

# Xiaoyue JIANG

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## Education History

Ph.D., Industrial Engineering

Department of Mechanical and Industrial Engineering, **University of Toronto**  
Dissertation topic: Modeling and optimization for maintenance systems

Master of Engineering, Communications Engineering

Department of Electrical and Computer Engineering, **University of Toronto**  
Degree project topic: Performance analysis with network calculus approach

Master of Science, Operations Research

Institute of Applied Mathematics, **Chinese Academy of Sciences**  
Thesis topic: Optimal policies for repairable systems

Bachelor of Science, Economic Mathematics

Department of Economic Information Management, **Renmin University of China**

## Work History

8/2008 – Present Visiting Assistant Professor, Freeman School of Business  
**Tulane University, New Orleans, Louisiana**

8/2002 – 7/2008 Assistant Professor

Department of Construction Management and Industrial Engineering  
**Louisiana State University, Baton Rouge, Louisiana**

1/2002 – 7/2002 Postdoctoral fellow, School of Mathematics and Statistics

**Carleton University, Ottawa, Canada**

6/2000 – 7/2001 Capacity/Performance Engineer

**Nortel Networks, Ottawa, Canada**

3/1996 – 5/2000 Research Assistant

Department of Mechanical and Industrial Engineering  
**University of Toronto, Toronto, Canada**

9/1992 – 2/1996 Research staff member (3/1995-2/1996) and secretary of ORSC  
(Operations Research Society of China), reporting to Secretary General of  
ORSC, Department of Operations Research, Institute of Applied Mathematics  
**Chinese Academy of Sciences, Beijing, China**

6/1990 – 8/1992 System Engineer

Department of Information System Development  
**Economic Research and Information Center of Hunan Provincial  
Government, Changsha, China**

## Publications

### Journal Publications

1. Sachin, X, McAllister, C.D., Rinks, D., and Jiang, X. (2009). Implication of Risk Adjusted Discount Rates on Cycle Stock and Safety Stock in a Multi-period Inventory Model. *International Journal of Production Economics* (Accepted).
2. Jiang, X. (2008). New Perspectives in Network Calculus. *ACM SIGMETRICS Performance Evaluation Review* **36** (2), pp 95-97.
3. Lugtigheid, D., Jiang, X., and Jardine, A.K.S., (2008). A finite horizon model for repairable systems with repair restrictions. *Journal of the Operational Research Society* **59**, pp 1321-1331.
4. McAllister, C., Jiang, X., and Aghazadeh, F., (2008). Analysis of engineering discipline grade trends. *Assessment & Evaluation in Higher Education* **33**, pp 167-178.
5. Jiang, X., Du, D., and Ray, T., (2007). On optimality of one-bug-look-ahead policies for a software testing model. *Naval Research Logistics* **54**, pp 346-355.
6. Lugtigheid, D., Jardine, A.K.S. and Jiang, X., (2007). Optimizing the performance of a repairable system under a maintenance and repair contract. *Quality and Reliability Engineering International* **23**, pp 943-960.
7. Bose, A., Jiang, X., Liu, B. and Li, G., (2006). Analysis of manufacturing blocking systems with network calculus, *Performance Evaluation* **63**, pp 1216-1234.
8. Jiang X., Jardine, A.K.S., and Lugtigheid, D., (2006). On the conjecture of optimal repair-replacement strategies for a warranted product. *Mathematical and Computer Modelling* **44**, pp 963-972.
9. Li, G., Cheng, K., and Jiang, X., (2006). Negative ageing property of random sum. *Statistics and Probability Letters* **76**, pp 737-742.
10. Du, D., Jiang, X., and Zhang, G., (2005). Optimal preemptive online scheduling to minimize  $l_p$  norm on two processors. *Journal of Industrial and Management Optimization* **1**, pp 345-351.
11. Makis, V., and Jiang, X., (2003). A CBM framework based on hidden Markov models. *Mathematics of Operations Research* **28**, pp 383-394.
12. Jiang, X., Makis, V., and Jardine, A.K.S., (2001). Optimal repair/ replacement policy for a general repair model. *Advances in Applied Probability*, **33**, pp 206-222.
13. Makis, V., Jiang, X., and Cheng, K., (2000). Optimal preventive replacement under minimal repair and random repair cost. *Mathematics of Operations Research*, **25**, pp 141 – 156.
14. Jiang, X., Cheng, K., and Makis, V., (1998). On the optimality of repair-cost-limit policy. *Journal of Applied Probability* **35**, pp 936-949.
15. Makis, V., Jiang, X., and Jardine, A.K.S., (1998). A condition-based maintenance model, *IMA Journal of Mathematics Applied in Business and Industry* **9**, pp 201-210.
16. Jiang, X., Cheng, K., and Jiang, R., (1995). Optimal time-dependent repair cost limit maintenance policies, *Journal of Hunan University* **4**, pp 9-14.
17. Jiang, R., Jiang, X., and Tian, Y., (1995). Combination of event tree analysis and fault tree analysis for system reliability. *Journal of Hunan University* **1**, pp 103-108.

### **Book Contributions**

1. Makis, V., Jiang, X., and Tse, C., (2000). A general EMQ model with machine breakdowns and two types of failure. *Maintenance, Modeling and Optimization*. (Eds.) Ben-Daya, M., Duffuaa, S.O., and Raouf, A., Kluwer Academic Publishers, pp 377-396.
2. Makis V., Jiang, X., and Jardine, A.K.S., (2000) A general framework for analyzing maintenance policies. *Maintenance, Modeling and Optimization*. (Eds.) Ben-Daya, M., Duffuaa, S.O., and Raouf, A., Kluwer Academic Publishers, pp 185-200.

### **Conference Proceedings and Presentations**

1. Jiang, X. and Wang, H., (2008) Unification of Maintenance Modeling and Optimization. INFORMS Annual Meeting (Posted Session), Seattle, October 2008.
2. Jiang, X. (2008). New Perspectives in Network Calculus. MAMA Workshop on SYGMETRICS 2008, Annapolis, June 2008.
3. Jiang, X. (2008). Network Calculus under the Legendre Transform. Poster Session, 8<sup>th</sup> Stochastic Network Conference, Paris, France, June 2008.
4. Shuai, T., Du, D., and Jiang, X., (2008). An Optimal On-Line Algorithm for Preemptive Scheduling on Two Uniform Machines in the  $l_p$  Norm. Algorithmic Aspects in Information and Management, 4th International Conference, AAIM 2008, Shanghai, China, June 23-25, 2008. Proceedings. *Lecture Notes in Computer Science 5034 Springer*. (Eds.) Fleischer, R., Xu, J., Springer, pp 316-327.
5. Jiang, X., Du, D., Ray, T.G., and Ghazavi, S.N., Software release optimization for a non-Kalman filter SGRM, *IEEE International Conference on Industrial Engineering and Engineering Management 2007 (IEEM 2007)*, Singapore, December 2007. The paper has won an Outstanding Paper Award.
6. Jiang, X., Du, D., and Ray, T., (2007). On optimality of one-bug-look-ahead policies for a software testing model. *INFORMS 2007 Annual Meeting*, Seattle, November 2007, featured jointly by *Naval Research Logistic* and INFORMS Quality, Statistics and Reliability Subdivision.
7. Jiang, X., On stochastic network calculus, *14<sup>th</sup> INFORMS Applied Probability Society Conference*, Eindhoven, the Netherlands, July 2007.
8. Jiang, X., On optimality of one-bug-look-ahead policies for a software testing model, *Risk Symposium 2006*, Santa Fe, March 2006.
9. Jiang, X., Optimal strategies for a dynamic software testing model with release and crash options, *13<sup>th</sup> INFORMS Applied Probability Society Conference*, Ottawa, Canada, July 2005.
10. Jiang, X., A dynamic software testing model with release and crash options, *INFORMS Annual Meeting* Denver, October 2004.
11. Jiang, X. and Jardine, A.K.S., Optimal stopping approach for condition-based maintenance, *CORS/ INFORMS Joint Conference*, (Invited Talk), Banff, Canada, May 2004.

12. Makis, V. and Jiang, X., Optimal stopping framework for analyzing maintenance policies, *Second International Conference on Mathematical Methods in Reliability*, (MMR'2000), Bordeaux, France, July 2000.
13. Jiang, X., Makis, V., and Jardine, A.K.S., A maintenance model with general repair and random repair cost. *The 9<sup>th</sup> Annual Industrial Engineering Research Conference*, Cleveland, May 2000.
14. Jiang, X., Makis, V., and Jardine, A.K.S., A maintenance model with two types of repairs and random repair cost. *The 15<sup>th</sup> IFORS Triennial Conference (INFORS'99)*, Beijing, P.R. China, August 1999.
15. Makis, V. and Jiang X., Optimal production/ maintenance/ inspection policy for an EMQ model with random machine failure, proceedings of *The 4<sup>th</sup> International Symposium on Logistics – Logistic in the Information Age*, Florence, Italy, July 1999.
16. Makis, V., Aboulfoth, F., and Jiang, X., An optimal inspection/ maintenance policy for a multiunit system, *The 16<sup>th</sup> European Conference on Operational Research*, Brussels, Belgium, July 1998.
17. Jiang, X. and Cheng, K., On the optimality and comparison of maintenance policies, proceedings of *The first International Symposium on Operation Research with Applications In Engineering, Technology, and Management (ISORA'95)*, Beijing, August 1995.

## **Research**

Research has been funded through NSF and NSERC of Canada

## **Award**

Outstanding Paper Award at the IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) at Singapore in December, 2007.

## **Courses Taught**

### **Undergraduate**

Supply Chain Systems and Logistics  
 Introduction to Operations Research  
 Statistics  
 Advanced Statistics  
 Reliability Engineering  
 Information System Engineering  
 Business Modeling

### **Graduate**

Probability Theory in Engineering  
 Advanced Reliability Engineering  
 VBA Modeling  
 Process Modeling

## **Graduate Advisory**

One PhD and six master students have graduated under my advisory.