

# Xiaoning (Sarah) Jin

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The University of Michigan  
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## EDUCATION

**The University of Michigan**, Ann Arbor, MI  
Ph.D. Industrial and Operations Engineering expected May 2012  
*Dissertation: Remanufacturing Planning Strategy for Electrical Vehicle Batteries with Variable Quality Product Returns*  
Advisors: Jun Ni & S. Jack Hu

M.S. Industrial and Operations Engineering May 2008

**Shanghai Jiaotong University**, China  
B.S. Industrial and System Engineering June 2006

**National University of Singapore**, Singapore July 2004 - December 2004  
Exchange Program in Industrial & System Engineering

## RESEARCH EXPERIENCE

*S. M. Wu* manufacturing research center, the University of Michigan  
GM collaborative research lab, the University of Michigan **Research Assistant** (10/2007- present)  
Participate in the research project on Joint Maintenance and Production Decision Support Tool of Manufacturing Systems (NSF fundamental research project)

- Developed real option-based model to determine the optimal schedule for preventive maintenance and production with the goal of minimizing the total cost over a finite horizon.
- Developed dynamic strategies for production and preventive maintenance level under demand uncertainty and improved cost-effectiveness of preventive maintenance in manufacturing systems.

Lead the Li-ion battery remanufacturing project collaborated with GM manufacturing research lab

- Developed end-of-life decision-making model for EV Li-ion battery returns.
- Investigated optimal strategy for disassembly-sorting-reassembly in remanufacturing systems with an emphasis on inventory control and cost reduction.
- Admission control of product returns with variable end-of-life quality.

## INDUSTRY EXPERIENCE

**Ford Motor Co.**, Dept. of Sustainability Analytics & Environment (SAE) at Research & Advanced Engineering 05/2011-08/2011  
Lead the project on developing a visualization and reporting prototype to identify areas in the assembly plant where over-cycle or interference would occur.

- Data collection and integration
- Setting up and implementing an example assembly line using virtual reality modeling language package.
- Visualization over-cycle analysis
- Prototype pilot and model validation

**BorgWarner Inc.** R&D, Transmission System(Summer Internship) 5/08-8/08

- Designed and simulated transmission core part assembly processes
- Involved in global supply management and commodity sourcing strategy team: cost analysis, quality evaluation and coordination of multiple suppliers

**Citigroup** Shanghai, Operations and Technology (Summer Internship) 1/06-4/06

- Maintained and updated the Information Security Assessment system
- Assisted risk assessment and management for information system applications

#### PUBLICATION

**X. Jin**, J. Ni, and Y. Koren, 2011. Optimal Control of Reassembly with Variable Quality Returns in a Product Remanufacturing System, *CIRP Annals-Manufacturing Technology*. 60(1) pp. 25-28.

**X. Jin**, L. Li, and J. Ni. 2009. Option Model for Joint Production and Preventive Maintenance System, *International Journal of Production Economics*. 119(2), pp. 347-353.

M. Dong., S. Sun and **X. Jin**. 2009. Modelling and Analysis of Newsvendor-Based Trading Options in Supply Chains, *International Journal of Services Operations and Informatics*, 4(3), pp. 258-271.

**X. Jin**, L. Li. and J. Ni. 2009. Fixed versus Flexible Preventive Maintenance and Production Strategy-Real Option Analysis, ASME conference, *Journal of Manufacturing Science and Engineering*.

X. Zeng, **X. Jin** and W, Qiang. 2007. Trading Options in Supply Chain, *Proceedings of the IEEE International Conference on Industrial Engineering and Engineering Management*. **X. Jin**, S.J. Hu and J.Ni, Assembly Strategies for Product Remanufacturing with Variable Quality Returns, submitted to *IEEE transactions on Automation Science and Engineering*

**X. Jin**, J. Ni, Dynamic Strategies for Production and Preventive Maintenance Level under Demand Uncertainty, submitted to *European Journal of Operations Research*

#### HONORS & AWARDS

##### Academic

- Extraordinary Research Award, S.M.Wu Manufacturing Research Center, the University of Michigan
- Graduate Fellowship, University of Michigan, Ann Arbor
- GuangHua Best graduate student scholarship, Shanghai Jiao Tong University
- Excellent Undergraduate Thesis
- SKF Merit Scholarship awarded, SKF Foundation
- International Student Fellowship, National University of Singapore
- Excellent Academic Scholarship, Shanghai Jiao Tong University

##### Service

- Extraordinary Service Award, S.M. Wu Manufacturing Research Center, the University of Michigan
- P&G College Students Profession Developing Excellent Award
- Outstanding Student Leadership Award, SJTU

#### COMPUTER SKILLS

Visual Basic, C/C++,  $\text{\LaTeX}$ , Matlab, CPLEX, Maple, Minitab, Unigraphics NX, AutoCAD, Solidworks, ProModel

#### HOBBIES

Swimming, badminton, tennis, portrait sketch, cooking and traveling