7, (June 1993), 149-157.

[144] Shaked, M. and J.G. Shanthikumar, Dynamic Conditional Marginal Distributions in Reliability Theory, *Journal of Applied Probability*, 30, (June 1993), 421-428.

[145] Shaked, M., J.G. Shanthikumar and H. Zhu, Discrete Repairable Reliability Systems, *Naval Research Logistics*, 40, (August 1993), 769-786.

- [146] Meester, L. and J. G. Shanthikumar, Regularity of Stochastic Processes: A Theory Based on Directional Convexity, *Probability in the Engineering and Informational Sciences*, 7, (September 1993), 343-360.
- [147] Xu, S.H. and J.G. Shanthikumar, Optimal Expulsion Control - A Dual Approach to Admission Control of an Ordered-Entry System, *Operations Research*, 41, (Nov/Dec 1993), 1137-1152.
- [148] Ball, M. O. and J. G. Shanthikumar, Bounding a Probability Measure over a Polymatroid with an Application to Transportation Problems, *Mathematics of Operations Research*, 19, (February 1994), 112-120.
- [149] Shanthikumar, J.G. and M. Jafari, Bounding the Performance of Tandem Queues with Finite Buffer Spaces, *Annals of Operations Research*, 48, (February 1994), 185-195.
- [150] Richter, R. and J. G. Shanthikumar, Bounds for Stopping Times with Application to the Approximation of Distribution Functions, *Probability in the Engineering and Informational Sciences*, 8, (March 1994), 21-31.
- [151] Shaked, M. J.G. Shanthikumar and J. B. Valdez-Torres, Discrete Probabilistic Orderings in Reliability Theory, *Statistica Sinica*, 4, (June 1994), 567-579.
- [152] Shanthikumar, J. G., Convexity of Single Stage Queueing Systems with Bulk Arrival, *Queueing Systems: Theory and Applications*, 16, (June 1994), 287-299.
- [153] Chen, H. and J.G. Shanthikumar, Fluid Limits and Diffusion Approximations for Networks of Multi-Server Queues in Heavy Traffic, *Journal on Discrete Event Dynamic Systems*, 4, (June 1994), 269-292.
- [154] Buzacott, J.A. and J.G. Shanthikumar, Safety Stock versus Safety Time, *Management Science*, 40, (December 1994), 1678-1688.
- [155] Shaked, M., J. G. Shanthikumar and J. B. Valdez-Torres, Discrete Hazard Rate Functions, *Computers and Operations Research*, 22, (March 1995), 391-402.
- [156] Shaked, M. and J. G. Shanthikumar, Hazard Rate Ordering of k-out-of-n Systems, *Statistics and Probability Letters*, 23, (April 1995), 1-8.
- [157] Shaked, M., J.G. Shanthikumar and Y. L. Tong, Parametric Schur Convexity and Arrangement Monotonicity Properties of Partial Sums, *Journal on Multivariate Analysis*, 53, (May 1995), 293-310.
- [158] Buzacott, J.A., X.G. Liu and J.G. Shanthikumar, Multistage Flow Line Analysis with the Stopped Arrival Queue Model, *IIE Transaction*, 27, (June 1995), 444-455.
- [159] Carmon, Z., J. G. Shanthikumar and T. F. Carmon, A Psychological Perspective on Service Segmentation: The significance of Accounting for Consumers' Perceptions of Waiting and Service, *Management Science*, 41, (November 1995) 1806-1815.
- [160] Tamaki, M. and J.G. Shanthikumar, A Full-Information Best-Choice Problem with Allowance, *Probability in the Engineering and Informational Sciences*, 10, (March 1996) 41-56.
- [161] Cunningham, S. P. and J. G. Shanthikumar, Empirical Results on the Relationship Between Die Yield and Cycle Time in Semiconductor Wafer Fabrication, *IEEE Transactions on Semicon-*

*ductor Manufacturing*, 9, (May 1996) 273-277.

[162] Ott, T.J. and J.G. Shanthikumar, Discrete Storage Processes and Their Poisson Flow and Fluid Flow Approximations, *Queueing Systems: Theory and Application*, 24, (October 1996) 101-136.

[163] Glassey, C. R., J. G. Shanthikumar and S. Seshadri, Linear Control Rules for Production Control of Semiconductor Fabs, *IEEE Transaction on Semiconductor Manufacturing*, 9, (November 1996) 536-549.

[164] Seshadri, S. and J. G. Shanthikumar, Allocation of Chips to Wafers in a Production Problem of Semiconductor Kits, *Operations Research*, 45, (March/April 1997) 315-321.

[165] Shaked, M. and J. G. Shanthikumar, Supermodular Stochastic Orders and Positive Dependence of Random Vectors, *Journal of Multivariate Analysis*, 61, (April 1997) 86-101.

[166] Shanthikumar, J. G. and S. H. Xu, Asymptotically Optimal Routing and Service Rate Allocation in a Multi-Server Queueing System, *Operations Research*, 45, (May/June 1997) 464-469.

[167] Nakade, K., K. Ohno and J. G. Shanthikumar, Bounds and an Approximation for Cycle Times of a U-Shaped Production Line, *Operations Research Letters*, 21 (September 1997), 191-200.

[168] Nurani, R. K., S. Seshadri and J. G. Shanthikumar, Optimal Control of a Single Stage Production System Subject to Random Process Shift, *Operations Research*, 45 (September - October 1997), 713-724.

[169] Glassey, R., S. Seshadri and J. G. Shanthikumar, Using Information about Machine Failures to Control Flow Lines, *ZOR, Mathematical Methods of Operations Research*, 45 (December 1997), 455-481.

[170] Toyoizumi, H., J. G. Shanthikumar and R. Wolff, Two Extremal Auto-correlated Arrival Processes, *Probability in the Engineering and Informational Sciences*, 11 (December 1997), 441-450.

[171] Shaked, M. and J. G. Shanthikumar, Two Variability Orders, *Probability in the Engineering and Informational Sciences*, 12 (March 1998) 1 - 24.

[172] Toyoizumi, H., J. G. Shanthikumar and R. Wolff, Block Renewal Processes and their Application to Modeling, *Journal of the Operational Research Society of Japan*, 41 (March 1998), 53 - 67.

[173] Righter, R. and J. G. Shanthikumar, Multi-Class Production Systems with Setup Times, *Operations Research*, 46 (May-June 1998), S146 - S153.

[174] Brown, M. and J. G. Shanthikumar, Comparing the Variability of Random Variables and Point Processes, *Probability in the Engineering and Informational Sciences*, 12 (December 1998), 425-444.

[175] Righter, R. and J. G. Shanthikumar, Independently Expiring Mutiarmed Bandits, *Probability in the Engineering and Informational Sciences*, 12 (December 1998), 453-468.

[176] Chatterjee, A., D. Gudmundsson, R. Nurani, S. Seshadri and J. G. Shanthikumar, Fabless-Foundry Partnership: Models and Analysis of Coordination Issues, *IEEE Transactions on Semi-*

*conductor Manufacturing*, 12 (February 1999) 44-52.

[177] Meester, L.E. and J.G. Shanthikumar, Stochastic Convexity on General Space, *Mathematics of Operations Research*, 24 (May 1999) 472-494.

[178] Swaminathan, J. M. and J. G. Shanthikumar, Supplier Diversification: Effect of Discrete Demand, *Operations Research Letters*, 24 (June 1999) 213-221.

[179] Shanthikumar, J. G. and M. A. Zazanis, Inequalities Between Event and Time Averages, *Probability in the Engineering and Informational Sciences*, 13 (June 1999) 293-308.

[180] Celikbas, M., J. G. Shanthikumar and J. M. Swaminathan, Coordinating Production Quantities and Demand Forecasts Through Penalty Schemes, *IIE Transactions*, 31 (September 1999) 851-864.

[181] Nurani, R. K. and J. G. Shanthikumar, Process Control for Items Produced in Lots with Inter and Intra Lot Variations, *International Journal of Industrial Engineering*, 7 (March 2000).

[182] Ross, S. M. and J. G. Shanthikumar, Pricing Exotic Options: Monotonicity in Volatility and Efficient Simulations, *Probability in the Engineering and Informational Sciences*, 14 (June 2000) 317-326.

[183] Xia, C., J. G. Shanthikumar and P. W. Glynn, On the Asymptotic Optimality of the SPT Rule for the Flow Shop Average Completion Time Problem, *Operations Research*, 48 (July-August 2000) 615-622.

[184] Shanthikumar, J. G. and S. H. Xu, Strongly Asymptotically Optimal Design and Control of Production and Service Systems *IIE Transaction*, 32 (August 2000) 881-890.

[185] Sloan, T. W. and J. G. Shanthikumar, Combined Production and Maintenance Scheduling for Multiple-Product Single Machine Production System, *Production and Operations Management*, 9 (December 2000) 379-399.

[186] Segev, A., C. Beam and J. G. Shanthikumar, Optimal Design of Internet-Based Auctions, *Information Technology and Management*, 2 (April 2001), 121-163.

[187] Righter, R. and J.G. Shanthikumar, Optimal Ordering of Operations in a Manufacturing Chain, *Operations Research Letters*, 29, (2001), 115-121.

[188] Jang, W. and J.G. Shanthikumar, Stochastic Allocation of Inspection Capacity to Competitive Processes, *Naval Research Logistics*, 49, (January 2002), 78-94.

[189] Sloan, T. W. and J. G. Shanthikumar, Using In-line Equipment Condition and Yield Information for Maintenance Scheduling and Dispatching in Semiconductor Wafer Fabs *IIE Transaction*, 34 (June 2002) 191-209.

[190] Jang, W. and J. G. Shanthikumar, Sequential Process Control under Capacity Constraints, *European Journal of Operational Research*, 155 (2004) 695-714.

[191] Ross, A. W. and J. G. Shanthikumar, Estimating Effective Capacity in Erlang Loss Systems Under Competition, *Queueing Systems: Theory and Applications*, 47 (2005) 23-47.

[192] Liyanage, L. and J. G. Shanthikumar, A Practical Inventory Policy Using Operational Statistics, *OR Letters*, 33 (2005) 341-348.

- [193] Ross, S. M., J. G. Shanthikumar and Z. Zhu, On IFR Random Variables, *Journal of Applied Probability*, **42** (2005) 797-809.
- [194] Ahn, H-S, R. Righter and J. G. Shanthikumar, Staffing Decisions for Heterogenous Workers with Turnover, *Mathematical Methods in Operations Research*, **62** (2005) 499-514.
- [195] Ross, A. W. and J. G. Shanthikumar, Dial-Up Internet Access: A Two Provider Cost Model, *Queueing Systems: Theory and Applications*, **51** (2005) 5-27.
- [196] M. E. Mayorga, H. S. Ahn and J. G. Shanthikumar, Optimal Control of a Make-to-Stock System with Adjustable Production Rate, *Probability in the Engineering and Informational Sciences*, **20** (2006) 609-634.
- [197] Lim, A. E. B. and J. G. Shanthikumar, Relative Entropy, Exponential Utility and Robust Dynamic Pricing *Operations Research*, **55** (2007) 198-214.
- [198] Shanthikumar, J. G., S. Ding and M. T. Zhang, Queueing Theory for Semiconductor Manufacturing Systems: A Survey and Open Problems *IEEE Transaction on Automation Sciences and Engineering*, **4** (2007) 513-522.
- [199] Janakiraman, G., S. Seshadri and J. G. Shanthikumar, A Comparison of the Optimal Costs of Two Canonical Inventory Systems *Operations Research*, **55** (2007) 866-875.
- [200] Shanthikumar, J. G. and D. D. W. Yao, John A. Buzacott and His Pioneering Contributions to Manufacturing and Service Systems, *Production and Operations Management*, **16** (2007) 657-664.
- [201] Chu, L. Y., J. G. Shanthikumar and Z. J. M. Shen, Solving Operational Statistics via a Bayesian Analysis *Operations Research Letters*, **36** (2008) 110-116.
- [202] Righter, R., M. Shaked and J. G. Shanthikumar, Intrinsic Aging and Classes of Nonparametric Distributions, *Probability in the Engineering and Informational Sciences*, **23** (2009) 563-582.
- [203] Jain, A., A.E.B. Lim and J.G. Shanthikumar, On the optimality of threshold control in queues with model uncertainty, *Queueing Systems: Theory and Applications*, **65** (2010) 157-174.
- [204] Li, P., A.E.B. Lim and J.G. Shanthikumar, Optimal risk transfer for agents with germs, *Insurance: Mathematics and Economics*, **47** (2010) 1-12.
- [205] Lim, A. E. B. , J. G. Shanthikumar and Gah-Yi Vahn, Conditional Value-at-Risk in Portfolio Optimization: Coherent But Fragile, *Operations Research Letters*, **39** (2011) 163-171.
- [206] Lim, A. E. B. , J. G. Shanthikumar and T. Watwai, Robust Asset Allocation with Benchmarked Objectives, *Mathematical Finance*, **21** (2011) 643-679.
- [207] Ramamurthy, V., J. G. Shanthikumar and Z. J. M. Shen, Inventory Policy with Parametric Demand: Operational Statistics, Linear Correction and regression, *Production and Operations Management*, **21** (2012) 291-308.
- [208] Lim, A. E. B., J. G. Shanthikumar and G. Y. Vahn, Robust Portfolio Choice with Learning in the Framework of Regret: Single Period Case, *Management Science*, **58** (2012) 1732-1746.
- [209] Li, P., A.E.B. Lim and J.G. Shanthikumar. Decentralized Control of a Simple Stochastic Queueing System, *IEEE Transactions on automatic Control*, , **57** (2012) 2762-2777



- [210] Akhavan-Tabatabaei, R., Y. Fathi and J. G. Shanthikumar, A Markov Chain Framework for Approximation of Cycle Time in Semiconductor Manufacturing Toolsets, *IEEE Transactions on Semiconductor Manufacturing*, **25** (2012) 589-597.
- [211] Chen, Y. J., J. G. Shanthikumar and Z. J. M. Shen, Training, Production, and Channel Separation in ITC's e-Choupal Network, *Production and Operations Management*, **22** (2013) 348-364
- [212] Haskell, W. B., J. G. Shanthikumar and Z. J. M. Shen, Optimization with a Class of Multivariate Integral Stochastic Order Constraints, *Annals of Operations Research*, **206** (2013) 147-162.
- [213] Deng, T., M. Shen and J. G. Shanthikumar, Statistical Learning of Service-Dependent Demand in a Multiperiod Newsvendor Setting, *Operations Research*, **62** (2014) 1064-1076.
- [214] Marchak, T., J. G. Shanthikumar and J. Zhou, A Newsvendor Who Chooses Informational Effort, *Production and Operations Management*, **24** (2015) 110-133.
- [215] Shaked, M. and J. G. Shanthikumar, Multivariate Conditional Hazard Rate Functions - An Overview, *Applied Stochastic Models in Business and Industry*, **31** (2015) 285-296.
- [216] Chen, Y. J., J. G. Shanthikumar and Z. J. M. Shen, Incentive for Peer-to-Peer Knowledge Sharing among Farmers in Developing Economies *Production and Operations Research*, **24** (2015) 1430-1440.
- [217] Lu, M., J. G. Shanthikumar and M. Shen, Operational Statistics: Properties and the Risk-Averse Case, *Naval Research Logistics*, **62** (2015) 206-214.
- [218] Yalcindag, S., A. Matta, E. Sahin and J. G. Shanthikumar, The patient assignment problem in home health care: using a data-driven method to estimate the travel times of care givers, *Journal of Flexible Services and Manufacturing*, **28** (2016) 304-335.
- [219] Haskell, W. B., J. G. Shanthikumar and Z. J. M. Shen, Aspects of Optimization with Stochastic Dominance, *Annals of Operations Research*, (2016)
- [220] Kang, K., J. G. Shanthikumar and K. Altinkemer, Postponable Acceptance and Assignment: A Stochastic Dynamic Programming Approach, *Manufacturing & Service Operations Management*, **18** (2016) 493-508.
- [221] Haskell, W. B., J. G. Shanthikumar and Z. J. M. Shen, Primal-dual algorithms for optimization with stochastic dominance, *SIAM Journal on Optimization*, **27**, (2017) 34-66.
- [222] Marschak, T., J. G. Shanthikumar and J. Zhou, Does More Information-Gathering Effort Raise or Lower the Average Quantity Produced, *Journal of Mathematical Economics*, **69**, (2017) 104-117.
- [223] Berenguer, G., Q. Feng, J. G. Shanthikumar and L. Xue, The Effects of Subsidies on Increasing Consumption through For-Profit and Not-For-Profit Newsvendors, *Production and Operations Management*, **26**, (2017) 1191-1206.
- [224] Feng, Q. and J. G. Shanthikumar, Posted Pricing versus Bargaining in Sequential Selling Process, *Operations Research*, **66**(1) (2018) 92-103.
- [225] Feng, Q. and J. G. Shanthikumar, Supply and Demand Functions in Inventory Models, *Op-*

*erations Research*, **66**(2018) 77-91.

[226] Feng, Q. and J. G. Shanthikumar, Arrangement Increasing Resource Allocation, *Methodology and Computing in Applied Probability*, **20** (2018) 935-955

[227] Feng, Q., and J. George Shanthikumar, How Research in Production and Operations Management May Evolve in the Era of Big Data. *Production and Operations Management*, **27** (2018) 1670-1684

[228] Lin, Z., A. Matta and J. G. Shanthikumar, Combining Simulation experiment with Analytical Methods for System Performance Evaluation, *IIE Transactions*, **51** (2019) 266-283

[229] Feng, Q., Z. Jia, and J. G. Shanthikumar. Dynamic Multi-sourcing with Dependent Random Supply Capacities, *Management Science*, **65**(6) (2019) 2770-2786.

[230] Feng, Q., S. Luo, J. G. Shanthikumar. Integrating Dynamic Pricing with Inventory Decisions under Lost Sales. *Management Science*. **66**(5) (2020) 2232-2247.

[231] Feng, Q., Y. Li, J. G. Shanthikumar. Competitive revenue management with sequential bargaining. *Production and Operations Management*. **29**(5) (2020) 1307-1324.

#### **A1. Papers Accepted for Publication in Archival Journals**

[232] Feng, Q., Z. Ma, Z. Mao, J. G. Shanthikumar. Multi-stage supply chain with production uncertainty. Forthcoming in *Production and Operations Management*.

[233] Feng, Q., C. Li, M. Lu, J. G. Shanthikumar. Implementing environmental and social responsibility programs in supply networks through multi-unit bilateral negotiation. Forthcoming in *Management Science*.

#### **B. Conference Proceedings and Other Publications**

[1] Shanthikumar, J. G., Software Performance Prediction Using a State-Dependent Error Occurrence-Rate Model, *Proceedings of the 19th Annual Technical Symposium - Pathways to System Integrity*, (1980), 67-73.

[2] Shanthikumar, J. G. and O. Balci, A Variance Reduction Technique for the Simulation of a Single Server GI/G/1 Controlled Queue, *Proceedings of the Summer Computer Simulation Conference*, (1980), 105-110.

[3] Shanthikumar, J. G., Matching Detection and Correction Routines in Reliability Improvement, *Proceedings of the International Congress on Applied System Research and Cybernetics Conference*, (1980), 105-110.

[4] Shanthikumar, J. G., A Binomial Model for Software Performance Prediction, *Proceedings of the Eighteenth Annual Allerton Conference on Communication, Control, and Computing*, (1980), 524-533.

[5] Shanthikumar, J. G. and S. Tufekci, Optimal Software Release Time Using Generalized Decision Trees, *Proceedings of the Fourteenth Annual Hawaii International Conference on System Sciences*, (1981), 58-65.

[6] Shanthikumar, J. G., A Non-Homogeneous Markov Process Software Reliability Model, *Proceed-*

*ings of the Nineteenth Annual Spring Reliability Seminar*, (1981), 77-92.

[7] Shanthikumar, J. G., A State- and Time-Dependent Error Occurrence-Rate Software Reliability Model with Imperfect Debugging, *Proceedings of the National Computer Conference*, (1981), 311-315.

[8] Shanthikumar, J. G., Analysis of the Effects of Service Time Variability in a Dynamic Job Shop Using a Simulation Model, *Proceedings of the Summer Computer Simulation Conference*, (1981), 377-382.

[9] Shanthikumar, J. G., On the Buffer Behavior with Poisson Arrivals, Priority Service and Random Server Interruptions, *Proceedings of the International Conference on Communications*, (1981), 41.5.1-41.5.5.

[10] Shanthikumar, J. G. and R.G. Sargent, A Hybrid Simulation / Analytic Model of a Computerized Manufacturing System, *Proceedings of the International Federation of Operational Research Societies Conference*, (1981), 901-915.

[11] Shanthikumar, J. G., P.K. Varshney and K. Sriram, A Priority Cutoff Flow Control Scheme for Integrated Voice-Data Multiplexers, *Performance Evaluation Review*, 11, (Fall 1982), 8-14.

[12] Sriram, K., P. K. Varshney and J. G. Shanthikumar, Discrete-Time Analysis of Integrated Voice-Data Multiplexers With and Without Speech Activity Detectors, *Proceedings of the IEEE Global Telecommunication Conference*, (1982), B2.2.1-B.2.2.5.

[13] Tufekci, S. and J.G. Shanthikumar, Development of a Decision Support System to Assist in Software Release Time Decisions, *Proceedings of the Second Annual Phoenix Conference on Computers and Communications*, (1983), 350-354.

[14] Sriram, K., P.K. Varshney and J. G. Shanthikumar, Buffered Digital Speech Interpolation with Fixed Delay, *Proceedings of the IEEE International Conference on Communications*, (1983), D6.2.1-D6.2.5.

[15] Shanthikumar, J.G. and R.G. Sargent, A General Algorithmic Solution to Some Machine Interference Problems with Several Types of Failures, *Proceedings of the International Conference on Production Research*, (1983), 191-197.

[16] Shanthikumar, J.G., On Decomposition Approaches in Permutation Scheduling Problems, *Proceedings of the International Conference on Production Research*, (1983), 285-291.

[17] Shanthikumar, J.G., A Random Variate Generation Technique Useful in Hybrid Simulation/Analytic Modelling, *Proceedings of the Winter Simulation Conference*, (1984), 161-167.

[18] Sumita, U. and J.G. Shanthikumar, APL Software Development for Central Control Telephone Switching System Via the Row-Continuous Markov Chain Procedure, *Proceedings of the ITC Conference*, (1985).

[19] Yao, D.D. and J.G. Shanthikumar, Some Resource Allocation Problems in Multi-Cell Systems, *Proceedings of the Second ORSA/TIMS Special Interest Conference on Flexible Manufacturing Systems*, (1986), 245-255.

[20] Yao, D.D. and J.G. Shanthikumar, Optimal Periodic Run Quantities for a Set of Cells under Joint Setup, *Proceedings of the IEEE International Conference on Robotics and Automation*, (1987).

- [21] Shanthikumar, J.G. and U. Sumita, Performability of Production Systems and Lot Sizing Problems, *Proceedings of the Eleventh IFORS International Conference on Operations Research*, (1987), 292-303.
- [22] Yao, D.D. and J.G. Shanthikumar, A Closed Queueing Network of Counting Processes, *Proceedings of the 26th IEEE Conference on Decision and Control*, (1987), 675-676.
- [23] Shanthikumar, J.G. and D.D. Yao, General Queueing Networks: Representation and Stochastic Monotonicity, *Proceedings of the 26th IEEE Conference on Decision and Control*, (1987), 1084-1087.
- [24] Shanthikumar, J.G. and D.D. Yao, Stochastic Convexity and Its Applications in Parametric Optimization of Queueing Systems, *Proceedings of the 27th IEEE Conference on Decision and Control*, (1988), 657-662.
- [25] Chang, C. S., X. Chao, M. Pinedo and J. G. Shanthikumar, Stochastic Convexity for Multidimensional Processes, *Proceedings of the 29th IEEE Conference on Decision and Control*, (1990).
- [26] Buzacott, J.A., S.M. Price and J.G. Shanthikumar, The Performance of Kanban Controlled Serial Production Systems, *Proceedings of the Joint US / German Conference on new directions for Operations Research in Manufacturing*, (1992).
- [27] Nurani, R. K., R. Akella and J. G. Shanthikumar, Effects of Using Future Forecast Information on Myopic Policies, *Proceedings of the First Conference of the ORSA Technical Section on Manufacturing Management*, (1994), 1-6.
- [28] Patankar, A. K., A. Segev and J. G. Shanthikumar, A Directory Service for a Federation of CIM Databases with Migrating Objects, *Proceedings of the IEEE Conference on IEDM*, (1996).
- [29] Tomlinson, W., R. K. Nurani, M. Burns and J. G. Shanthikumar, Development of Cost Effective Sampling Strategy for In-Line Monitoring, *Proceedings of the 8th Annual SEMI / IEEE Advanced Semiconductor Manufacturing Conference and Workshop*, (1997), 8-12.
- [30] Seshadri, S, J. G. Shanthikumar, R. K. Nurani, and A. Chatterjee, Fabless-Foundary Partnerships: Research on Coordination Issues, *Proceedings of the 8th Annual SEMI / IEEE Advanced Semiconductor Manufacturing Conference and Workshop*, (1997), 386-390.
- [31] Jang, W. and J. G. Shanthikumar, Allocation and Control of Inspection Capacity for Multiple Processes: Disaggregate Approach, *Proceedings of the 1998 Manufacturing and Service Operations Management Conference* (1998) 36-41.
- [32] Nasongkhla, R., J. G. Shanthikumar, R. Nurnai and M. McIntyre, How to Simultaneously Reduce  $\alpha$  and  $\beta$  Errors with SPC: A Multivariate Process Control Approach, *Proceedings of the 9-th Annual SEMI / IEEE Advanced Semiconductor Manufacturing Conference and Workshop*, (1998) 253-256.
- [33] Nasongkhla, R., J. G. Shanthikumar, R. Nurnai and M. McIntyre, Multivariate Control Approach: A Means to Reducing  $\alpha$  and  $\beta$  Errors in In-Line Detection of Yield Excursions, *Proceedings of the Seventh International Symposium on Semiconductor Manufacturing*, (1998)
- [34] Shanthikumar, J. G. and S. H. Xu, Strongly Asymptotic Optimality of Focused Factory, *Second Aegean International Conference on "Analysis and Modeling of Manufacturing Systems,"* (1999) 37-47.

- [35] Jang, W. and J. G. Shanthikumar, Markovian Quality Control for Capacity Constrained Processes, *Proceedings of the 8-th Annual Industrial Engineering Research Conference* (1999) (6 pages on CDROM).
- [36] Nurani, R., M. Stoller, D. Gudmundsson and J. G. Shanthikumar, Evaluating Inspection Strategies Using Advanced Statistical Methods, *Yield Management Solutions*, 1, (Spring 1999) 12-14.
- [37] Williams, R., D. Gudmundsson, Nurani, R., M. Stoller, A. Chatterjee, S. Seshadri and J. G. Shanthikumar, Challenging the Paradigm of Monitor Reduction to Achieve Lower Product Costs, *Proceedings of the 10-th Annual SEMI / IEEE Advanced Semiconductor Manufacturing Conference and Workshop*, (1999), 420-425.
- [38] Tomlinson, W., V. Samek, B. Shifler, D. Gudmundsson, J. Merritt, R. Nurani and J. G. Shanthikumar, Cost Effective Reticle Quality Management Strategies in Wafer Fabs, *Proceedings of the 10-th Annual SEMI / IEEE Advanced Semiconductor Manufacturing Conference and Workshop*, (1999), 254-258.
- [39] Elliot, R., R. Nurani, D. Gudmundsson, M. Preil, R. Nasongkhla and J. G. Shanthikumar, Critical Dimension Sample Planning for Sub 0.25 Micron Processes, *Proceedings of the 10-th Annual SEMI / IEEE Advanced Semiconductor Manufacturing Conference and Workshop*, September 8-10, (1999), 139-142.
- [40] Williams, R. , D. Gudmundsson, K. Monahan, R. Nurani, M. Stoller, and J. G. Shanthikumar, Optimized Sample Planning for Wafer Defect Inspection , *Proceedings of the Eighth IEEE International Symposium on Semiconductor Manufacturing*, Santa Clara, October 11-13 (1999), 43-46.
- [41] Nurani, R., D. Gudmundsson, M. Stoller and J. G. Shanthikumar, Intelligent Sampling Strategies for Combined Optical/E-Beam Inspection, *Yield Management Solutions*, 2, (Spring 2000) 28-30.
- [42] Elliot, R., R. Nurani, D. Gudmundsson, M. Preil, R. Nasongkhla and J. G. Shanthikumar, Sampling Plan Optimization for Detection of Lithography and Etch CD Process Excursions, *Proceedings of SPIE Microlithography Conference*, Vol. 3998 (2000), 527-536.
- [43] Chen, X., M. Y. Hung, K. Kuo, S. Fu, J. G. Shanthikumar, Z. Mao, S. Deng, V. Hazari, K. Monahan, M. Slessor, and A. Lev, Overlay Excursion Management through Sample Plan Optimization and Cycle Time Reduction, *Proceedings of the SPIE Microlithography Conference*, Santa Clara, Vol. 5038, February 23 - 27 (2003)
- [44] Hung, M. Y., X. Chen, K. Kuo, S. Fu, V. Hazari, K. Monahan, M. Slessor, A. Lev, J. G. Shanthikumar, Z. Mao and S. Deng, The More and Less of Effective Overlay Control, *Yield Management Solutions*, 5, (Summer 2003) 59-64.
- [45] Liyanage L., J. G. Shanthikumar and C. Fonseka, Service Quality Improvements in Hospitals: Operational Statistics and IT Solutions, *Innovations through Information Technology* (2004) 787-790
- [46] Hung, M. Y., X. Chen and J. G. Shanthikumar, The More and Less of Effective Overlay Control, *Semiconductor Fabtech*, 21, (2004) 88-92.

- [47] Liyanage L., C. Fonseka, S. Broomhall, N. Nicolopoulos and J. G. Shanthikumar, Optimising Service Quality of NSW Fire Brigades and Campbelltown Hospital Emergency Service Facility using Operational Statistics, *Visions of Futuristic Methodologies* (2004) 197-214.
- [48] Liyanage L., J. G. Shanthikumar and C. Fonseka, Operational Statistics and IT Solutions: Adding to Enterprise Resource Planning (ERP) Systems, *Visions of Futuristic Methodologies* (2004) 277-286.
- [49] Ding, S., R. Akhavan-Tabatabaei and J. G. Shanthikumar, Stochastic Modeling for Serial-Batching Workstations with Heterogeneous Machines, *Proceedings of the 3rd Annual IEEE Conference on Automation Science and Engineering*, Phoenix, AZ, September 22-25, (2007) 77-81.
- [50] Koizumi, S. R. L. Righter, J. G. Shanthikumar and Z. J. M. Shen, OaaS: Organization as a service — Gradient resource structure based on shared service ability, *Proceeding of the 2009 IEEE International Conference on Service-Oriented Computing and Applications (SOCA)*, January 14-15, Taipei, Taiwan, 1-7 (2009)
- [51] Akhavan-Tabatabaei, R., S. Ding and J. G. Shanthikumar, A Method For Cycle Time Estimation of Semiconductor Manufacturing Toolsets with Correlations, *Proceedings of the 2009 Winter Simulation Conference*, Austin, TX, December 13-16, (2009) 1719-1729
- [52] Akhavan-Tabatabaei, R., J. J. Ucros and J. G. Shanthikumar, Application of Erlang distribution in cycle time estimation of toolsets with wip-dependent arrival and service in a single product-type single failure-type environment, *Proceedings of the 2010 Winter Simulation Conference (WSC)*, Baltimore, MD., Decmber 5-8, 2531-2540 (2010)
- [53] Li, P., A. E. B. Lim and J. G. Shanthikumar, Decentralized Control of a Stochastic Dynamic Resource Allocation Problem, *Proceedings of the 49th IEEE Conference on Decision and Control*, Atlanta, GA, December 15-17, (2010)
- [54] Lim, A. E. B., J. G. Shanthikumar and T. Watwai, Robust Intensity Control of Stochastic Discrete Event Systems with Multiple Levels of Model Uncertainty and the Dual Risk-Sensitive Problem, *Proceedings of the 49th IEEE Conference on Decision and Control*, Atlanta, GA, December 15-17, (2010)
- [55] Yalcindag, S., A. Matta, E. Sahin and J. G. Shanthikumar, A Two-Stage Approach for Solving Assignment and Routing Problems in Home Health Care Services, Chapter 4, *Proceedings of the International Conference on Health Care Systems Engineering*, edited by Andrea Matta, Jingshan Li, Evren Sahin, Ettore Lanzarone, John Fowler, Springer 47-60, (2014)
- [56] Matta, A., N. Li, Z. Lin and J. G. Shanthikumar, Operational learning of approximate analytical methods for performance evaluation of manufacturing systems, *10th Conference on Stochastic Models of Manufacturing and Service Operations*, Volos, Greece, June 1-6, 137-144, (2015)
- [57] Frigerio, N., J. G. Shanthikumar and A. Matta, Dynamic Programming for Energy Control of Machine Tools in Manufacturing, *Proceedings of the 2015 IEEE International Conference on Automation Science and Engineering (CASE)*, Gothenburg, Sweden, August 24-28, 39-44 (2015)

## II BOOKS, EDITED WORKS, CHAPTERS AND ENTRIES IN BOOKS AND EN-

## CYLOPEDIAS

### A. Books

- [1] Buzacott, J.A. and J.G. Shanthikumar, *Stochastic Models of Manufacturing Systems*, Prentice Hall, Englewood Cliffs, N.J. (1993).
- [2] Shaked, M. and J. G. Shanthikumar, *Stochastic Orders and Their Applications*, Academic Press, New York, N.Y. (1994).
- [3] Shaked, M. and J. G. Shanthikumar, *Stochastic Orders*, Springer, New York, N.Y. (2006).

### B. Edited Works

- [1] Buzacott, J.A. and J.G. Shanthikumar, *Queueing Models of Manufacturing Systems*, special issue of *Queueing Systems: Theory and Applications*, 12, (1992).
- [2] Shanthikumar, J. G. and U. Sumita, *Applied Probability and Stochastic Processes*, Kluwer Academic Publishers, Boston, MA. (1999).
- [3] Chao, X., M. Pinedo and J. G. Shanthikumar, *Probabilistic Models for Design, Planning and Control of Production and Service Systems*, special issue of *IIE Transactions on Operations Engineering*, 32, (2000).
- [4] Fromm, H., G. Feigin and J. G. Shanthikumar, *Modeling and Analysis of Manufacturing Systems*, special issue of *Performance Evaluation*, (2000).
- [5] Shanthikumar, J. G., D. D. Yao and W. H. M. Zijm, *Stochastic Modeling and Optimization of Manufacturing Systems and Supply chains*, Kluwer Academic Publishers, Boston, MA (2003).
- [6] Zhang, M. T., J. Fowler, T. W. Y. Chen, J. G. Shanthikumar and C-F. Chien,, *eManufacturing in the Semiconductor Industry*, special issue of *IEEE Transaction on Automation Science and Engineering*, (2007).
- [7] Berenguer, G., P. Keskinocak, J. G. Shanthikumar, J. Swaminathan and Luk N. Van Wassenhove, *Not-for-Profit Operations Management*, special issue of *Production and Operations Management*, (2017).
- [8] Singhal, K., Q. Feng, R. Ganeshan, N. R. Sanders and J. G. Shanthikumar, *Perspectives on Big Data*, special issue of *Production and Operations Management*, (2018).
- [9] Balakrishnan, N., H. Li, M. Scarsini and J. G. Shanthikumar, *Special Issue in Memory of Moshe Shaked*, special issue of *Methodology and Computing in Applied Probability* (2018)
- [10] Shanthikumar, J. G. and D. D. W. Yao, *Frontier Analytic Modeling and Methods for Operations Management*, special issue of *Production and Operations Management*, (target 2019).
- [11] Giesecke, K., G. Liberali, H. Nazerzadeh, J. G. Shanthikumar and C. P. Teo, *Data-Driven Prescriptive Analytics*, special issue of *Management Science*, (2020).
- [11] Weihua Liu, Paul Tae-Woo Lee, Xiang Li, Li Zhou, J. G. Shanthikumar. *Smart supply chains and intelligent logistics services*, special issue of *Transportation Research, Part E*

### C. Chapters and Entries in Books and Encyclopedias

- [1] Shaked, M. and J.G. Shanthikumar, Phase Type Distributions, in *Encyclopedia of Statistical Sciences*, 6, John Wiley and Sons, New York, (editors S. Kotz and N.L. Johnson), (1985), 709-715.
- [2] Shaked, M. and J.G. Shanthikumar, IFRA Processes, in *Reliability and Quality Control*, North Holland Publishers, New York (editor A.P. Basu), (1986), 345-352.
- [3] Shanthikumar, J.G. and D.D. Yao, Monotonicity and Concavity Properties in Cyclic Queueing Networks with Finite Buffers, in *Queueing Networks with Blocking*, Elsevier Science Publishers, North-Holland, New York (editors H.G. Perros and T. Altiok), (1989), 325-344.
- [4] Hochbaum, D. S. and J. G. Shanthikumar, The Complexity of Nonlinear Separable Optimization, *Lecture Notes in Computer Science*, 372, Springer Verlag, New York (1989), 461-472.
- [5] Shaked, M. and J.G. Shanthikumar, Dynamic Construction and Simulation of Random Vectors, in *Topics in Statistical Dependence*, Institute of Mathematical Statistics Lecture Notes / Monograph Series, 16, (editors H.W. Block, A.R. Sampson and T.H. Savits), (1990), 415-433.
- [6] Shaked, M. and J.G. Shanthikumar, Reliability and Maintainability, Chapter 13 in *Handbook of Operations Research and Management Science*, North Holland Pub., New York, (editors D. Heymann and M. Sobel), (1990), 653-713.
- [7] Shaked, M. and J.G. Shanthikumar, Regular, Sample Path and Strong Stochastic Convexity: A Review, in *Stochastic Orders and Decision Under Risk*, Institute of the Mathematical Statistics Lecture Notes / Monograph Series, 19, (editors K. Mosler and M. Scarcini) (1991), 320-333.
- [8] Buzacott, J. A. and J.G. Shanthikumar, Models of Production Systems, Chapter 74 in *Handbook of Industrial Engineering*, John Wiley and Sons, New York, (2nd edition, editor G. Salvendy), (1992), 1989-2024.
- [9] Buzacott, J.A., S.M. Price and J.G. Shanthikumar, Service Level in Multistage MRP and Base Stock Controlled Production Systems, *New Directions for Operations Research in Manufacturing*, Springer, Berlin, (editors G. Fandel, T. Gullledge and A. Jones), (1992), 445-463.
- [10] Liyanage, L. and J.G. Shanthikumar, Second Order Properties of Single Stage Queueing Systems, in *Queueing and Related Models*, Oxford University Press, (editors U. Bhat and I. V. Basawa), (1992) 129-160.
- [11] Liyanage, L. and J.G. Shanthikumar, Allocation Through Stochastic Schur Convexity and Stochastic Transposition Increasingness, in *Stochastic Inequalities*, Institute of Mathematical Statistics Lecture Notes / Monograph Series, 22 (editors M. Shaked and Y. L. Tong), (1992), 253-273.
- [12] Shaked, M. and J.G. Shanthikumar, Multivariate Conditional Hazard Rate and Mean Residual Life Functions and Their Applications, in *Reliability and Decision Making*, (editors: R. B. Barlow, C. A. Clarotti and F. Spizzichino), Chapman and Hall, New York, NY. (1993), 137-156.
- [13] Shanthikumar, J.G. and D.D. Yao, Stochastic Comparisons in Closed Queueing Networks, in *Stochastic Orders and Their Applications*, Academic Press, San Diego, CA (editors: M. Shaked and J. G. Shanthikumar), (1994), 433-460.
- [14] Chang, C. S., J. G. Shanthikumar and D. D. Yao, Stochastic Convexity and Stochastic Majorization, in *Stochastic Modeling and Analysis of Manufacturing Systems*, Springer-Verlag, New



York, NY (editor: D. D. Yao), (1994), 189-231.

[15] Buzacott, J. A., J. G. Shanthikumar and D. D. Yao, Jackson Network Models of Manufacturing Systems, in *Stochastic Modeling and Analysis of Manufacturing Systems*, Springer-Verlag, New York, NY (editor: D. D. Yao), (1994), 1-45.

[16] Buzacott, J. A. and J. G. Shanthikumar, Stochastic Models for Production Control, in *Optimization Models and Concepts in Production Management*, Gordon and Breach Publishers, (editors: P. Brandimarte and A. Villa), (1995) 213-255.

[17] Shanthikumar, J. G. Applications in Queueing Theory, in *The Exponential Distribution: Theory, Methods and Applications*, Gordon and Breach Publishers, (editors: N. Balakrishana and A. P. Basu) (1995) 509-523.

[18] Shaked, M., J. G. Shanthikumar and J. B. Valdez-Torres, Dynamic Modelling of Reliability Systems, in *Reliability and Maintenance of Complex Systems*, Springer, Berlin, NATO ASI Series, Series F: Computer and System Sciences, 154 (editor: S. Ozekici) (1996) 83-96.

[19] Boland, P. J., M. Shaked and J. G. Shanthikumar, Stochastic Ordering of Order Statistics, in *Handbook of Statistics, 16*, North Holland Publishers, Amsterdam (editors: N. Balakrishnan and C. R. Rao) (1998) 89-103.

[20] Ott, T. J. and J. G. Shanthikumar, Random Matrices and the Number of  $\{0,1\}$  Matrices with Given Row and Column Sums, Chapter 12, *Advances in Applied Probability and Stochastic Processes*, Kluwer Academic Publishers, Boston (editors: J. G. Shanthikumar and U. Sumita) (1999) 173-189.

[21] Pinedo, M., S. Seshadri and J. G. Shanthikumar, Call Centers in Financial Services: Strategies, Technologies and Operations, Chapter 18 in *Creating Value in Financial Services - Strategies, Operations and Technologies* Kluwer Academic Publishers, Boston, MA (editors: Melnick, E., M. Pinedo, P. Nayyar and S. Seshadri) (1999) 357-388.

[22] Buzacott, J. A. and J.G. Shanthikumar, Queueing Models of Manufacturing and Service Systems, Chapter 60 in *Handbook of Industrial Engineering*, John Wiley and Sons, New York, (3rd edition, editor G. Salvendy), (2001), 1627-1668.

[23] Boland, P. J., T. Hu, M. Shaked and J. G. Shanthikumar, Stochastic Ordering of Order Statistics II, in *Modeling Uncertainty: An Examination of Stochastic Theory, Methods and Applications*, Kluwer Academic Publishers, Boston, MA (editors: M. Dror, P. L'Ecuyer and F. Szidarovsky) (2002)

[24] Xia, C. H. and J. G. Shanthikumar, Asymptotic Optimal Control of Multi Class G/G/1 Queues with Feedback, Chapter 6, *Stochastic Modeling and Optimization of Manufacturing Systems and Supply chains*, Kluwer Academic Publishers, Boston, MA (editors Shanthikumar, J. G., D. D. Yao and W. H. M. Zijm), (2003) 127-142.

[25] Lim, A., J. G. Shanthikumar and Z. J. M. Shen, Model Uncertainty, Robust Optimization and Learning, *Inform's Tutorial 2006*, (2006) 66-94.

[26] Feng, Q. and J. G. Shanthikumar. Not-for-Profit Operations Management. *Routledge Companion for Production and Operations Management*, (2016) edited by Sushil Gupta and Martin

### III. NON-REFEREED PUBLICATIONS

#### A. Technical Reports, Working Papers and Projects

- [1] Shanthikumar, J.G., Interactive Graphics and Computer Aided Design, Department of Industrial Engineering, University of Toronto, Toronto (1975).
- [2] Shanthikumar, J.G., A Review of Flow Shop Scheduling Problems, Department of Industrial Engineering, University of Toronto, Toronto (1976).
- [3] Shanthikumar, J.G., Review of Related Papers in Queueing Output Processes, Department of Industrial Engineering, University of Toronto, Toronto (1977).
- [4] Shanthikumar, J.G., Automatic Transfer Lines: A Review and Critical Evaluation of Some Recent Papers, Department of Industrial Engineering, University of Toronto, Toronto (1977).
- [5] Shanthikumar, J.G., Decomposition Approaches in Permutation Scheduling Problems, M.A.Sc. Thesis, Department of Industrial Engineering, University of Toronto, Toronto (1977).
- [6] Shanthikumar, J.G., A Single Server Queue with State-Dependent Arrival Process, Department of Industrial Engineering, University of Toronto, Ontario (1978).
- [7] Shanthikumar, J.G., Approximate Queueing Models of Dynamic Job Shops," Ph.D. Dissertation, Department of Industrial Engineering, University of Toronto, Toronto (1979).
- [8] Shanthikumar, J.G. and J.A. Buzacott, The Conditional Waiting Time in an M/G/1 Queue with Shortest Processing Time Discipline, Working Paper #79-004, Department of Industrial Engineering, University of Toronto, Ontario (1979).
- [9] Shanthikumar, J.G., Some Properties of the Alternating Regenerative Processes, Working Paper #79-018, Department of Industrial Engineering, University of Toronto, Ontario (1979).
- [10] Shanthikumar, J.G., Efficient Algorithms for Special Structure M-machine Flow Shop Scheduling Problems, Department of Industrial Engineering and Operations Research, Syracuse University, New York (1982).
- [11] Jafari, M.A. and J.G. Shanthikumar, Exact and Approximate Solutions to Three-Stage Automatic Transfer Lines with Operations Dependent Failures and Possible Scrapping of Units, Working Paper #83-021, Systems and Industrial Engineering, University of Arizona, Tucson (1983).
- [12] Baldwin, D.G. and J.G. Shanthikumar, A Bulk Arrival Model for Police Patrol System, Working Paper #84-005, Systems and Industrial Engineering, University of Arizona, Tucson (1984).
- [13] Shanthikumar, J.G., On the Optimality of Smith's Schedule for Some Special Classes of Single Machine Scheduling Problems, Working Paper #84-012, Systems and Industrial Engineering, University of Arizona, Tucson (1984).
- [14] Jafari, M.A. and J.G. Shanthikumar, Simple Algorithms for Spatially Homogeneous Quasi-Birth-and-Death Processes with Two Boundaries, Working Paper #85-001, Department of Industrial Engineering and Operations Research, Syracuse University, New York (1985).

- [15] Yao, D.D. and J.G. Shanthikumar, Exact Analysis of Ordered-Entry Systems, Management Science Working Paper No. MS-26, University of California, Berkeley, CA (1985).
- [16] Hwang, S.S. and J.G. Shanthikumar, An FMS Production Planning System and Evaluation of Part Selection Approaches, Management Science Working Paper No. MS-43, University of California at Berkeley, CA (1987).
- [17] Sumita, U., M. Rieders and J.G. Shanthikumar, Rank Reduction Technique for the Use of the Matrix Laguerre Transform, Technical Report, Haas School of Business, University of California at Berkeley, CA (1988).
- [18] Buzacott, J.A. and J.G. Shanthikumar, Stochastic Models of Single Stage MRP Controlled Production Systems, Technical Report, Haas School of Business, University of California, Berkeley, CA (1989).
- [19] Srinivasan, A., S. Seshadri and J.G. Shanthikumar, Stochastic Cycle Time Optimization of Sequential Systems, UCB/ERL M90/91, Department of Electrical Engineering, University of California, Berkeley (1990).
- [20] Glassey, C. R., S. Seshadri and J. G. Shanthikumar, Production Control of Flowlines: Characterization of Optimal Policies, Report #93-16, Engineering Systems Research Center, University of California, Berkeley (1993).
- [21] Machihara, F. and J. G. Shanthikumar, Properties of Generalized Poisson Processes with Applications to Overflow Queues (1994).
- [22] Miyazawa, M. and J.G. Shanthikumar, Poisson Process is Better than Geometric Branching Poisson Process (1995).
- [23] Shanthikumar, J. G., Stochastic Comparison of Waiting Times Using a Version of Little's Law (1995).
- [24] Nurani, R. K., R. Akella and J. G. Shanthikumar, Optimal Monitoring and Control of Deteriorating Processes under Two Repair Options (1996)
- [25] Yoon, B. S. and J. G. Shanthikumar, QN-GPH Method for Sojourn Time Distributions in General Queueing Networks (1996).
- [26] Xia, C., J. G. Shanthikumar and R. Akella, Optimal Inspection Scheduling for Process Control of a Single Workstation (1997).
- [27] Takezawa, N. and J. G. Shanthikumar, Optimal Control on Service for a Single Server Single Queue, (2002).
- [28] Takezawa, N. and J. G. Shanthikumar, Optimal Control on Service for a Single Server Multiclass Queue, (2002).
- [29] Lim, A. E. B., J. G. Shanthikumar and T. Watwai, A Balance Between Optimism and Pessimism in Robust Portfolio Choice Problems through Certainty Equivalent Ratio (2005).
- [30] Lim, A. E. B., J. G. Shanthikumar and T. Watwai, Robust Multi-Product Revenue Management (2006).
- [31] Akhavan-Tabatabaei, R., S. Ding and J. G. Shanthikumar, A Method for Cycle Time Estima-

tion of Semiconductor Manufacturing Toolsets with WIP-Dependent Arrival and Service Processes (2009)

[32] Jain, A., A. E. B. Lim, J. G. Shanthikumar and L. Yu, Objective Operational Statistics with Application to Newsvendor Problem (2010)

[33] Azadivar, J., J. G. Shanthikumar and Z. J. M. Shen, Dynamic Inventory Control with Satisfaction-Dependent Demand (2010)

[34] Chu, L. Y., J. G. Shanthikumar and Z. J. M. Shen, Pricing and Revenue Management with Operational Statistics (2010)

[35] Haskell, W. B., J. G. Shanthikumar and Z. J. M. Shen, Working Capital Constraints in Stochastic Inventory Control (2011)

[36] Ramamurty, V., J. G. Shanthikumar and M. Shen, An Objective Operational Learning Approach for Call Center Staffing (2012)

[37] Wang, C, J. G. Shanthikumar and L. Zheng, The impact of Human Resource Indicators on Manufacturing System with Workforce Turnover (2014)

[38] Haskell, W. B., J. G. Shanthikumar and Z. J. M. Shen, Learning with Stochastic Dominance Constraint (2014)

## B. Papers Submitted for Publication

[1] Q. Feng, C. Li, M. Lu, J. G. Shanthikumar. Dynamic substitution for selling multiple products under supply and demand uncertainties. Under 2nd round review at *Production and Operations Management*.

[2] Q. Feng, Y. Li, J.G. Shanthikumar. Negotiations in Competitive Supply Chains: The Kalai-Smorodinsky Bargaining Solution. 2nd round review with *Management Science*.

[3] Q. Feng, J. G. Shanthikumar. Applications of Stochastic Orders and Stochastic Functions in Inventory and Pricing Problems. Under 1st round revision for *Production and Operations Management*.

[4] T. Fan, Q. Feng, Y. Li, J. G. Shanthikumar. Y. Wu. Subsidy Design for Producers in a Fragmented Market. Under 1st round review at *Management Science*.

[5] Q. Feng, J. G. Shanthikumar. M. Xue. The Consumer Choice Model and Estimation: A Review and Extension. Under 1st round review at *Production and Operations Management*.

[6] Richter, A., Z. J. M. Shen and J. G. Shanthikumar. Dynamic Facility Location and the Value of Inventory Mobility in Disaster Relief, 2nd Round Revision with *Production and Operations Management*.