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ACADEMIC DEGREES

• Nanjing University	Electronics & Information Systems (Honors)	B.S., 1999
• Shanghai Jiaotong University	Communications & Information Systems	M.E., 2002
• SUNY- Buffalo	Computer Science	M.S., 2004
• Northwestern University	Industrial Engineering & Management Sciences	Ph.D., 2009

ACADEMIC POSITIONS

- 08/2024–present, Professor, Department of Systems Engineering & Operations Research, George Mason University.
- 08/2025–present, Affiliate Faculty, Sid and Reva Dewberry Department of Civil, Environmental, and Infrastructure Engineering, George Mason University.
- 10/2024–present, Affiliate Faculty, Department of Computer Science, George Mason University.
- 02/2024-present, Affiliate Faculty, Department of Statistics, George Mason University.
- 08/2017–08/2024, Associate Professor, Department of Systems Engineering & Operations Research, George Mason University.
- 08/2011–08/2017, Assistant Professor, Department of Systems Engineering & Operations Research, George Mason University.

INDUSTRIAL AND VISITING POSITIONS

- 11/2022-06/2023, Visiting Researcher, Pacific Northwest National Laboratory, Richland, WA.
- 06/2009-08/2011, Senior Analyst, Finance-Operations Research, United Airlines, Chicago, IL.
- 06/2008-09/2008, Intern, Business Analytics and Mathematical Sciences, IBM T.J. Watson Research Center, Yorktown Heights, NY.
- 06/2007-10/2007, Intern, Enterprise Optimization, United Airlines, Elk Grove Village, IL.
- 06/2005-09/2005, Intern, Business Optimization, IBM China Research Lab, Beijing, China.

RESEARCH INTERESTS

- Stochastic simulation: simulation optimization, digital twin, rare event simulation, input uncertainty, design of experiment, surrogate modelling, simulation data analytics.
- Artificial intelligence/machine learning: Monte Carlo tree search, clustering, reinforcement learning, evolutionary computation, Gaussian process regression, swarm intelligence.

- Interdisciplinary applications: electric vehicle and electric grid integration, resilient power systems, cloud computing, advanced manufacturing, healthcare systems, transportation.

JOURNAL PUBLICATIONS

1. Zhang, F., Siddiki, S., Wong, D., Xu, J., & Choi, G. (2025). Early-stage policy formulation for electric vehicle infrastructure development: Key processes, considerations and priorities. *Transport Policy*, 168 (1), 27-39.
2. Hu, M., Xu, J., Hu, J.-Q., & Chen, C.-H. (2025). Optimal Computation Budget Allocation with Gaussian Process Regression. *European Journal of Operational Research*, 322 (1), 147-156. https://doi.org/10.1016/j.ejor.2024.11.049.
3. Wang, T., Xu, J., Branke, J., Hu, J.-Q., & Chen, C.-H. (2025). Ranking and Selection with Two-Stage Decision. *European Journal of Operational Research*, 322 (1), 121-132. https://doi.org/10.1016/j.ejor.2024.11.005.
4. Yu, M., Xu, J., Li, X., & Tang, J. (2024). A Study on Healthcare Alliances with a Congestion-based Information Guidance Policy. *Asia-Pacific Journal of Operational Research*, 41(2), 2350017 (27 pages). https://doi.org/10.1080/24725854.2023.2183532
5. Yu, M., Xu, J., & Tang, J. (2024). Managing Customer Contact Centers with Delay Announcements and Automated Service. *IISE Transactions*, 56(2), 115-127. https://doi.org/10.1080/24725854.2023.2183532
6. Yavuz, A., Celik, N., Xu, J., & Chen, C.-H. (2023). A Sequential Sampling-based Particle Swarm Optimization to Control Droop Coefficients of Distributed Generation Units in Microgrid Clusters. *Electric Power Systems Research*, 216, 109704. https://doi.org/10.1016/j.epsr.2022.109074.
7. Wang, T., Xu, J., Hu, J.-Q., & Chen, C.-H. (2023). Efficient Estimation of a Risk Measure Requiring Two-Stage Simulation Optimization. *European Journal of Operational Research*, 305, pp. 1355-1365. https://doi.org/10.1016/j.ejor.2022.06.028.
8. Goodwin, T., Xu, J., Celik, N., & Chen, C.-H. (2022). Real-time Digital Twin-based Optimization with Predictive Simulation Learning. *Journal of Simulation*. https://doi.org/10.1080/17477778.2022.2046520.
9. Perry, M., Xu, J., Huang, E., & Chen, C.-H. (2022). Robust Sampling Budget Allocation Under Deep Uncertainty. *IEEE Transactions on Systems, Man and Cybernetics: Systems*, 52(10), pp. 6339-6347. https://doi.org/10.1109/TSMC.2022.3144363.
10. Li, Y., Fu, M. C., & Xu, J. (2022). An Optimal Computing Budget Allocation Tree Policy for Monte Carlo Tree Search. *IEEE Transactions on Automatic Control*, 67(6), pp. 2685-2699. https://doi.org/10.1109/TAC.2021.3088792.
11. Wang, T., Xu, J., Hu, J.-Q., & Chen C.-H. (2021). Optimal Computing Budget Allocation for Regression with Gradient Information. *Automatica*, 134, p.109927. https://doi.org/10.1016/j.automatica.2021.109927.
12. Zhou, C., Xu, J., Miller-Hooks, E., Zhou, W., Chen, C.-H., Lee, L.-H., Chew, E.-P., & Li, H. (2021). Analytics with digital-twinning: A decision support system for maintaining a resilient port. *Decision Support Systems*, 143, p.113496. DOI: 10.1016/j.dss.2021.113496.

13. Wang, T., Xu, J., & Hu, J.-Q. (2021). A Study on Efficient Computing Budget Allocation for a Two-Stage Problem. *Asia-Pacific Journal of Operational Research*, 38(2), p.2050044.
14. Xu, J., Yao, R., & Qiu, F. (2021). Mitigating Cascading Outages in Severe Weather Using Simulation-based Optimization. *IEEE Transactions on Power Systems*, 36(1), pp.204-213.
15. Zhang, F., Song, J., Dai, Y., & Xu, J. (2020). Semiconductor wafer fabrication production planning using multi-fidelity simulation optimisation. *International Journal of Production Research*, 58(21), pp.6585-6600.
16. Peng, Y., Song, J., Xu, J., & Chong, E.K. (2020). Stochastic Control Framework for Determining Feasible Alternatives in Sampling Allocation. *IEEE Transactions on Automatic Control*, 65(6), pp. 2647-2653.
17. Pedrielli, G., Selcuk Candan, K., Chen, X., Mathesen, L., Inanalouganji, A., Xu, J., Chen, C.H., & Lee, L.H. (2019). Generalized Ordinal Learning Framework (GOLF) for Decision Making with Future Simulated Data. *Asia-Pacific Journal of Operational Research*, 36(06), p.1940011.
18. Peng, Y., Xu, J., Lee, L.H., Hu, J., & Chen, C.H. (2019). Efficient Simulation Sampling Allocation Using Multi-fidelity Models. *IEEE Transactions on Automatic Control*, *64*(8), pp.3156-3169.
19. Peng, Y., Huang, E., Xu, J., Shi, Z., & Chen, C.H. (2019). A Coordinate Optimization Approach for Concurrent Design. *IEEE Transactions on Automatic Control*, *64*(7), pp.2913-2920.
20. Song, J., Qiu, Y., Xu, J., & Yang, F. (2019). Multi-fidelity sampling for efficient simulation-based decision making in manufacturing management. *IISE Transactions*, *51*(7), pp.792-805. **Honorable Mention for the Best Paper in the 2020 IISE Transactions Focus Issue on Design and Manufacturing from all papers published from July 1, 2019 through June 30, 2020, issues 51:7 through 52:6**.
21. Guharay, S., Chang, K.C., & Xu, J. (2017). Robust Estimation of Value-at-Risk through Distribution-Free and Parametric Approaches Using the Joint Severity and Frequency Model: Applications in Financial, Actuarial, and Natural Calamities Domains. *Risks*, *5*(3), 41.
22. Zhang, S., Xu, J., Lee, L.H., Chew, E.P., Wong, W.P., & Chen, C.H. (2016). Optimal computing budget allocation for particle swarm optimization in stochastic optimization. *IEEE Transactions on Evolutionary Computation*, *21*(2), pp.206-219.
23. Xu, J., Huang, E., Hsieh, L., Lee, L.H., Jia, Q.S., & Chen, C.H. (2016). Simulation optimization in the era of Industrial 4.0 and the Industrial Internet. *Journal of Simulation*, *10*(4), pp.310-320. **Feature Article, Tocher Medal for the best publication in 2015, 2016.**
24. Taghiyeh, S., & Xu, J. (2016). A new particle swarm optimization algorithm for noisy optimization problems. *Swarm Intelligence*, *10*(3), pp.161-192.
25. Zhu, C., Xu, J., Chen, C.H., Lee, L.H., & Hu, J.Q. (2016). Balancing search and estimation in random search based stochastic simulation optimization. *IEEE Transactions on Automatic control*, *61*(11), pp.3593-3598.
26. Liu, L., Xu, J., Yu, H., Li, L., & Qiao, C. (2016). VMSA: a performance preserving online VM splitting and placement algorithm in dynamic cloud environments. *The Journal of Supercomputing*, *72*(8), pp.3169-3193.

27. Xu, J., Zhang, S., Huang, E., Chen, C.H., Lee, L.H., & Celik, N. (2016). MO^{2}TOS: Multi-fidelity optimization with ordinal transformation and optimal sampling. *Asia-Pacific Journal of Operational Research*, *33*(03), p.1650017.
28. Li, M., Yang, F., Uzsoy, R., & Xu, J. (2016). A metamodel-based Monte Carlo simulation approach for responsive production planning of manufacturing systems. *Journal of Manufacturing Systems*, *38*, pp.114-133.
29. Zhang, S., Lee, L.H., Chew, E.P., Xu, J., & Chen, C.H. (2015). A simulation budget allocation procedure for enhancing the efficiency of optimal subset selection. *IEEE Transactions on Automatic Control*, *61*(1), pp.62-75.
30. Xu, J., Huang, E., Chen, C.H., & Lee, L.H. (2015). Simulation optimization: A review and exploration in the new era of cloud computing and big data. *Asia-Pacific Journal of Operational Research*, *32*(03), p.1550019.
31. Huang, E., Xu, J., Zhang, S., & Chen, C.H. (2015). Multi-fidelity model integration for engineering design. *Procedia Computer Science*, *44*, pp.336-344.
32. Xu, J., Vidyashankar, A., & Nielsen, M.K. (2014). Drug resistance or re-emergence? Simulating equine parasites. *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, *24*(4), pp.1-23.
33. Brantley, M.W., Lee, L.H., Chen, C.H., & Xu, J. (2014). An efficient simulation budget allocation method incorporating regression for partitioned domains. *Automatica*, *50*(5), pp.1391-1400.
34. Xu, J., Nelson, B.L., & Hong, L.J. (2013). An adaptive hyperbox algorithm for high-dimensional discrete optimization via simulation problems. *INFORMS Journal on Computing*, *25*(1), pp.133-146.
35. Malthouse, E.C., Qiu, D., & Xu, J. (2012). Optimal selection of media vehicles using customer databases. *Expert systems with applications*, *39*(17), pp.13035-13045.
36. Xu, R., Xu, J., & Wunsch, D.C. (2012). A comparison study of validity indices on swarm-intelligence-based clustering. *IEEE Transactions on Systems, Man, and Cybernetics, Part B (Cybernetics)*, *42*(4), pp.1243-1256.
37. Hong, L.J., Nelson, B.L., & Xu, J. (2010). Speeding up COMPASS for high-dimensional discrete optimization via simulation. *Operations Research Letters*, *38*(6), pp.550-555.
38. Xu, J., Nelson, B.L., & Hong, J.L. (2010). Industrial strength COMPASS: A comprehensive algorithm and software for optimization via simulation. *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, 20(1), pp.1-29.
39. Subramanian, D., Huang, P., Pulavarthi, C., Xu, J., Sekhar, H., Zhan, S., Tripathi, S., & Kumar, S. (2010). Risk-adjusted approach to optimize investments in product development portfolios. *IBM Journal of Research and Development*, 54(3), p9.
40. Xu, R., Xu, J., & Wunsch II, D.C. (2009). MicroRNA expression profile based cancer classification using Default ARTMAP. *Neural Networks*, *22*(5-6), pp.774-780.
41. Xiao, S., Zeng, Q., Wang, J., Xu, J., & Wang, Y. (2003). Realization of multiwavelength label optical packet switching. *IEEE Photonics technology letters*, *15*(4), pp.605-607.

CONFERENCE PROCEEDINGS

1. Donnelly, O., Xu, J., Shortle, J., & Sherry, L. (2025, June). AI in the Air: Application of AI for Generating Flight Tracks for Collision Risk Analysis. In *10th International Engineering Systems Symposium (CESUN25)* (pp. 1-4).
2. Yue, Z., Fu, M. C., El-Amine, H., Xu, J., & Chen, C. H. (2024, December). A Kidney Paired Donation Program Simulation. In *2024 Winter Simulation Conference (WSC)* (pp. 1011-1022). IEEE.
3. Fu, M.C., Qiu, D., & Xu, J. (2024, December). A Tutorial for Monte Carlo Tree Search. In *2024 Winter Simulation Conference*. IEEE.
4. Qiu, D., & Xu, J. (2023, December). Optimal Computing Budget Allocation for Monte Carlo Tree Search in Othello. In *2023 Winter Simulation Conference (WSC)* (pp. 1-2). IEEE.
5. Goodwin, T., Xu, J., Celik, N., & Chen, C.-H. (2023, December). Epsilon Optimal Sampling. In *2023 Winter Simulation Conference (WSC)* (pp. 3412-3423). IEEE.
6. Ezici, B., Costa, P., & Xu, J. (2022, May). Workflow Modeling, & Simulation Analysis for Semiconductor Wafer Fab Manufacturing. In *Proceedings of the IISE Annual Conference & Expo* (pp. 1-6).
7. Goodwin, T., Xu, J., Chen, C.-H., & Celik, N. (2021, August). Efficient Simulation Optimization with Simulation Learning. In *2021 IEEE 17th International Conference on Automation Science and Engineering (CASE)* (pp. 2268-2273). IEEE.
8. Yavuz, A., Darville, J., Celik, N., Xu, J., Chen, C.H., Langhals, B., & Engle, R. (2020, December). Advancing self-healing capabilities in interconnected microgrids via dynamic data driven applications system with relational database management. In *2020 Winter Simulation Conference (WSC)* (pp. 2030-2041). IEEE.
9. Wang, H., Shen, H., Liu, Q., Zheng, K., & Xu, J. (2020, August). A Reinforcement Learning Based System for Minimizing Cloud Storage Service Cost. In *49th International Conference on Parallel Processing-ICPP* (pp. 1-10). (78 out of 269 submissions).
10. Li, Y., Fu, M., & Xu, J. (2019, December). Monte Carlo tree search with optimal computing budget allocation. In *2019 IEEE 58th Conference on Decision and Control (CDC)* (pp. 6332-6337). IEEE.
11. Zhu, C., Shen, H., & Xu, J. (2019, July). An Economic Analysis of Cloud Computing Service Using Reclaimed Resources. In *2019 IEEE 12th International Conference on Cloud Computing (CLOUD)* (pp. 50-57). IEEE.
12. Peng, Y., Song, J., Xu, J., & Chong, E. (2018, August). Dynamic Sampling for Feasibility Determination. In *2018 IEEE 14th International Conference on Automation Science and Engineering (CASE)* (pp. 887-892). IEEE.
13. Guharay, S., Chang, K.C., & Xu, J. (2018, July). Estimation of Value-at-Risk Using Mixture Copula Model for Heavy-Tailed Operational Risk Losses in Financial, Insurance & Climatological Data. In *2018 21st International Conference on Information Fusion (FUSION)* (pp. 2330-2337). IEEE.
14. Peng, Y., Huang, E., Xu, J., & Chen, C.H. (2017, August). An optimization approach for team coordination through information sharing. In *2017 13th IEEE Conference on Automation Science and Engineering (CASE)* (pp. 282-287). IEEE.
15. Guharay, S., Chang, K.C., & Xu, J. (2017, July). Flexible estimation of risk metric using copula model for the joint severity-frequency loss framework. In *2017 20th International Conference on*

Information Fusion (Fusion) (pp. 1-6). IEEE.

16. Rosen, S., Salemi, P., Wickham, B., Williams, A., Harvey, C., Catlett, E., Taghiyeh, S., & Xu, J. (2016, December). Parallel empirical stochastic branch and bound for large-scale discrete optimization via simulation. In *2016 Winter Simulation Conference (WSC)* (pp. 626-637). IEEE.
17. Fujimoto, R.M., Celik, N., Damgacioglu, H., Hunter, M., Jin, D., Son, Y.J., & Xu, J. (2016, December). Dynamic data driven application systems for smart cities and urban infrastructures. In *2016 Winter Simulation Conference (WSC)* (pp. 1143-1157). IEEE.
18. Zhang, S., Xu, J., Huang, E., & Chen, C.H. (2016, August). A new optimal sampling rule for multi-fidelity optimization via ordinal transformation. In *2016 IEEE International Conference on Automation Science and Engineering (CASE)* (pp. 670-674). IEEE.
19. Guharay, S., Chang, K.C., & Xu, J. (2016, July). Robust estimation of value-at-risk through correlated frequency and severity model. In *2016 19th International Conference on Information Fusion (FUSION)* (pp. 995-1002). IEEE.
20. Koohi, A., Homayoun, H., Xu, J., & Orooji, M. (2016, February). Co-clustering of diseases, genes, and drugs for identification of their related gene modules. In *2016 Eighth International Conference on Advanced Computational Intelligence (ICACI)* (pp. 407-411). IEEE.
21. Zhang, S., Xu, J., Huang, E., Chen, C.H., & Gao, S. (2016, March). Improving ordinal transformation through optimal combination of multi-model predictions. In *2016 IEEE International Conference on Industrial Technology (ICIT)* (pp. 1545-1549). IEEE.
22. Xu, J., & Zhu, C. (2015, September). Optimal pricing and capacity planning of a new economy cloud computing service class. In *2015 International Conference on Cloud and Autonomic Computing* (pp. 149-157). IEEE.
23. Vidyashankar, A.N., & Xu, J. (2015, December). Stochastic optimization using Hellinger distance. In *2015 Winter Simulation Conference (WSC)* (pp. 3702-3713). IEEE.
24. Chen, R., Xu, J., Zhang, S., Chen, C.H. and Lee, L.H. (2015, August). An effective learning procedure for multi-fidelity simulation optimization with ordinal transformation. In *2015 IEEE International Conference on Automation Science and Engineering (CASE)* (pp. 702-707). IEEE.
25. Liu, L., Xu, J., Yu, H., & Wei, X. (2015, June). Joint admission control and provisioning for virtual machines. In *2015 IEEE International Conference on Communications (ICC)* (pp. 332-337). IEEE.
26. Xu, J., Zhang, S., Huang, E., Chen, C.H., Lee, L.H., & Celik, N. (2014, December). Efficient multi-fidelity simulation optimization. In *Proceedings of the 2014 winter simulation conference* (pp. 3940-3951).
27. Li, M., Yang, F., & Xu, J. (2014, December). A metamodeling-based approach for production planning. In *Proceedings of the Winter Simulation Conference 2014* (pp. 2204-2215). IEEE.
28. Xu, J., Zhang, S., Huang, E., Chen, C.H., Lee, L.H., & Celik, N. (2014, August). An ordinal transformation framework for multi-fidelity simulation optimization. In *2014 IEEE International Conference on Automation Science and Engineering (CASE)* (pp. 385-390). IEEE.
29. Liu, L., Xu, J., Yu, H., Li, L., & Qiao, C. (2014, June). A novel performance preserving VM Splitting and Assignment Scheme. In *2014 IEEE International Conference on Communications (ICC)* (pp. 4215-4220). IEEE.
30. Zhu, C., Xu, J., Chen, C.H., Lee, L.H., & Hu, J. (2013, December). Determining the optimal sampling

set size for random search. In *2013 Winter Simulations Conference (WSC)* (pp. 1016-1024). IEEE.
31. Vidyashankar, A.N., & Xu, J. (2013, December). Adaptive nested rare event simulation algorithms. In *2013 Winter Simulations Conference (WSC)* (pp. 736-744). IEEE.
32. Collamore, J.F., Vidyashankar, A.N., & Xu, J. (2013, December). Rare event simulation for stochastic fixed point equations related to the smoothing transformation. In *2013 Winter Simulations Conference (WSC)* (pp. 555-563). IEEE.
33. Xu, J. (2012, December). Efficient discrete optimization via simulation using stochastic kriging. In *Proceedings of the 2012 Winter Simulation Conference (WSC)* (pp. 466-477). IEEE.
34. Xu, R., Xu, J., & Wunsch, D.C. (2010, July). Clustering with differential evolution particle swarm optimization. In *IEEE Congress on Evolutionary Computation* (pp. 1-8). IEEE.
35. Huang, P., Subramanian, D., & Xu, J. (2010, December). An importance sampling method for portfolio CVaR estimation with Gaussian copula models. In *Proceedings of the 2010 Winter Simulation Conference* (pp. 2790-2800). IEEE.
36. Xu, R., Xu, J., & Wunsch, D.C. (2009, June). Using default ARTMAP for cancer classification with MicroRNA expression signatures. In *2009 International Joint Conference on Neural Networks* (pp. 3398-3404). IEEE.
37. Xu, J., & Yang, X. (2001, January). An Evolutionary Programming Approach for Traffic Grooming in WDM Rings. In *8th International Conference on Neural Information Processing (ICONIP 2001)* (pp. 567-572).
38. Xu, J., Zeng, Q., Wang, Y., & Yang, X. (2001, October). Traffic grooming in interconnected multigranularity WDM SDH/SONET rings. In *Optical Networking* (Vol. 4585, pp. 253-264). International Society for Optics and Photonics.
39. Xu, J., & Zeng, Q. (2001, October). Reducing electronic multiplexing in WDM rings: An evolutionary approach. In *2001 International Conferences on Info-Tech and Info-Net. Proceedings (Cat. No. 01EX479)* (Vol. 2, pp. 168-173). IEEE.
40. Xu, J., & Zeng, Q. (2001, October). Quantifying the benefits of traffic grooming in interconnected WDM rings using a two-stage multiplexing scheme. In *Fiber Optic Components, Subsystems, and Systems for Telecommunications* (Vol. 4604, pp. 80-85). International Society for Optics and Photonics.
41. Wang, Y., Zeng, Q., Xu, J., Yang, X., & Jiang, C. (2001, October). Unified control plane scheme for IP over WDM. In *Optical Networking* (Vol. 4585, pp. 265-271). International Society for Optics and Photonics.
42. Liu, F., Zeng, Q., Xiao, S., Zhu, X., & Xu, J. (2001, October). Optical network management with OSC. In *Fiber Optic Components, Subsystems, and Systems for Telecommunications* (Vol. 4604, pp. 195-200). International Society for Optics and Photonics.

TECHNICAL REPORTS

1. Xu, J., W. J. Hopp, B. L. Nelson. The impact of production/distribution system structure on product line proliferation strategies.
2. Nagaraj, K., J. Xu, S. Ghosh., & Pasupathy, R. Efficient estimation in the tails of Gaussian copulas. arXiv:1607.01375.

BOOK AND BOOK CHAPTER

1. Xu, J. (2023). Simulation Optimization: Multi-fidelity Optimization. In: Pardalos, P.M., Prokopyev, O.A. (eds) Encyclopedia of Optimization. Springer, Cham. https://doi.org/10.1007/978-3-030-54621-2_832-1.
2. Xu, J. (2022). Simulation optimization: Discrete Optimization via Simulation. In *Encyclopedia of Optimization*, 3rd edition, Panos M. Pardalos, Oleg A. Prokopyev (Eds.). Springer, New York, NY.
3. Xu, J. (2017). Model calibration. In *Advances in Modeling and Simulation* (pp. 27-46). Springer, New York, NY.
4. Hong, L.J., Nelson, B.L., & Xu, J. (2015). Discrete optimization via simulation. In *Handbook of simulation optimization* (pp. 9-44). Springer, New York, NY.
5. Xu, J., & Wu, Q. (2009). Supply Chain Science. Chinese translation of *Supply Chain Science* by W.J. Hopp (McGraw Hill Higher Education, 2007). China Machine Press, Beijing, China.

PATENT

1. Huang, P., Subramanian, D., Ghosh, S., & Xu, J. (2013). Fast and Accurate Method for Estimating Portfolio CVaR Risk. US 8355976 B2.

SPONSORED RESEARCH

1. Collaborative Research: FDT-BioTech: Advancing Mathematical and Statistical Foundations to Enhance Human Digital Twin of Neurophysiological Modeling and Uncertainty Quantification, National Science Foundation, DMS-2436217, 01/01/2025-12/31/2027, $249,971. **J. Xu** (PI), M. Liu.
2. SCC-IRG Track 1: Community-Responsive Electrified and Adaptive Transit Ecosystem (CREATE): Planning, Operations, and Management, National Science Foundation, CMMI-2411248, 07/01/2024-06/30/2028, $1,500,000. **J. Xu** (PI), R. Ji, W. Ji, J. Li, F. Zhang.
3. Artificial Intelligence and Advanced Analytics to Estimate Collision Risk during Departure and Arrival, University of Maryland/Federal Aviation Administration, 09/01/2022-08/30/2027, $1,446,365. L. Sherry (PI), J. Shortle, **J. Xu**.
4. SAI-R: Strengthening American Electricity Infrastructure for an Electric Vehicle Future: An Energy Justice Approach, National Science Foundation, SBE-2228603, 09/15/2022-09/14/2025, $749,999, **J. Xu** (PI), W. Ji, F. Zhang, S. Siddiki.
5. Graph-based Cyber Attack Detection and Mitigation in Power Grids, 4-VA, 07/01/2022-06/30/2023, $5,000, W. Ji (PI), **J. Xu**.
6. Large-scale Simulation-based Optimization and Machine Learning for Resilient Power Grid, UChicago Argonne LLC/Department of Energy, No. 1F-60250, 11/01/2020-10/31/2023, $43,008, **J. Xu** (PI).
7. Towards Self-healing Resilient Microgrids Using DDDAS, Air Force Office of Scientific Research (Sub-award from the University of Miami), FA9550-19-1-0383, $246,057 (GMU share), 08/01/2019-08/14/20222, **J. Xu** (PI), C.-H. Chen.
8. Collaborative Research: Improving Power Grids Weather Resilience through Model-free Dimension Reduction and Stochastic Search for Optimal Hardening, National Science Foundation, DMS-

1923145, 08/01/2019-07/31/2022, $72,508, **J. Xu** (PI).

9. A Reinforcement Learning Based System for Minimizing Cloud Storage Service Cost, AWS Machine Learning Research Awards program, 08/01/2019-07/31/2020, $15,000 (in AWS Promotional Credits), H. Shen (PI), **J. Xu.**
10. Simulation-based Optimization for Optimal Power Line Hardening, UChicago Argonne LLC/Department of Energy, No. 9F-60157, 05/01/2019-07/31/2020, $40,571, **J. Xu** (PI).
11. Using Economics Theory to Improving Cloud Resource Utilization with Application Performance Guarantee, 4-VA Research Grant, 07/01/2018-06/30/2019, $35,000, H. Shen (University of Virginia, PI), **J. Xu**.
12. Increasing Power Grids Resilience to Weather via Optimal Power Line Hardening, Jeffress Trust Awards Program in Interdisciplinary Research, 09/30/2017-06/29/2019, $100,000. **J. Xu** (PI).
13. Research on modeling and optimization of inventory systems with serial correlated demands, National Natural Science Foundation of China, 71601169, 01/01/2017-12/31/2019, RMB 216,000 ($32,091). C. Zhu (PI), **J. Xu**, X. Bai, L. Deng.
14. EAGER-Dynamic Data: A New Scalable Paradigm for Optimal Resource Allocation in Dynamic Data Systems via Multi-Scale and Multi-Fidelity Simulation and Optimization, jointly funded by the National Science Foundation and the Air Force Office of Scientific Research, ECCS-1462409, 09/01/2015-08/31/2018, $249,364. **J. Xu** (PI), K.-C. Chang, C.-H. Chen, E. Huang.
15. Meta-analysis of phase I dose-finding early phase clinical trials to better estimate the Maximum Tolerated Dose, National Cancer Institute, France, 09/01/2015-08/31/2018, € 128, 752 ($145,306). S. Zohar (PI), A. Vidyashankar, **J. Xu**.
16. Improving Search Efficiency in Engineering Design by Integrating Multiple Models at Different Fidelities, National Science Foundation, CMMI-1462787, 05/01/2015-04/30/2018, $459,066. E. Huang (PI), **J. Xu**, C.-H. Chen.
17. Context-Based Decisions with Multi-Entity Decision Graphs, Office of Naval Research, N00014-14-1-0507 MOD #: A00001, 05/01/2014-08/31/2014, $20,000. P. Costa (PI), K. B. Laskey, and **J. Xu**.
18. Scalable Optimization via Simulation in a High-Performance Computing Environment, George Mason University Summer Research Funding, 05/16/2014-08/31/2014, $4,500. **J. Xu** (PI).
19. Revenue Management in the Cloud, Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities, 07/01/2013-12/31/2014, $10,000. **J. Xu** (PI).
20. Reliability Design for Multi-Tenant-Oriented Virtual Data Centers, National Natural Science Foundation of China, 07/01/2013-12/31/2016, RMB 850,000 ($137,000). H. Yu (PI), **J. Xu**, K. Yan.
21. Stochastic Simulation Optimization: An Optimized Approach, National Science Foundation, CMMI-1233376, 09/15/2012-08/31/2016, $260,000. C.-H. Chen (PI), **J. Xu**, and R. Ganesan.
22. Efficient Convergent Optimization-via-Simulation Algorithms, George Mason University Summer Research Funding, 05/16/2012-08/31/2012, $4,900. **J. Xu** (PI).

SELECTED AWARDS AND HONORS

1. Second place honorable mention in the Optimization and Decision-Making track at the IISE Dissertation Pitch Competition, "Real Time Digital-twin Based Optimization with Predictive Simulation Learning," presented by doctoral student Travis, Goodwin, May 2022, Seattle, WA.

2. Honorable Mention for the Best Paper in the 2020 IISE Transactions Focus Issue on Design and Manufacturing from all papers published from July 1, 2019 through June 30, 2020, issues 51:7 through 52:6, (2021).
3. The Operational Research Society's Tocher Medal for the best paper published in the Journal of Simulation in 2015 and 2016 (2017).
4. Jeffress Trust Awards Program in Interdisciplinary Research, (2017).
5. Finalist, best conference paper award competition, IEEE Conference on Automation Science and Engineering (2017).
6. Outstanding Reviewer Award for IEEE Transactions on Automatic Control (2016).
7. Outstanding Reviewer Award for IEEE Transactions on Automatic Control (2015).
8. Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities (2013).
9. Team excellence award Q3&Q4, for research and development work on next generation revenue management system, Continuous Improvement & Enterprise Optimization, United Airlines (2010).
10. Best overall paper award, IEEE World Congress on Computational Intelligence (2010).
11. George L. Nemhauser Dissertation Prize, IEMS Department, Northwestern University (2010).
12. Arthur P. Hurter Award for Outstanding Academic Excellence among First Year Graduate Students, IEMS Department, Northwestern University (2005).
13. Royal E. Cabell Fellowship, Northwestern University (2004-2005).
14. President Fellowship, State University of New York at Buffalo (2002-2004).
15. Yuan Fang Fellowship, Shanghai Jiaotong University (2001).
16. Alcatel Fellowship, Shanghai Jiaotong University (2000).
17. Nanjing University Outstanding Graduate Award, Nanjing University (1999).
18. Nanjing University First Class Scholarship, Nanjing University (1996-1998).
19. Nanjing University President Scholarship, Nanjing University (1995).

INVITED TALKS

- Understanding Energy Burden in New England Households, INFORMS Annual Meeting, Seattle, WA, October 2024.
- A Robust Optimal Sampling Policy for Ranking and Selection, INFORMS Simulation Society Research Workshop, Hong Kong, June 2024.
- Energy Justice Implication of Large-Scale Electric Vehicle Adoption: A New England Case Study, INFORMS Annual Meeting, Phoenix, AZ, October 2023.
- Exploring a Symbiosis of Simulation and Artificial Intelligence: Initial Efforts in Simulation Optimization, Department of Systems and Industrial Engineering, University of Arizona, Tucson, AZ, September 2023.
- Real-time Digital Twin-based Optimization with Proactive Simulation Learning, INFORMS Annual Meeting, Indianapolis, IN, October 2022.
- Towards Self-healing Resilient Microgrids using DDDAS, virtual AFOSR DDIP program review, September 2021.
- Efficient Simulation Optimization with Simulation Learning, virtual INFORMS Simulation Society Workshop, June 2021.

- Efficient Multi-fidelity Sampling for Optimization of Complex Systems, virtual IISE Annual Conference & Expo, May 2021.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of Industrial and Management Systems Engineering, University of South Florida, March 2021.
- Optimal Sampling Budget Allocation for Dynamic Data Driven Applications Systems, virtual INFORMS Annual Meeting, November 2020.
- Criticality-based Optimal Hardening of Power Lines for Improved Power Grid Weather Resilience, virtual NSF Algorithms for Modern Power Systems workshop, November 2020.
- Optimal Computing Budget Allocation with Sensitivity Information, virtual Spring Simulation Conference, May 2020.
- Statistical Ranking of Criticality of Power Lines for Hardening for Improved Power Grid Weather Resilience, Center for Energy, Environmental, and Economic Systems Analysis, Argonne National Lab, Lemont, IL, March 2020.
- Monte Carlo Tree Search with Optimal Computing Budget Allocation, Canadian Mathematical Society Winter Meeting, Toronto, Canada, December 2019.
- A Simulation-based Optimization Approach to Improve Power Grid Weather Resilience, INFORMS Annual Meeting, Seattle, WA, October 2019.
- Monte Carlo Tree Search with Optimal Computing Budget Allocation, Department of Mathematics and Statistics, York University, Toronto, Canada, August 2019.
- Exploiting Digital Twinning Capabilities for Port Resilience Evaluation, 9th International Conference on Logistics and Maritime Systems, Singapore, August 2019.
- Optimal Computing Budget Allocation with Sensitivity Information, Pre-Workshop 9th International Conference on Logistics and Maritime Systems, Singapore, August 2019.
- Assimilating weather and outage data for power system hardening against natural disasters, IEEE Power and Energy Society General Meeting, Atlanta, GA, August 2019.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of Industrial Engineering and Management, Shanghai Jiaotong University, Shanghai, China, July 2019.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of Management Science and Engineering, Tongji University, Shanghai, China, July 2019.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of Mechanical Engineering, Politecnico di Milano, Milano, Italy, May 2019.
- Multi-fidelity Sampling for Efficient Simulation-based Decision Making in Manufacturing Management, IISE Annual Conference, Orlando, FL, May 2019.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of Industrial Engineering and Management Systems, University of Central Florida, Orlando, VA, April 2019.
- Efficient Simulation Sampling Using Multi-fidelity Models, East Coast Optimization Meeting, Fairfax, VA, April 2019.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of Statistics and Operations Research, Virginia Common Wealth University, Richmond, VA, October 2018.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of

Mathematics, George Mason University, Fairfax, VA, October 2018.

- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Peking University, Beijing, China, June 2018.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Department of Computer Science, Virginia Tech, Falls Church, VA, October 2017.
- Efficient Stochastic Simulation Optimization Algorithms and Their Applications, Northwest Polytechnic University, Xi An, China, August 2017.
- Concurrent Engineering: An Optimization Approach for Team Coordination and Information Sharing, Beijing Institute of Technology, Beijing, China, July 2017.
- Efficient Sampling Allocation Using Multi-Fidelity Information in Simulation Optimization, SIAM Conference on Computational Science and Engineering, Atlanta, GA, March 2017.
- Panelist for "Dynamic Data Driven Application Systems For Smart Cities And Urban Infrastructures," Winter Simulation Conference, Arlington, VA, December 2016.
- Parallel Empirical Stochastic Branch and bound for Large-scale Discrete Optimization via Simulation, Winter Simulation Conference, Arlington, VA, December 2016.
- Efficient Multi-fidelity Decision Making For Dynamic Data Driven Application Systems. Invited talk, INFORMS Annual Meeting, Nashville, TN, November 2016
- Stochastic Optimization Using Hellinger Distance. Invited seminar, George Washington University, Washington, DC, October 2016.
- Stochastic Optimization Using Hellinger Distance. Invited seminar, University of Electronic Science and Technology of China, Chengdu, China, August 2016.
- Efficient Simulation Optimization under Uncertainty via Multi-fidelity Modeling and Analysis. Invited seminar, Sichuan University, Chengdu, China, August 2016.
- Efficient Simulation Optimization under Uncertainty via Multi-fidelity Modeling and Analysis. Invited seminar, Computational Analysis and Design Branch, Naval Surface Warfare Center, Carderock Division, West Bethesda, June 2016.
- Efficient Optimization via Multi-fidelity Simulation. Invited seminar, INSEAD, Fontainebleau, France, March 2016.
- Stochastic Optimization using Hellinger Distance. Invited seminar, School of Management and Economics Beijing Institute of Technology, Beijing, China, December 2015.
- Stochastic Optimization using Hellinger Distance. 2015 Winter Simulation Conference, Huntington Beach, CA, December 2015.
- A New Framework for Multi-fidelity Simulation Optimization. 2015. Invited presentation, INFORMS Simulation Society (I-SIM) Workshop: At the Interface of Simulation and Optimization, Purdue University, West Lafayette, IN, July 2015.
- Towards Industrial Strength Simulation-Based Optimization: Parallelization and Data-Driven Distributional Robustness. Invited seminar, MITRE Corporation, McLean, VA, May 2015.
- Multi-fidelity Optimization with Ordinal Transformation & Optimal Sampling. 14th INFORMS Computing Society Conference, Richmond, VA, January 2015.

- Towards Industrial Strength Discrete Optimization via Simulation: Multi-Fidelity Optimization and Data-Driven Robustness. Invited seminar, Argonne National Lab, Argonne, IL, November 2014.
- Data-Driven Decision Making: A Disparity based Robust Approach. Invited INFORMS Washington D.C. chapter seminar, Arlington, VA, October 2014.
- Data-Driven Decision Making: A Disparity based Robust Approach. Invited seminar, Department of Statistics, George Mason University, Fairfax, VA, September 2014.
- MO^{2}TOS: Multi-fidelity Optimization via Ordinal Transformation and Optimal Sampling. Invited seminar, SAS Institute, Cary, NC, April 2014.
- Industrial Strength Theory and Algorithms for Discrete Optimization via Simulation. Invited seminar, SAS Institute, Cary, NC, October 2012.
- Non-uniform Sampling Distribution for Discrete Optimization via Simulation. INFORMS Annual Meeting, Charlotte, NC, November 2011.
- Industrial Strength Discrete Optimization via Simulation Algorithms for High-Dimensional Problems. SAS Institute, Cary, NC, August 2010.
- Industrial Strength Discrete Optimization via Simulation Algorithms. ExxonMobil Upstream Research Company, Houston, TX, January 2009.

CONTRIBUTED CONFERENCE PRESENTATIONS

- Optimal Computing Budget Allocation for Monte Carlo Tree Search in Othello. 2023 Winter Simulation Conference, San Antonio, TX, December 2023.
- Epsilon optimal sampling, 2023 Winter Simulation Conference, San Antonio, TX, December 2023.
- Improving Power Grids Weather Resilience through Model-free Dimension Reduction and Stochastic Search for Optimal Hardening, NSF AMPS program PI workshop, Fairfax, VA, October 2023.
- Explainable Machine Learning to Improve Donor-Recipient Matching at Time of Heart Transplant. International Society for Heart and Lung Transplantation, Denver, CO, April 2023.
- A multi-fidelity model based on simulation optimization for semiconductor wafer fabrication production. IEEE Conference on Automation Science and Engineering, Vancouver, Canada, August 2019.
- A Structured Approach for Parallel Simulation Optimization Implementation. INFORMS Annual Meeting, Houston, TX, October 2017.
- Concurrent Engineering: An Optimization Approach for Team Coordination and Information Sharing, IEEE Conference on Automation Science and Engineering, Xi An, China, August 2017.
- Parallel Empirical Stochastic Branch & Bound for Runway Capacity Optimization. 2016 INFORMS Annual Meeting, Nashville, TN, November 2016.
- Parallel Empirical Stochastic Branch & Bound. 2015 INFORMS Annual Meeting, Philadelphia, PA, November 2015.
- Efficient Optimization via Multi-fidelity Simulation. 2015 INFORMS Annual Meeting, Philadelphia, PA, November 2015.
- Optimal Pricing and Capacity Planning of a New Economy Cloud Computing Service Class. 2015

IEEE International Conference on Cloud and Autonomic Computing (ICCAC) Cambridge, MA, September, 2015

- Data-driven Decision Making: A Disparity-based Robust Approach. 14th INFORMS Computing Society Conference, Richmond, VA, January 2015.
- Multi-fidelity Optimization with Ordinal Transformation & Optimal Sampling. 2014 Winter Simulation Conference, Savannah, GA, December 2014.
- Multi-fidelity Optimization with Ordinal Transformation & Optimal Sampling. INFORMS 2014 Annual Meeting, San Francisco, CA, November 2014.
- Determining the Optimal Sampling Set Size for Random Search. 2013 Winter Simulation Conference, Washington, D.C., December 2013.
- Efficient Discrete Optimization via Simulation Using Stochastic Kriging. 2012 Winter Simulation Conference, Berlin, Germany, December 2012.
- A Statistical Model Based Simulation Study of the Re-emergence of *S. vulgaris* in Horse Farms Adopting Selective Therapy. INFORMS annual meeting, Phoenix, AZ, October 2012.
- Nested Rare Event Simulation. INFORMS annual meeting, Phoenix, AZ, October 2012.
- Simulation Optimization using Adaptive Hyperbox in High Dimensions. INFORMS annual meeting, San Diego, CA, October 2009.
- Joint Product Line and Supply Chain Design. INFORMS annual meeting, Washington D.C., October 2008.
- Algorithm for Variance Reduction in Conditional Value-at-Risk Estimation using Importance Sampling for Stochastic Optimization. IBM TJ Watson Research Center, Yorktown Heights, NY, September 2008**.**
- Industrial Strength COMPASS: A Comprehensive Algorithm and Software for Optimization via Simulation. INFORMS annual meeting, Pittsburgh, PA, November 2006.

TEACHING EXPERIENCE

- George Mason University
  - OR 750: Simulation-Based Optimization, Fall 2014.
  - OR 735: Advanced Stochastic Simulation, Fall 2018.
  - OR 635: Discrete Event System Simulation, Fall 2011-2020.
  - OR/SYST 335: Discrete Event System Simulation, Spring 2012-2020.
  - OR/SYST 568 Applied Predictive Analytics, Spring 2016, Fall 2017, Spring 2018, Fall 2019, Summer 2020, Fall 2020.
  - SYST/OR 499: Applied Predictive Analytics, Spring 2017.
  - SYST 468: Applied Predictive Analytics, Spring 2020.
- Northwestern University
  - IEMS 201: Introduction to Statistics. Spring 2009.

ADVISEES AND THESIS COMMITTEE

- **Supervision of Ph.D. students**
    - Travis Goodwin, Ph.D, Systems Engineering & Operations Research, April 2023. Dissertation title: Real-Time Digital Twin Based Optimization with Predictive Simulation Learning.
    - Sabyasachi Guharay, Ph.D., Systems Engineering & Operations Research, July 2016. Dissertation title: New Methodological and Empirical Investigations in Quantitative Modern Operational Risk Management. Co-advised with Prof. K.-C. Chang.
    - Xin Cao, Ph.D., Statistics, July 2015. Dissertation title: Inference for Age-Dependent Branching Process and Their Applications. Co-advised with Prof. A. N. Vidyashankar.
- **Supervision of Post-doctoral Scholars**
    - Yijie Peng, post-doctoral fellow, 2016-2017. Co-supervised with Prof. Chun-Hung Chen.
    - Si Zhang, post-doctoral fellow, 2013-2016. Co-supervised with Prof. Chun-Hung Chen.
- **Ph.D. dissertation committee member**
    1. Hasitha de Silva, "Large deviations and rare event simulation for portfolio credit risk," Department of Mathematics, George Mason University, Summer 2016.
    2. Huangxin Wang, "Effective and Economical Moving Target Defense for Secure Cloud Computing," Department of Computer Science, George Mason University, Spring 2017.
    3. Jeronymo Carvalho, "Collaborative Mobile Ad Hoc Intrusion Detection System," Department of Systems Engineering & Operations Research, George Mason University, Spring 2017.
    4. Ryan J. O'Neil, "Exact Methods for Solving Single-Vehicle Pickup and Delivery Problems in Real Time," Department of Systems Engineering & Operations Research, George Mason University, Fall 2018.
    5. Guanqi Liu, "Improving Traffic Operations under Incidents Using Large-scale Traffic Simulations and Simulation-based Optimization Methods," Department of Civil, Environment, and Infrastructure Engineering, George Mason University, Spring 2019.
    6. Monireh Dabaghchian, "Security and Intelligence Measure in Online Machine Learning-Based Dynamic Spectrum Sharing Networks," Department of Electrical and Computer Engineering, George Mason University, Summer 2019.
    7. Gautam Trivedi, "Optimization of Node and Link Connectivity for Resiliency in Wireless Multi-Hop Networks," Department of Electrical and Computer Engineering, George Mason University, Fall 2019.
    8. Steve Darcey, "Knowledge Driven Data Collection Using Line of Sight Evidential Reasoning," Department of Systems Engineering & Operations Research, George Mason University, Spring 2020.
    9. Michael Perry, "Applied Game Theory: Computational Techniques to Operationalize

Complex Games", Department of Systems Engineering & Operations Research, George Mason University, Fall 2021.

10. Mahendra Panagoda, "Convergence Analysis and Bilevel Optimization Algorithms for Matrix Completion Problems," Department of Mathematics, George Mason University, Summer 2021.
11. Zhengyi Ye, "Gas Sensor Fusion for Intelligent Electronic Nose", Department of Electrical and Computer Engineering, George Mason University, Fall 2021.
12. Kim Mceligot, Department of Systems Engineering & Operations Research.
13. Sheta Dixit, PhD student, Civil, Environment, and Infrastructure Engineering.
14. Wenjie Li, Department of Civil, Infrastructure and Environmental Engineering, George Mason University, May 2023
15. James Cameron, PhD student, Department of Statistics, George Mason University, May 2023.
16. Busra Ezici, "Modeling and Assessing the Cyber Risk of Data Collection and Storage Technologies in Semiconductor Manufacturing," Department of Systems Engineering & Operations Research, George Mason University, expected 2023.
17. Weiwei Zhou, "Computationally Efficient Equalizer Design," Department of Electrical and Computer Engineering, George Mason University, expected Summer 2014.

- **Supervision of Visiting Doctoral Students**
  - Chenbo Zhu, 2012-2013. Ph.D. student, School of Management, Fudan University, Shanghai, China. Co-advised with Prof. Chun-Hung Chen. Now Assistant Professor, College of Economics and Management, Zhejiang University of Science and Technology, China.
  - Ruidi Chen, 2013-2015. Ph.D. student, School of Management, Fudan University, Shanghai, China. Co-advised with Prof. Chun-Hung Chen. Now Ph.D. student, Division of Systems Engineering, Boston University.
  - Hongrui Chu, 2015-2016. Adviser. Ph.D. student, School of Management, Beijing Institute of Technology. Now post-doctoral fellow, Tsinghua University, Beijing, China.
  - Yanfeng Wu, 2016-2017. Co-advised with Prof. Chun-Hung Chen. Ph.D. student, School of Management, Fudan University, Shanghai, China.
  - Tianxiang Wang, 2019. Co-advised with Prof. Chun-Hung Chen. Ph.D. student, School of Management, Fudan University, Shanghai, China.
- **Supervision of MS student**
  - Sajjad Taghiyeh, MS, SEOR, 2016. Now a doctoral student at the Edward P. Fitts Department of Industrial & Systems Engineering, North Carolina State University.
- **Supervision of undergraduate students research**
  - Craig Ferris (Computer Science), optimal power line hardening, Spring 2017 – Spring 2019.
  - Trevor Novak (Computer Science), optimal power line hardening, Fall 2017.

- Michael C. Collins (Mathematics), multi-fidelity simulation optimization, Fall 2015.

PROFESSIONAL SOCIETY MEMBERSHIP & SERVICE ACTIVITIES

- IEEE Senior Member
- INFORMS Senior Member
- Associate Editor, ACM Transactions on Modelling and Simulation, 2024 – present.
- Associate Editor, IISE Transactions, 2021 – present.
- Associate Editor, Journal of Simulation, 2017 – present.
- Associate Editor, Asia-Pacific Journal of Operational Research, 2014 – present.
- 2025 INFORMS International Meeting, general co-chair.
- 2025, 2024, 2023 Winter Simulation Conference Digital Twin Track co-chair
- 2022 Winter Simulation Conference Publicity Committee co-chair, General Poster Session co-chair
- 2022 INFORMS Annual Meeting, Simulation cluster chair, 2021-2022.
- Program committee member, 2022 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (SIGSIM-PADS'22), 2021-2022.
- 2021 INFORMS Annual Meeting, Simulation cluster chair, 2020-2021.
- INFORMS Simulation Society Vice-President / President Elect (elected), 2020-2022.
- Program committee member, ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (SIGSIM-PADS'21), 2020-2021.
- INFORMS 2020 Annual Meeting Arrangement co-chair, 2019-2020.
- INFORMS Simulation Society Treasurer (elected), 2018-2020.
- INFORMS Simulation Society Council Member (elected), 2018-2020.
- INFORMS Simulation Society Recruiting and Retention of Members Committee member, 2012-2014.
- Guest Editor, Special Issue on "Simulation-Optimization in Manufacturing & Services," Flexible Service and Manufacturing Journal, 2017–2019.
- Track Co-Chair, Simulation Optimization, Winter Simulation Conference 2018.
- Travel Scholarship Committee, Winter Simulation Conference 2018.
- Track Co-Chair, Simulation Optimization, Winter Simulation Conference 2017.
- Track Co-Chair, Simulation Optimization, Winter Simulation Conference 2016.
- Best Paper Award Committee member, Winter Simulation Conference 2015.
- Track Co-Chair, Big Data Simulation and Decision Making, Winter Simulation Conference 2015.
- Associate Communications Editor, INFORMS Simulation Society (I-Sim), 2014-2018.
- INFORMS Simulation Society Recruiting and Retention of Members Committee member (2012-2014).
- Associate Editor (AE) for the Conference Editorial Board for the tenth annual IEEE International

Conference on Automation Science and Engineering (IEEE CASE 2014).

- Track Co-Chair, General Poster Session, Winter Simulation Conference 2013, 2014.
- Technical Program Committee member, Simulation Optimization and Analysis Methodology tracks, Winter Simulation Conference, 2013, 2014, 2015, 2016.
- Track Co-Chair, Modelling & Simulation track, Industrial & Systems Engineering Research Conference (ISERC), May 2013.
- Session chair, Parallel Simulation Optimization, INFORMS Annual Meeting, Houston, TX, 2017.
- Session chairs: INFORMS Annual Meeting 2011-2016, 2009, 2008.
- Invited proposal reviewer for
    1. Hong Kong Research Council, 2017-2021.
    2. Jeffress Trust Awards Program in Interdisciplinary Research, 2019.
    3. Reviewer for the Department of Homeland Security's Office of University Programs for proposals submitted to funding opportunities from the MSI STEM Research & Development Consortium (MSRDC), 2019.
    4. Dynamic Data Driven Applications Systems program, Air Force Office of Scientific Research (AFOSR), 2016.
    5. National Science Foundation Engineering Directorate, CISE Directorate, MPS Directorate.
- Reviewer for
    1. ACM Transactions on Modeling and Computer Simulation
    2. ACM Transactions on Internet Technology
    3. Annals of Operations Research
    4. Artificial Intelligence in Medicine
    5. Automatica
    6. Automation in Construction
    7. BMC Systems Biology
    8. Computer and Industrial Engineering
    9. Discrete Event Dynamic Systems
    10. Engineering Optimization
    11. European Journal of Operational Research
    12. INFORMS Journal on Computing
    13. IEEE Transactions on Automatic Control
    14. IEEE Transactions on Automation Science and Engineering
    15. IEEE Transactions on Engineering Management
    16. IEEE Transactions on Evolutionary Computation
    17. IEEE Transactions on Parallel and Distributed Systems
    18. IEEE Transactions on Systems, Man, and Cybernetics, Part B

19. IEEE Transactions on Systems, Man, and Cybernetics: Systems
20. IISE Transactions
21. International Journal of Production Research,
22. Journal of Simulation
23. Journal of the Operational Research Society
24. Management Science
25. Naval Research Logistics
26. Operations Research
27. Production and Operations Management
28. PLOS ONE
29. Reliability Engineering and System Safety, Mathematics
30. Simulation Modelling Practice and Theory
31. Simulation: Transactions of the Society for Modelling and Simulation International,
32. Statistical Analysis and Data Mining
33. The American Statistician
34. Transportation Research Part B
35. Transportation Science

- Book proposals reviewer for CRC Press (3), Cambridge University Press (1).
- IEEE Senior Member.

UNIVERSITY SERVICE ACTIVITIES

- SEOR graduate studies committee chair, AY 2019-2025.
- CEIE faculty search committee member, AY2021.
- Steering committee for SoC/IDIA Inter-disciplinary Computing Research Symposium, Fall 2021.
- Statistics P&T committee member, AY2021.
- SEOR graduate curriculum committee chair, AY2020.
- Network cluster hire proposal committee member, AY2020.
- DAEN term faculty search committee member, AY2019.
- Statistics faculty search committee member, AY2019.
- SEOR representative, VSE graduate studies committee, AY 2019.
- VSE representative, George Mason University Graduate Council, AY 2019.
- VSE Promotion and Tenure, AY2018.
- SEOR Data Analytics Engineering term faculty search committee chair, AY2017.
- SEOR MS Data Analytics Engineering committee chair, AY2017, 2018.
- SEOR ad hoc appeals committee, AY2017.

- Volgenau School of Engineering Research Council member, AY2017.
- CEIE faculty search committee member, AY2016.
- SEOR faculty search committee member (data analytics), AY2016.
- SEOR graduate curriculum committee, special focus on MS Data Analytics Engineering, AY2016.
- SEOR graduate program assessment committee (MS-OR), AY2016.
- SEOR computing committee chair, AY 2012-AY2018.
- SEOR undergraduate committee member, AY 2013-AY2015.
- SEOR department colloquium committee chair, AY 2011.
- SEOR undergraduate and graduate student academic advising, 2011–present.
- SEOR undergraduate students recruiting and orientation events, 2011–present.

HIGHLIGHTS OF INDUSTRIAL WORK EXPERIENCE

United Airlines 06/2009-08/2011

Senior Analyst, Finance-Operations Research Chicago, IL

- Developed new forecasting and optimization algorithms for next generation revenue management system and evaluated different designs via simulation analysis.
- Developed important components of a network revenue management simulator and model calibration, validation, and analysis procedures.
- Performed thorough experimental evaluations of new revenue management models and algorithms. Provided recommendation on the efficacy, robustness, and computational efficiency of each model under various demand scenarios.

IBM T.J. Watson Research Center 06/2008-09/2008

Intern, Business Analytics and Mathematical Sciences Yorktown Heights, NY

- Designed an importance sampling method (U.S. patent) to reduce the variance of a simulation based CVaR estimator for risk management of new product development.
- Implemented a sampling procedure to make draws from a random vector with any specified marginal distributions and correlation structure.

United Airlines 06/2007-10/2007

Intern, Enterprise Optimization Elk Grove Village, IL

- Developed a forecasting model calibration procedure to enhance a market level discrete choice model and reduced calibration time by order of magnitudes.

IBM China Research Lab 06/2005-09/2005

Business optimization intern Beijing, China

- Designed and implemented an optimization algorithm for logistics network redesign.