Yisha Xiang

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EDUCATION

Ph.D., Industrial Engineering, University of Arkansas, 2009
M.S., Industrial Engineering, University of Arkansas, 2006
B.S., Industrial Engineering, Nanjing University of Aero. & Astro., China, 2003

PROFESSIONAL EXPERIENCE

Associate Professor Sept. 2022-Present
Department of Industrial Engineering
University of Houston, Houston, TX

E. L. Derr Assistant Professor Nov. 2020-Aug. 2022
Department of Industrial, Manufacturing, and Systems Engineering
Texas Tech University, Lubbock, TX

Assistant Professor Sept. 2018-Aug. 2022
Department of Industrial, Manufacturing, and Systems Engineering
Texas Tech University, Lubbock, TX

Assistant Professor Sept. 2015-Aug. 2018
Department of Industrial Engineering
Lamar University, Beaumont, TX

Associate Professor (with tenure) July 2014-Aug. 2015
Department of Management Science and Engineering
Sun Yat-Sen University, Guangzhou, China

Assistant Professor Feb. 2010-June 2014
Department of Management Science and Engineering
Sun Yat-Sen University, Guangzhou, China Global Logistics Department
Halliburton, Houston, TX

AWARDS AND HONORS

- Best Application Paper, *IISE Transactions*, 2022
- Whitacre Engineering Research Award, Texas Tech University, 2021
- Best Track Paper Award, Quality Control and Reliability Engineering Track, IISE Annual Conference, 2021
- CAREER award, National Science Foundation, 2020
- Featured on today's Research Spotlight on Women Faculty, Texas Tech University, 2020
- Doug Ogden Best Paper Award, Society of Reliability Engineering, Reliability and Maintainability Symposium, 2021, 2019
- Best Track Paper Award, Production and Scheduling Track, IISE Annual Conference, 2017

- Most Helpful Professor voted by the LU IIE Student Chapter, 2017
- Stan Oftshun Best Paper Award, Society of Reliability Engineering, Reliability and Maintainability Symposium, 2013, 2017
- Ralph A. Evans/P. K. McElroy Best Paper Award, Reliability and Maintainability Symposium, 2013
- Outstanding Employee of the Year, Sun Yat-Sen University, China, 2013

RESEARCH INTERESTS

Methodologies: Data-driven decision making under uncertainty, Statistical machine learning
Applications: Manufacturing system control, Energy, Healthcare

PROPOSAL FUNDING

Funded Proposals

1. Y. Xiang (PI), Statistical Machine Learning Methods for Analysis and Control of the HTS Manufacturing Process, $34,971, Advanced Manufacturing Institute, University of Houston, Jan 2023-December 2023.

2. Y. Xiang (PI), CAREER: Enhancing Environmental and Economic Sustainability of Additive Manufacturing-based Remanufacturing, $508,805 +$15,420 REU, National Science Foundation, September 2020–August 2025.

3. Y. Xiang (co-PI, 30%), A Dual-Mode Millimeter-Wave Sensor Network for Structural Monitoring in Wind Farms, $549,999, National Science Foundation, June 2022-May 2025.

4. Y. Xiang (co-PI, 12%), Intelligent Visual Analytics for Energy Aware Security of Advanced Manufacturing, $200,000, Clean Energy Manufacturing Innovation Institute: Cybersecurity in Energy Efficient Manufacturing, Department of Energy, January 2021-December 2021, PI: R. Hewett, Co-PIs: A. Serwadda, T. Dang, D. Le, Z. Zhang, L. Chen.

5. Y. Xiang (PI), Data-driven Reliability Analysis and Maintenance Planning for Flow Transmitters, $11,500, Covestro, September 2019–August 2021.

6. Y. Xiang (PI), Collaborative Research: Maintenance Planning for Complex Systems in Dynamic Environments, $279,025 + $8,000 REU, National Science Foundation, September 2017–August 2022.

7. Y. Xiang (PI), Integrated Framework of Degradation-based Reliability Modeling and Adaptive Maintenance Logistics, $5000, Research Enhancement Grant, Lamar University, September 2017–August 2018.

8. Y. Xiang (PI), Reliability and Availability Analysis for Port Equipment, $25,000, Center for Advances in Port Management, Lamar University, January 2016–July 2017, co-PI: V. Zaloom.

PUBLICATIONS[1]

Refereed Journal Papers (Accepted or Published)

1. Liao, Y.*, Xiang, Y., Zhao, Z, and Ai, A. (2023). Bayesian mixed-effect higher order hidden Markov models with applications to predictive healthcare using electronic health records. *IISE Transactions* (in print).

2. Liao, Y.*, Dong, N., and Xiang, Y. (2023). Bayesian Prognosis Analysis of Human Papillomavirus-Associated Head and Neck Cancer using Hierarchical Dirichlet Process Mixture Models. *IISE Transactions*(in print).

3. Zhu, Z.*, Xiang, Y., and Zhao, M. (2023). Data-driven remanufacturing planning under uncertainty. *European Journal of Operational Research*, 309(1), 102-116.

4. Liao, Y.*, Xiang, Y., Zheng, M., and Wang, J. (2023). DeepMiceTL: a deep transfer learning based prediction of mice cardiac conduction diseases using early electrocardiograms. *Briefings in Bioinformatics*, 24(3), bbad109.

5. Zhu, Z.*, Xiang, Y., and Zeng, B. (2021). Multi-component maintenance optimization: A stochastic programming approach. *INFORMS Journal on Computing*, 33(3), 898-914.

6. Shi, Y.*, Xiang, Y., Xiao, H., and Xing, L. (2021). Joint optimization of budget allocation and maintenance planning for deteriorating transportation infrastructure with multiple facilities. *European Journal of Operational Research*, 288(2), 382-393.

7. Zhu, Z.* and Xiang, Y. (2021). Condition-based maintenance for multi-component systems: Modeling, structural properties, and algorithms. *IISE Transactions*, 53(1), 88-100.

8. Liao, Y.*, Xiang, Y., and Wang, M. (2021). Health assessment and prognostics based on higher order hidden semi-Markov models. *Naval Research Logistics*, 68(2), 259-276.

9. Shi, Y.*, Xiang, Y., Liao, Y.*, Zhu, Z.*, and Hong, Y. (2021). Optimal burn-in policies for multiple dependent degradation processes. *IISE Transactions*, 53(11), 1281-293. (**featured in the October, 2021 issue of the IISE's *Industrial and Systems Engineer* magazine**)

10. Lin, C., Xiao, H., Peng, R., and Xiang, Y. (2021). Optimal defense-attack strategies between m defenders and n attackers: A method based on cumulative prospect theory. *Reliability Engineering and System Safety*, 210, 107510.

11. Andrukonis, A., Protopopova, A., Xiang, Y., Liao, Y.*, and Hall, N. (2021). Behavioral correlates of urinary output in shelter cats. *Applied Animal Behaviour Science*, 241, 105397.

12. Xing, L., Zhao, G., Xiang, Y., and Liu, Q. (2021). A behavior-driven reliability modeling method for complex smart systems. *Quality and Reliability Engineering International*, 37(5), 2065-2084

13. Shi, Y.*, Xiang, Y., Zhu, W., and Feng, Q. (2020). A condition-based predictive maintenance optimization for multi-component systems subject to a system reliability requirement. *Reliability Engineering and System Safety*, 202, 107042.

[1] $*$ denotes student author under my direct supervision.

14. Shi, Y., Feng, Q., Shu, Y., and Xiang, Y. (2020). Multi-dimensional Lévy processes with Lévy copulas for multiple dependent degradation processes in lifetime analysis. *Quality Engineering*, 32(3), 434-448.

15. Wang, W., Fang, C., Liu, S., and Xiang, Y. (2021). Reliability analysis and optimization of multi-state sliding window system with sequential demands and time constraints. *Reliability Engineering and System Safety*, 208, 107449.

16. Xiao, H., Zhang, Y., Xiang, Y., and Peng, R. (2020). Optimal design of a linear sliding window system with consideration of performance sharing. *Reliability Engineering and System Safety*, 198, 106900.

17. Xing, L., Zhao, G., Wang, Y., and Xiang, Y. (2020). Reliability modeling of correlated competitions and dependent components with random failure propagation time. *Quality and Reliability Engineering International*, 36(3), 947-964.

18. Shi, Y.*, Xiang, Y., and Li, M. (2019). Optimal maintenance policies for multi-Level preventive maintenance with complex effects. *IISE Transactions*, 51(9), 999-1011.

19. Zhu, Z.*, Xiang, Y., Li, M., Zhu, W., and Schneider, K. (2019). Preventive maintenance subject to equipment unavailability. *IEEE transactions on Reliability*, 68(3), 1009-1020.

20. Chen, S., Lu, L., Xiang, Y., Sagues, A., and Li, M. (2018). A data heterogeneity modeling and quantification approach for field pre-assessment of chloride-induced corrosion in aging infrastructures. *Reliability Engineering and System Safety*, 171, 123-135.

21. Alaswad, S., and Xiang, Y. (2017). A review on condition-based maintenance optimization models for stochastically deteriorating system. *Reliability Engineering and System Safety*, 157, 54-63. (**top 3 most cited articles published since 2017**)

22. Zhu, Z.*, Xiang, Y., Coit, D.W., and Feng, Q. (2017). Condition-based maintenance under performance-based contracting. *Computers and Industrial Engineering*, 111, 391-402.

23. Xiang, Y., Coit, D. W., and Zhu, Z.* (2016). A multi-objective joint burn-in and imperfect CBM model for degradation-based heterogeneous populations. *Quality and Reliability Engineering International*, 32(8), 2739-2750.

24. Shi, Y.*, Xiang, Y., Jin, T., and Li, Y. (2016). Joint planning for spare parts inventory and preventive maintenance in a multi-echelon network. *International Journal of Inventory Research*, 3(3), pp.263-281.

25. Xiang, Y., Zhuang, J. (2016). Medical resource allocation serving victims in deteriorating health conditions in the aftermath of a disaster. *Annals of Operations Research*, 236(1), 177-196.

26. Chen N., Ye Z. S., Xiang, Y., and Zhang, L. (2015). Condition-based maintenance using the inverse Gaussian degradation model. *European Journal of Operational Research*, 243 (1), 190-199.

27. Xiang, Y., Coit, D. W., and Feng, Q. (2014). Accelerated burn-in and condition-based maintenance for n-subpopulations subject to stochastic degradation. *IIE Transactions*, 46(10), 1093-1106.

28. Xiang, Y., Cassady, C. R., Jin, T., and Zhang, C. (2014). Joint production and maintenance planning with deterioration and random yield. *International Journal of Production Research*, 52 (6), 1644-1657.

29. Xiang, Y., and Rossetti, M. D. (2014). The effect of backlog queue and load-building processing in a multi-echelon inventory network. *Simulation Modeling and Theory Practice*, 43, 54-66.

30. Xiang, Y. (2013). Joint optimization of $\bar{X}$ control chart and preventive maintenance policies: A discrete-time Markov chain approach. *European Journal of Operational Research*, 229(2), 382-390.

31. Xiang, Y., Coit, D. W., and Feng, Q. (2013). n-Subpopulations experiencing stochastic degradation: Reliability modeling, burn-in and preventive replacement optimization. *IIE Transactions*, 45 (4), 391-408. (**top 3 most popular paper published in 2013, complimentary open-access awarded**)

32. Xiang, Y., Cassady, C. R., and Pohl, E. A. (2012). Optimal maintenance policies for systems subject to a Markovian operating environment. *Computers and Industrial Engineering*, 62(1), 190-197.

Completed Working Papers

1. Panda, S.*, Xiang, Y., and Liu, R. Dynamic resource matching in manufacturing using deep reinforcement learning. Under review at *European Journal of Operational Research*

2. Shi, Y.*, Xiang, Y., Liu, R., and Zhao, M. Ambiguity Learning in Sequential Decision Making with Parameter Uncertainty. under review at *Informs Journal on Computing*.

3. Xiao, H., Lin, C., Xiang, Y., and Peng, R. Optimizing dynamic performance of phased-mission systems with a common bus and warm standby elements. under review at *IEEE Transactions on Reliability*.

Chapters in Books

1. Jin, T., Xiang, Y., Qin, J., & Subramanyam, V. (2022). Some New Advances in Modeling for Performance-Based Maintenance Services. In Multicriteria and Optimization Models for Risk, Reliability, and Maintenance Decision Analysis: Recent Advances (pp. 459-486). Cham: Springer International Publishing.

2. Xing, L., Zhao, G., and and Xiang, Y. (2020). Phased-mission modelling of physical layer reliability for smart homes. In *Stochastic Models in Reliability Engineering* (pp. 317-330). CRC Press.

Papers in Refereed Conference Proceedings

1. Shi, Y.*, and Xiang, Y. (2021). Joint optimization of resource allocation and imperfect maintenance planning for a multi-facility infrastructure system. *2021 IISE Annual Conference*. (**IISE Quality Control & Reliability Engineering Best Track Paper**)

2. Liao, Y.*, Xiang, Y., and Keedy, E. (2021). Age-based maintenance scheduling for flowmeters with multiple failure modes and covariates . *Proceedings of the 2021 Annual Reliability and Maintainability Symposium.* (**Society of Reliability Engineering Doug Ogden Best Paper Award**)

3. Wascom, W.*, and Xiang, Y. (2021). Time-based preventative maintenance policies for circuit breakers with multiple failure types. *Proceedings of the 2021 Annual Reliability and Maintainability Symposium.*

4. Liao, Y.*, Xiang, Y., and Du, D. (2020). Automatic classification of heartbeats using ECG signals via higher order hidden Markov model. *Proceedings of the 2020 IEEE 16th International Conference on Automation Science and Engineering.*

5. Liao, Y.*, Xiang, Y., and Keedy, E. (2020). Reliability analysis of flow meters with multiple failure modes in the process industry. *Proceedings of the 2020 Annual Reliability and Maintainability Symposium.*

6. Bediako, E.*, Xiang, Y., Alaswad, S., Liao, Y.*, and Xing, L. (2020). Reliability analysis of crude unit overhead piping based on wall thickness degradation process. *Proceedings of the 2020 Annual Reliability and Maintainability Symposium.*

7. Zhu, Z.*, Xiang, Y., Cong, W., Zhang, H., and Jin, T. (2019). A proactive remanufacturing planning model for enhancing environmental sustainability. *Proceedings of the 2019 International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering.*

8. Shi, Y.*, Xiang, Y., and Jin, T. (2019). Structured maintenance policies for deteriorating transportation infrastructures: Combination of maintenance types. *Proceedings of the 2019 Annual Reliability and Maintainability Symposium.* (**Society of Reliability Engineering Doug Ogden Best Paper Award**)

9. Zhu, Z.*, Xiang, Y., and Coit, D. W. (2018). Redundancy allocation for serial-parallel system considering heterogeneity of components. *Proceedings of the ASME 2018 International Manufacturing Science and Engineering Conference.*

10. Zhu, Z.*, Xiang, Y., Jin, T., and Li, M. (2018). Sequential opportunistic maintenance for multi-unit systems subject to stochastic degradation. *Proceedings of the 2018 Annual Reliability and Maintainability Symposium.*

11. Wari, E., Zhu, W. and Xiang, Y. (2017). A constraint programming model for ice cream processing. *Proceedings of the 2017 IISE Annual Conference and Exposition.* (**IISE Best Track Paper Award, Production Planning & Scheduling Track**)

12. Zhu, Z.*, Xiang, Y., Alaswad, S., and Cassady, C. R. (2017). A sequential inspection and replacement policy for degradation-based systems. *Proceedings of the 2017 Annual Reliability and Maintainability Symposium.* (**Society of Reliability Engineering Oftshun Best Paper Award**)

13. Jin, T., Xiang, Y., Taboada, H., and Espiritu, J. (2017). Ensuring system availability under deterministic fleet growth: Redundancy allocation or spares inventory. *Proceedings of the 2017 Annual Reliability and Maintainability Symposium.*

14. Kulibaba, N.*, Xiang, Y., Curry, J., and Criag, B. (2016). Joint condition-based maintenance and spare parts provisioning for a two-echelon network. *Proceedings of the 2016 IIE Annual Conference and Exposition.*

15. Jin, T., Xiang, Y., and Cassady, C. R. (2013). Understanding operational availability in performance- based logistics and maintenance services. *Proceedings of the 2013 Annual Reliability and Maintainability Symposium.* (**Society of Reliability Engineering Oftshun Best Paper Award, R. A. Evans/P. K. McElroy Best Conference Paper Award**)

16. Xiang, Y., and Cassady, C. R. (2011). Lot sizing and maintenance planning for a deteriorating machine with stochastic demand and state-dependent random yields: A single-period problem. *Proceedings of the 2011 IIE Annual Conference and Exposition.*

17. Nanajala, N., Jin, T., and Xiang, Y. (2011). Joint optimization for reliability and performance based service logistics-application to wind power industry. *Proceedings of the 2011 IIE Annual Conference and Exposition.*

18. Xiang, Y., David, C., and Feng, Q. (2011). Optimal burn-in for n-subpopulations with stochastic degradation. *Proceedings of the 2011 International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering.*

19. Rossetti, M. D., and Xiang, Y. (2010). Simulating backlog and load building processes in a two-echelon inventory system. *Proceedings of the 2010 Winter Simulation Conference.*

20. Xiang, Y., Mallart, L. M., and Cassady, C. R. (2008). A production system with random yield and equipment deterioration: Single period. *Proceedings of the 2008 IIE Annual Conference and Exposition 2008.*

21. Xiang, Y., and Cassady, C. R. (2007). Comparing scheduled and condition-based maintenance policies for single-unit systems operated in markovian environments. *Proceedings of the 2007 IIE Annual Conference and Exposition.*

22. Xiang, Y., and Cassady, C. R. (2007). Time to failure behavior under a stochastic deterioration model. *Proceedings of the 2007 Reliability and Maintainability Symposium.*

23. Rossetti, M. D., Miman, M., Varghese, V., and Xiang, Y. (2006). An object-oriented framework for simulating multi-echelon inventory systems. *Proceedings of the 2006 Winter Simulation Conference.*

PRESENTATIONS

Invited Seminars and Colloquia

1. Tsinghua University, China, July 2023.

2. Nanjing University of Aero. & Astro., Nanjing, China, January 2023 (virtual).

3. Xi'an Jiaotong University, Xi'an, China, December 2022 (virtual).

4. University of Miami, Miami, FL, September 2022 (virtual).

5. Wayne State University, Detroit, MI, March 2021 (Virtual).

6. Texas A&M University, College Station, TX, February 2021.
7. University of Massachusetts -Dartmouth, Dartmouth, MA, November 2020 (Virtual).
8. University of Electronic Science and Technology of China, Chengdu, China, June 2019.
9. Schlumberger Reliability and Maintenance Colloquium, Houston, TX, September 2017.
10. Schlumberger Engineering Colloquium, Rosharon, TX, May 2016.
11. University of Houston, Houston, TX, February 20016.
12. University of Alabama, Huntsville, AL, April 2014.
13. Northwestern Polytechnic University, Xi'an, Shanxi, China, May 2012.

Conference Presentations

1. Shi, Y. and Xiang, Y. (2023). Distributionally robust Markov decision process with uncertain transition probabilities. The 13th International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering (QR2MSE), Kunming, Yunnan, China, July 2023.
2. Li, T. and Xiang, Y. (2023). Distributionally Robust Partially Observable Markov Decision Processes with Distance-Based Ambiguity Sets. INFORMS Conference on Quality, Statistics, and Reliability (ICQSR), Raleigh, NC.
3. Zhu, Z. and Xiang, Y. (2023). Data-Driven Remanufacturing Planning with Parameter Uncertainty. IISE Annual Conference, New Orleans, LA.
4. Shi, Y., and Xiang, Y. (2022) Data-driven condition-based maintenance for deteriorating systems subject to parameter uncertainty. The 4th International Conference on System Reliability and Safety Engineering (SRSE), Virtual, December 2022.
5. Panda, S., and Xiang, Y. (2022). Solving Supply-Demand Matching of Manufacturing Resources Using Model-free RL Algorithms. INFORMS Annual Meeting, Indianapolis, IN.
6. Shi, Y., and Xiang, Y. (2022). A Bayesian framework of Markov decision process with uncertain transition probabilities. INFORMS Annual Meeting, Indianapolis, IN.
7. Liao, Y., Xiang, Y., Zheng, M., and Wang, J. (2022). DeepMiceTL: A Deep Transfer Learning Based Prediction of Mice Cardiac Arrhythmias Using Early Electrocardiograms. INFORMS Annual Meeting, Indianapolis, IN.
8. Panda, S., and Xiang, Y. (2022). Dynamic matching of demand-supply types with manufacturing resources. IISE Annual Conference, Seattle, WA.
9. Zhicheng, Z., and Xiang, Y. (2022). Condition-based Maintenance for Multi-component Systems: Modeling, Structural Properties, and Algorithms. IISE Annual Conference, Seattle, WA.
10. Zhu, Z., Xiang, Y., and Liao, Y. (2022). Two-stage Stochastic Programming for Maintenance Optimization of Multi-component Systems. Annual Reliability and Maintainability Symposium, Tucson, AZ.

11. Xiang, Y. (2021). Data-Driven Markov Decision Processes with Parameter Uncertainty: Application to Remanufacturing Planning. The 10th International Symposium on Quality Science and Reliability Technology & 2021 Tsinghua University Annual meeting of the Institute for Quality and Reliability (Virtual).

12. Zhu, Z., and Xiang, Y. (2021). Robust remanufacturing planning with parameter uncertainties. INFORMS Annual Meeting, Anaheim, CA.

13. Liao, Y., Dong, N., and Xiang, Y. (2021). Prognosis Analysis Of Breast Cancer Based On Dirichlet Process Mixture Models. INFORMS Annual Meeting, Anaheim, CA.

14. Liao, Y., Xiang, Y., Zhao, Z., and Ai, D. (2021). Bayesian mixed-effect higher order hidden Markov models with applications to predictive healthcare using electronic health records. International Conference on Intelligent Biology and Medicine (Virtual).

15. Shi, Y., and Xiang, Y. (2021). Joint optimization of resource allocation and imperfect maintenance planning for a multi-facility infrastructure System. IISE Annual Conference (Virtual).

16. Zhu, Z., and Xiang, Y. (2021). Two-stage stochastic programming for maintenance optimization of multi-component systems. IISE Annual Conference (Virtual).

17. Liao, Y., Xiang, Y., and Keedy, E. (2021). Age-based maintenance scheduling for flowmeters with multiple failure modes and covariates. Annual Reliability and Maintainability Symposium, Orlando, FL.

18. Wascom, W., and Xiang, Y. (2021). Time-based preventative maintenance policies for circuit breakers with multiple failure types. Annual Reliability and Maintainability Symposium, Orlando, FL.

19. Zhu, Z., and Xiang, Y. (2020). Optimal Control of Remanufacturing with Parameter Uncertainty. INFORMS Annual Meeting (Virtual).

20. Shi, Y., and Xiang, Y. (2020). Condition-based maintenance for deteriorating systems subject to ambiguity in transition probabilities. INFORMS Annual Meeting (Virtual).

21. Liao, Y., and Xiang, Y. (2020). Predictive maintenance management with prognostics information based on higher order hidden semi-Markov models. INFORMS Annual Meeting (Virtual).

22. Liao, Y., Xiang, Y., and Du, D. (2020). Automatic classification of heartbeats using ECG signals via higher order hidden Markov model. IEEE 16th International Conference on Automation Science and Engineering (Virtual).

23. Liao, Y., Xiang, Y., and Keedy, E. (2020). Reliability analysis of flow meters with multiple failure modes in the process industry. Annual Reliability and Maintainability Symposium, Palm Springs, CA.

24. Bediako, E., Xiang, Y., Alaswad, S., Liao, Y., and Xing, L. (2020). Reliability analysis of crude unit overhead piping based on wall thickness degradation process. Annual Reliability and Maintainability Symposium, Palm Springs, CA.

25. Liao, Y., and Xiang, Y. (2019). Classification of ECG signals via higher order hidden Markov model. INFORMS Annual Meeting, Seattle, WA.

26. Shi, Y., Xiang, Y., and Zhu, W. (2019). Condition-based predictive maintenance optimization for multi-component systems subject to a system reliability requirement. INFORMS Annual Meeting, Seattle, WA.

27. Zhu, Z., and Xiang, Y. (2019). Condition-based maintenance for multi-component systems: Modeling, structural properties, and algorithms. INFORMS Annual Meeting, Seattle, WA.

28. Zhu, Z., Xiang, Y., Cong, W., Zhang, H., and Jin, T. (2019). proactive remanufacturing planning model for enhancing environmental sustainability. International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering, Zhangjiajie, China.

29. Liao, Y., Xiang, Y., Beruvides, M., and Heinze, L. (2019). A data-driven prognostic method for cruide-oil pipeline systems. Southwestern Petroleum Short Course Conference, Lubbock, TX.

30. Zhu, Z., Xiang, Y., and Zeng B. (2018). Condition-based maintenance optimization for multi-component systems: A stochastic programming approach. INFORMS Annual Meeting, Phoenix, AZ.

31. Shi, Y., and Xiang, Y. (2018). Joint optimization of resource allocation and maintenance planning for a multi-facility infrastructure system. INFORMS Annual Meeting, Phoenix, AZ.

32. Zhu, Z., Xiang, Y., and Coit, D.W. (2018). Redundancy allocation for serial-parallel system considering heterogeneity of components. The ASME 2018 International Manufacturing Science and Engineering Conference, College Station, TX.

33. Shi, Y., and Xiang, Y. (2018). Optimal maintenance policies for multi-level preventive maintenance with complex effects. IISE Annual Conference and Exposition, Orlando, FL.

34. Zhu, Z., Xiang, Y., Jin, T., and Li, M. (2018). Sequential opportunistic maintenance for multi-unit systems subject to stochastic degradation. Annual Reliability and Maintainability Symposium, Reno, NV.

35. Zhu, Z., Xiang, Y., and Zeng B. (2017). Multi-component maintenance optimization: A stochastic programming approach. INFORMS Annual Meeting, Houston, TX.

36. Wari, E., Zhu, W. and Xiang, Y. (2017). A constraint programming model for ice cream processing. IISE Annual Conference and Exposition, Pittsburgh, PA.

37. Shi, Y., Xiang, Y., and Criag, B. (2017). Condition-based maintenance for deteriorating transportation infrastructures. IIE Annual Conference and Exposition, Pittsburgh, PA.

38. Zhu, Z., Xiang, Y., Zhu, W., and Curry, J. (2016). An opportunistic maintenance policy for degradation-based multi-unit systems. IISE Annual Conference and Exposition, Pittsburgh, PA.

39. Zhu, Z., Xiang, Y., Alaswad, S., and Cassady, C. R. (2017). A sequential inspection and replacement policy for degradation-based systems. Annual Reliability and Maintainability Symposium, Orlando, FL.

40. Zhu, Z., Xiang, Y., and Coit, D.W. (2016). Predictive maintenance for a multi-unit system. INFORMS Annual Meeting, Nashville, TN.

41. Kulibaba, N., Xiang, Y., Curry, J., and Craig, B. (2016). Joint condition-based maintenance and spare parts provisioning for a two-echelon network. IIE Annual Conference and Exposition, Anaheim, CA.

42. Zhu, Z., Xiang, Y., Zhu, W. (2016). Preventive maintenance subject to equipment unavailability. IIE Annual Conference and Exposition, Anaheim, CA.

43. Xiang, Y., and Coit, D.W. (2015). Joint burn-in and imperfect condition-based maintenance for n-subpopulations. INFORMS Annual Meeting, Philadelphia, PA.

44. Xiang, Y., and Coit, D.W. (2014). Imperfect condition-based maintenance for a Gamma degradation process with random effects. INFORMS Annual Meeting, Minneapolis, MN.

45. Xiang, Y., Coit, D.W. and Feng, Q. (2013). Joint accelerated burn-in and condition-based maintenance for n-subpopulations subject to stochastic degradation. INFORMS, Minneapolis, MN.

46. Xiang, Y., and Jin, T. (2013). Joint optimization of $\bar{X}$ control chart and preventive maintenance policies. INFORMS Annual Meeting, Minneapolis, MN.

47. Xiang, Y., and Cassady, C. R. (2011). Lot sizing and maintenance planning for a deteriorating machine with random yields. Industrial Engineering Research Conference, Reno, NV.

48. Xiang, Y., Coit, D.W. and Feng, Q. (2011). Optimal burn-in for n-subpopulations with stochastic degradation. International Conference on Quality, Reliability, Risk, Maintenance and Safety Engineering (ICQR2MSE), Xi'an, China.

49. Xiang, Y., Mallart, L. M., and Cassady, C. R. (2008). A production system with random yield and equipment deterioration: Single period. Industrial Engineering Research Conference, Vancouver, Canada.

50. Xiang, Y., and Cassady, C. R. (2007). Time to failure behavior under a stochastic deterioration model. Annual Reliability and Maintainability Symposium, Orlando, FL.

TEACHING EXPERIENCE

Stochastic Models	UH	Ugrad	Fall 2022, 23
Decision Modeling & Optimization	UH	Grad	Spring 2023
Manufacturing Systems Control	Texas Tech	Ugrad	Spring 2021
Stochastic Processes	Texas Tech	Grad	Fall 2019, 20, 21
Decision Making under Uncertainty	Texas Tech	Grad	Spring 2020
Maintenance Modeling and Optimization	Texas Tech	Grad	Spring 2019
Production Inventory and Control	Lamar	Ugrad	Fall 2015, 17
Operations Research	Lamar	Ugrad	Spring 2016, 17
Reliability and Maintenance Operations	Lamar	Ugrad	Fall 2016, 17
Reliability	Lamar	Grad	Fall 2015, 16, 18
Repairable System Modeling	Lamar	Grad	Spring 2016, 17
Production Inventory and Control	Sun Yat-Sen	Ugrad	Spring 2010, Fall 2013
Business Statistics	Sun Yat-Sen	Ugrad	Spring 2013, 14, Fa 2014
Operations Management	Sun Yat-Sen	Ugrad	Spring 2010, 11, 13, 15
Operations Research	Sun Yat-Sen	Grad	Fall 2012, 13, 14

STUDENT ADVISING

Ph.D. Dissertations Supervised

1. Ying Liao (IE, Texas Tech), Statistical Machine Learning on Time Series with Applications to Manufacturing and Healthcare, August 2023. (Current Position: Assistant Professor at Wuhuan University, China)

2. Yvette Shi (IE, Texas Tech), Data-Driven Sequential Decision Making with Learning under Ambiguity, August 2022. (Current Position: Assistant Professor at Wuhuan University, China)
3. Jason Zhu (IE, Texas Tech), Data-driven maintenance and remanufacturing optimization of complex systems, September 2021.

Ph.D. Students in Progress

1. Saunak Panda (IE, UH), in progress.
   Topic: Deep reinforcement learning for dynamic supply-demand matching for manufacturing resources.
2. Tong Li (IE, UH), in progress.
3. Jun Zhou (IE, UH), in progress.
4. Di Shi (IE, UH), in progress.
5. Eric Bediako (Systems and Engineering Management, Texas Tech), in progress.
6. Will Wascom (Systems and Engineering Management, Texas Tech), in progress.

Membership on PhD Committees

1. Sagar Chhetri (Systems and Engineering Management, Texas Tech), March, 2021.
2. Saikath Bhattacharya (Electrical and Computer Engineering, University of Massachusetts, Dartmouth), December 2020.
3. Marko Dodig (Systems and Engineering Management, Texas Tech), April 2020.
4. Paul Braden (Systems and Engineering Management, Texas Tech), August 2021.
5. Monikka M. Mann (Systems and Engineering Management, Texas Tech), in progress.
6. Gohkar Tejas (Systems and Engineering Management, Texas Tech), in progress.

Membership on M.S. Committees

1. Nikko Valdez (Interdisciplinary Studies, Texas Tech), November 2020.

Undergraduate Research Advising

1. Morgan Loiseau (B.S., Texas Tech University), REU participant, Summer 2020-Spring 2021.
2. Nadiya Kulibaba (B.S., Lamar University), Spring 2016-Fall 2016.

PROFESSIONAL SERVICE

Editorial Service

- Associate editor, *IISE Transactions*, 2021-present
- Associate editor, *IEEE Transactions on Automation Science and Engineering*, 2020-present

Professional Society Service

- President, IISE Quality Control and Reliability Engineering Division, 2023-present
- Chair-elect, INFORMS Quality, Statistics, and Reliability Sector, 2022-present
- President-elect, IISE Quality Control and Reliability Engineering Division, 2022-2023
- Cluster Chair, Quality, Statistics and Reliability Cluster, INFORMS Annual Meeting, 2023
- Best Paper Award Reviewer, INFORMS Data Mining Society, 2023
- Best Student Paper Award Reviewer, INFORMS Quality, Statistics and Reliability Sector, 2016, 2023
- Best Paper Award Reviewer, INFORMS Conference on Quality, Statistics, and Reliability, 2023
- Track chair, Quality Control and Reliability Engineering Track, IISE Annual Conference, 2021, 2022, 2023
- Best Track Paper Competition Committee Chair, IISE Annual Conference, 2022, 2023
- Best Student Paper Award Judge, IISE Quality Control and Reliability Engineering Track, 2023
- Best Student Paper Award Reviewer, IISE Quality Control and Reliability Engineering Track, 2012, 2017, 2020, 2023
- Reviewer, National Science Foundation, 2017, 2020, 2021, 2023
- Best Refereed Paper Competition Committee Chair, INFORMS Quality, Statistics and Reliability Sector, 2022
- Technical Committee, the 4th International Conference on System Reliability and Safety Engineering (SRSE 2022), 2022

- Student Poster Competition Judge, INFORMS Quality, Statistics and Reliability Sector, 2021, 2022
- Data Challenge Competition Committee Chair, IISE Quality Control and Reliability Engineering Division, 2022
- Treasurer, INFORMS Women in OR/MS (WORMS) Forum, 2021-2022
- New Faculty Colloquium Panelist, INFORMS Annual Meeting, 2020
- Board of directors, IISE Quality Control and Reliability Engineering Division, 2019-22
- Session chair, INFORMS Annual Meeting, 2014-2022
- Technical program committee, the 10th Prognostics and Systems Health Management conference, 2019
- Reviewer, Natural Science and Engineering Research Council of Canada, 2016
- Reviewer, National Natural Science Foundation of China, 2015, 2016
- Quality and Reliability Technical committee, ASME, 2016
- Program committee, the 11th International Conference on Reliability, Maintainability and Safety, Hangzhou, China, 2016
- Session chair, the Ninth International Conference on Mathematical Methods in Reliability, Tokyo, Japan, 2015
- Session chair, World Conference of Engineering Asset Management, Hong Kong, 2013

Department, College, and University Service

Service at UH

- Graduate Student Admission Committee, 2022-present
- Graduate Program Committee, 2022-present
- Faculty Advisor, UH INFORMS Student Chapter, 2022-present
- Cullen College of Engineering Teaching Awards Committee, 2022

Service at TTU

- Founding Faculty Advisor, initiated TTU INFORMS Student Chapter, 2020-2022
- Faculty Search Committee, 2020, 2021
- Graduate Recruitment Committee Chair, 2019-2021
- Graduate Recruitment Committee, 2018-2019, 2021-present
- Graduate Program Committee, 2018-2021

Ad Hoc Reviewing Service

Referee for *Applied Mathematical Modelling*, *Communications in Statistics – Theory and Methods*, *Computers & Industrial Engineering*, *Computers & Operations Research*, *European Journal of Operational Research*, *IISE Transactions*, *IEEE Transactions on Automation Science and Engineering*, *IEEE Transactions on Reliability*, *IEEE Transactions on Systems, Man, and Cybernetics*, *International Journal of Inventory Research*, *International Journal of Performability Engineering*, *International Journal of Strategic Engineering Asset Management*, *International Journal of Systems Science*, *Journal of Applied Statistics*, *Journal of Intelligent Manufacturing*, *Journal of Manufacturing Systems*, *Journal of Risk and Reliability*, *Journal of Simulation*, *Naval Research Logistics*, *Production and Operations Management*, *Quality and Reliability Engineering International*, *Reliability Engineering and Safety Science*, *Wiley Encyclopedia of Operations Research and Management Science*.

PROFESSIONAL AFFILIATIONS

Member of IISE, INFORMS, SRE