Contents

1 Personal Data

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2 Professional Experience

08/2022–Present	Associate Professor, School of Computing & Augmented Intelligence, Arizona State University.
08/2016–07/2022	Assistant Professor, School of Computing & Augmented Intelligence, Arizona State University.
12/2013–07/2016	Post-Doc at National University of Singapore, Industrial Engineering Department
01/2013–12/2013	Post-Doc for Politecnico di Milano & National Research Council, Milan, ITALY
01/2010–01/2013	PhD student, Mechanical Engineering, Politecnico di Milano, Milan, ITALY. Adviser: Professor Andrea Matta.
08/2011–01/2013	Visiting PhD student, IEOR, University of California at Berkeley, Berkeley, USA. Adviser: Professor Lee W. Schruben

3 Publications, Intellectual Property, and Presentations

3.1 Journal Publications

(J1) **Chotalyia, S.**(70%,*), **Khandait, T.**(+), Pedrielli, G.(+) 2026. Conjunctive Bayesian Optimization (conBO): An application to Cyber-Physical Systems Verification with Conjunctive Requirements. Accepted for Publication ACM Transactions on Cyber-Physical Systems.

(J2) Wang, H.(+), Zhang, E.(+), Ng, S.H.(+,*) and Pedrielli, G.(+), 2025. A model aggregation approach for high-dimensional large-scale optimization. European Journal of Operational Research.

(J3) Aghaei, A.(60%), Pedrielli, G. (+,*), Wu, T.(+), O'Neill, Z., Becerik-Gerber, B., Hoque, S. and Wen, J., 2025, July. Understanding the role of artificial intelligence in improving human well-being within the built environment. In Building Simulation (Vol. 18, No. 7, pp. 1727-1742). Beijing: Tsinghua University Press.

(J4) ***Malu, M.***(60%,*), Dow, D., Sharma, P., Cottam, A., Binggeli, M., Dasarathy, G.(+), Pedrielli, G. (+) and Spanias, A.(+), 2025. High dimensional Bayesian optimization for circuit design. Intelligent Decision Technologies, 19(3), pp.1271-1282.

(J5) Yang, Q.(60%), Chang, X.(+), Lee, J.Y.(+), Wisniewski, H.(+), **Zhou, Y.**(+), Bernstein, A.D.(+), Bonder, E.M.(+), Kaelber, J.T.(+), Wu, T.(+), Pedrielli, G.(+) and Zhang, F.(*,+), 2025. Angle-controllable RNA tiles for programable array assembly and RNA sensing. Nature communications, 16(1), p.3728.

(J6) **Zhou, Y.** (60%), Pedrielli, G. (20%, *), Zhang, F. (10%) and Wu, T. (10%), 2024. Predicting RNA sequence-structure likelihood via structure-aware deep learning. BMC bioinformatics, 25(1), p.316.

(J7) Kiatsupaibul, S. (+), Pedrielli, G.(*,+), Ryan, C.T.(+), Smith, R.L. (+) and Zabinsky, Z.B.(+), 2024. Monte Carlo fictitious play for finding pure Nash equilibria in identical interest games. INFORMS Journal on Optimization, 6(3-4), pp.155-172.

(J8) Pedrielli(*,+), G., **Khandait, T.**(+), **Cao, Y.**(+), **Thibeault, Q.**(+), Huang, H., Castillo-Effen, M. and Fainekos, G., 2023. Part-x: A family of stochastic algorithms for search-based test generation with probabilistic guarantees. IEEE transactions on automation science and engineering, 21(3), pp.4504-4525.

(J9) Sivasubramanian, C.K.(*,+), Dodge, R., **Ramani, A.**, Bayba, D., Janakiram, M., Butcher, E., Gonzales, J. and Pedrielli, G. (+), 2023. DTFab: A digital twin based approach for optimal reticle management in semiconductor photolithography. Journal of Systems Science and Systems Engineering, pp.1-32.

(J10) **Azad, F.T.**(*,+), Dodge, R.W. (+), Varghese, A.M. (+), Lee, J., Pedrielli, G. (+), Candan, K.S. (+) and Chowell-Puente, G. (+), 2022. Sirtem: Spatially informed rapid testing for epidemic modeling and response to covid-19. ACM Transactions on Spatial Algorithms and Systems, 8(4), pp.1-43.

(J11) Boyle, E. (∗, +), **Inanlouganji, A.** (+), Carvalhaes, T. (+), Jevtić, P. (+), Pedrielli, G. (+), Reddy, A. (+). 2022. Social Vulnerability and Power Network Loss: A Case Study of Puerto Rico. International Journal of Disaster Risk Reduction, 82, p.103357.

(J12) Awada, M. (∗, ∞, +), White, E. (+), Becerik-Gerber, B. (+), Hoque, S. (+), O'Neill, Z. (+), Pedrielli, G. (+), Wen, J. (+), Wu, T. (+). 2022. "Occupant health in buildings: Impact of the COVID-19 pandemic on the opinions of building professionals and implications on research." Building and Environment 207 (2022): 108440.

(J13) Pang, Z.(+), Becerik-Gerber, B.(+), Hoque, S.(+), O'Neill, Z.(+), Pedrielli, G.(+), Wen, J.(+) and Wu, T.(+), 2021. How work from home has affected the occupant's well-being in the residential built environment: an international survey amid the COVID-19 pandemic. Journal of Engineering for Sustainable Buildings and Cities, 2(4), p.041003.

(J14) **Inanlouganji, A.** (50%), Pedrielli, G. (*,40%), Reddy. A.T. (5%), Tormos-Apponte, F. (5%). 2021. Approximate Stochastic Dynamic Programming for Real-Time Disaster Recovery of Electric Power Networks Under Failure Uncertainty. Submitted to Transportation Research Part E. Accepted for publication.

(J15) **Liu, M.** (30%), Pedrielli, G. (*,30%), Sulč, P. (10%), Poppleton, E. (10%), Bertsekas, D.(20%). 2021. A New Roll-Out Approach to RNA Folding. Submitted to INFORMS JoC. Accepted for publication.

(J16) Awada, M. (*,∞,+), Becerik-Gerber, B. (+), Hoque, S. (+), O'Neill, Z. (+), Pedrielli, G. (+), Wen, J. (+), Wu, T. (+). 2021. Ten questions concerning occupant health in buildings during normal operations and extreme events including the COVID-19 pandemic. Building and Environment. 2021 Jan 15;188:107480.

(J17) **Mathesen, L.** (50%), Pedrielli, G. (*,40%), Ng S.H. (5%), Zabinsky, Z. (5%). 2021. Stochastic optimization with adaptive restart: A framework for integrated local and global learning. Journal of Global Optimization, 79(1), pp.87-110.

(J18) **Kang Y.** (*,+), **Mathesen, L.** (+), Pedrielli, G. (+), and Ju F. (+). 2020. Multi-Fidelity Modeling for Analysis and Optimization of Serial Production Lines. IEEE Transactions on Automatic Control.

(J19) Pedrielli, G. (*,30%), Sun, H. (30%), Ho, C. (20%), Pan, R. (20%). 2020. Cyber coordinated simulation for distributed multi-stage additive manufacturing systems. Journal of Manufacturing Systems, 57, pp.61-71.

(J20) Pedrielli, G. (*,70%), and Ng, S. H. (30%). 2020. An extended Two-Stage Sequential Optimization approach: Properties and performance. European Journal of Operational Research, 287(3), pp.929-945.

(J21) Zhao, Q. (*, +), Zhou, C.(+), and Pedrielli, G. (+). 2020. A Decision Support System for Data-Driven Driver-Experience Augmented Vehicle Routing Problem. Asia-Pacific Journal of Operational Research, 37(05), p.2050018.

(J22) Pedrielli, G. (*,+), Candan, K.S. (+), Xu, J. (+), Chen, C.-H. (+), Lee, L.H. (+), **Chen, X.** (+), **Mathesen, L.** (+), and **Inanlouganji, A** (+). 2019. Generalized Ordinal Learning Framework (GOLF) for Decision Making with Future Simulated Data. Asia-Pacific Journal of Operational Research, 36(06), p.1940011.

(J23) Pedrielli, G. (*,30%), Liu, Y. (∞,30%), Li, H. (10%), Lee, L.H. (5%), Chen, C.H. (5%), Shortle, J. (20%). 2019. Optimal Computing Budget Allocation for Stochastic N–k Problem in the Power Grid

System. IEEE Transactions on Reliability, 68(3), pp.778-789.

(J24) Pedrielli, G. (*,30%), Xing, Y. (∞,30%), Peh, J.H. (∞,90%), and Ng, S.H. (10%). 2019. A real time simulation optimization framework for vessel collision avoidance and the case of singapore strait. IEEE Transactions on Intelligent Transportation Systems, 21(3), pp.1204-1215.

(J25) Zhu, Y. (∞,40%), Pedrielli, G. (*,50%), and Lee L.H.(10%). 2019. Optimal computing budget allocation and time dilation for simulation optimization of manufacturing systems. IISE Transactions, 51(3), pp.219-231.

(J26) Pedrielli, G. (*,80%), Matta, A. (10%), Alfieri, A. (10%) and Zhang, M. (∞,5%). 2018. Design and control of manufacturing systems: a discrete event optimization methodology. International Journal of Production Research, 56(1-2), pp.543-564. Invited Publication.

(J27) Pedrielli, G. (*,35%), Hongtao, C. (∞,35%), Ng, S.H. (10%), Kister, T. (10%) and Bressan, S. (10%). 2017. A Framework for Real-Time Monitoring of Energy Efficiency of marine vessels. Energy, 145, 246-260.

(J28) Li, J. (20%), Liu, W. (*,∞,30%), Pedrielli, G. (30%), Lee, L.H. (10%), and Chew, E.P. (10%). 2017. Optimal computing budget allocation to select the nondominated systems—A large deviations perspective. IEEE Transactions on Automatic Control, 63(9), pp.2913-2927.

(J29) Li, H. (*,40%), Pedrielli, G. (40%), Lee, L.H. (10%), and Chew, E.P. (10%). 2017. Enhancement of supply chain resilience through inter-echelon information sharing. Flexible Services and Manufacturing Journal, 29(2), pp.260-285.

(J30) Li, H. (*,+), and Pedrielli, G. (+). 2016. Shipment policy optimisation in a return supply chain for online retailers via stochastic discrete event simulation. International Journal of Simulation and Process Modelling, 11(3-4), pp.241-258.

(J31) Pedrielli, G. (*,80%), Lee, L. H. (10%), and Ng, S. H. (10%) 2015. Optimal bunkering contract in a buyer–seller supply chain under price and consumption uncertainty. Transportation Research Part E: Logistics and Transportation Review, 77, 77-94.

(J32) Pedrielli, G. (*,80%), Alfieri, A. (10%), and Matta, A. (10%), 2015. Integrated simulation–optimisation of pull control systems. International Journal of Production Research, 53(14), pp.4317-4336.

(J33) Alfieri, A. (10%), Matta, A. (10%), and Pedrielli, G. (*,80%), 2015. Mathematical programming models for joint simulation–optimization applied to closed queueing networks. Annals of Operations Research, 231(1), pp.105-127.

(J34) Gagliardo, S. (*,+), Giannini, F. (+), Monti, M. (+), Pedrielli, G. (+), Terkaj, W. (+), Sacco, M. (+), Ghellere, M. (+), and Salamone, F. (+). 2015. An ontology-based framework for sustainable factories. Computer-Aided Design and Applications, 12(2), pp.198-207.

(J35) Pedrielli, G. (*,80%), Sacco, M. (5%), Terkaj, W. (10%), Tolio, T. (5%). 2012. An HLA-based distributed simulation for networked manufacturing systems analysis. Journal of Simulation, Vol. 6, Number 4, pp. 237-252.

3.2 Refereed Conference Papers

(C1) **Bai, H.**, Chen, G., Ying, W., Wang, X., Gong, N., Dong, S., Pedrielli, G., Wang, H., Chen, H. and Fu, Y., 2026, March. Brownian Bridge Augmented Surrogate Simulation and Injection Planning for Geological CO2 Storage. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 40, No. 17, pp. 14459-14466).

(C2) Dodge, R. (60%,*), **Eyde, Z.** (+) and Pedrielli, G. (+), 2025, December. Modular Python Library for Simulations of Semiconductor Assembly and Test Process Equipment. In 2025 Winter Simulation Conference (WSC) (pp. 1676-1687). IEEE.

(C3) Biswas, P. (#,70%,*), Pedrielli, G. (+) and Candan, K.S. (+), 2025, December. PySIRTEM: An Efficient Modular Simulation Platform for The Analysis of Pandemic Scenarios. In 2025 Winter Simulation Conference (WSC) (pp. 2147-2158). IEEE.

(C4) Pan, R. (+,*), Sun, H. (+), Chen, X. (+), Pedrielli, G. (+) and Huang, J. (+), 2025, November. Human Digital Twin, Precision Healthcare, Health Monitoring, Anomaly Detection, Statistical and Machine Learning Models. In 2025 IEEE International Conference on Data Mining Workshops (ICDMW) (pp. 1-6). IEEE.

(C5) Farahmand, E. (50%,*), Azghan, R.R.(+), Chatrudi, N.T. (+), Kim, E. (+), Gudur, G.K. (+), Thomaz, E. (+), Pedrielli, G. (+), Turaga, P. (+) and Ghasemzadeh, H. (+), 2025, July. Attengluco: Multimodal transformer-based blood glucose forecasting on ai-readi dataset. In 2025 47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) (pp. 1-7). IEEE.

(C6) Abou-Mrad, C. (∞,40%), **Khandait, T.** (40%), Pedrielli, G. (10%), and Abbas, H. (10%), 2025, May. Falsification and Control of CPS using the Language Set of Discrete-Time Temporal Logic. In Proceedings of the ACM/IEEE 16th International Conference on Cyber-Physical Systems (with CPS-IoT Week 2025) (pp. 1-10).

(C7) Shukla, E. (70%,*), **Thibeault, Q.** (20%) and Pedrielli, G. (10%), 2025, May. A gray box approach for Large Language Model-guided Natural Language to Temporal Logic Automatic Translation. In Proceedings of the ACM/IEEE 16th International Conference on Cyber-Physical Systems (with CPS-IoT Week 2025) (pp. 1-2).

(C8) Nambiraja, S.S. (70%,*) and Pedrielli, G. (30%), 2024, December. Multi Agent Rollout for Bayesian Optimization. In 2024 Winter Simulation Conference (WSC) (pp. 3518-3529). IEEE.

(C9) Morey, D.F. (∞,60%), Pedrielli, G. (+) and Zabinsky, Z.B. (+), 2024, December. A Hybrid Approach Combining Simulation and a Queueing Model for Optimizing a Biomanufacturing System. In 2024 Winter Simulation Conference (WSC) (pp. 1130-1138). IEEE.

(C10) **Khandait, T.** (70%,*) and Pedrielli, G. (30%), 2024, October. HyperPart-X: Probabilistic Guarantees for Parameter Mining of Signal Temporal Logic Formulas in Cyber-Physical Systems. In International Conference on Runtime Verification (pp. 89-106). Cham: Springer Nature Switzerland.

(C11) **Malu, M.** (60%, *), Pedrielli, G. (20%), Dasarathy, G. (15%) and Spanias, A. (5%), 2024, June. ClassBO: Bayesian Optimization for Heterogeneous Functions. In International Conference on Learning and Intelligent Optimization (pp. 249-253). Cham: Springer Nature Switzerland.

(C12) **Jiang, M.M.** (50%,*), **Khandait, T.** (10%) and Pedrielli, G. (40%), 2023, December. CGPT: A Conditional Gaussian Process Tree for Grey-Box Bayesian Optimization. In 2023 Winter Simulation Conference (WSC) (pp. 564-575). IEEE.

(C13) **Dodge, R.** (70%,*), Pedrielli, G. (25%) and Jevtič, P. (5%), 2023, December. A testing based approach for security analysis of smart semiconductor systems. In Proceedings Winter Simulation Conference. IEEE.

(C14) **Thibeault, Q.** (+,*), **Khandait, T.** (+), Pedrielli, G. (+) and Fainekos, G. (+), 2023, August. Search based testing for code coverage and falsification in cyber-physical systems. In 2023 IEEE 19th International Conference on Automation Science and Engineering (CASE) (pp. 1-8). IEEE.

(C15) Sharma, V. (∞,+), Pan, R. (+) and Pedrielli, G. (+), 2023, August. A Physics-Informed Neural Network Modeling Approach to Direct Ink Writing 3D Printing Process. In 2023 IEEE 19th International Conference on Automation Science and Engineering (CASE) (pp. 1-7). IEEE.

(C16) **Malu, M.** (60%, *), Pedrielli, G. (20%), Dasarathy, G. (15%) and Spanias, A. (5%), 2023, June. Class GP: Gaussian process modeling for heterogeneous functions. In International Conference on Learning and Intelligent Optimization (pp. 408-423). Cham: Springer International Publishing.

(C17) **Khandait, T.**(+,*), Chandratre, A. (+), Baptista, W. (+), Pedrielli, G. (+) and Fainekos, G. (+), 2023, May. Demo Abstract: Analysing CPS Security with Falsification on the Microsoft Flight Simulator. In Proceedings of the 26th ACM International Conference on Hybrid Systems: Computation and Control (pp. 1-2).

(C18) Chandratre, A. (+,*), Hernandez Acosta, T. (+), **Khandait, T.** (+), Pedrielli, G. (+) and Fainekos, G. (+), 2023, May. Stealthy attacks formalized as STL formulas for Falsification of CPS Security. In Proceedings of the 26th ACM International Conference on Hybrid Systems: Computation and Control (pp. 1-8).

(C19) Huang, H. (*,+), Maneekul, P. (∞,+), Morey, D.F. (∞,+), Zabinsky, Z.B. (+) and Pedrielli, G. (+), 2022, December. A computational study of probabilistic branch and bound with multilevel importance sampling. In 2022 Winter Simulation Conference (WSC) (pp. 3251-3262). IEEE.

(C20) **Jiang, M.** (60%), Pedrielli, G. (*, 35%), and Ng, S.H. (5%), 2022, December. Gaussian processes for high-dimensional, large data sets: a review. In 2022 winter simulation conference (WSC) (pp. 49-60). IEEE.

(C21) Pedrielli, G. (*,+), Huang, H. (+), and Zabinsky, Z.B. (+), 2021, August. Using Gaussian Processes to Automate Probabilistic Branch & Bound for Global Optimization. In 2021 IEEE 17th International Conference on Automation Science and Engineering (CASE) (pp. 2276-2281). IEEE.

(C22) **Thibeault, Q.**(*,70%), Anderson, J. (5%), Chandratre, A. (5%), Pedrielli, G. (+), and Fainekos, G. (+), 2021, August. Psy-taliro: A python toolbox for search-based test generation for cyber-physical systems. In International Conference on Formal Methods for Industrial Critical Systems (pp. 223-231). Cham: Springer International Publishing.

(C23) **Liu, M.** (*,40%), **Cao, Y.** (30%), Pedrielli, G. (30%). 2021. Partitioning and Gaussian processes for Accelerating Sampling in Monte Carlo Tree Search for Continuous Decisions. Submitted to 2021 INFORMS Winter Simulation Conference. Accepted.

(C24) **Cao, Y.** (40%), **Thibeault, Q.** (10%), **Chandratre, A.** (10%), Fainekos, G. (10%), and Pedrielli, G. (*,30%) 2021. Part-X: A Family of Stochastic Algorithms for Search-Based Test Generation with Probabilistic Guarantees. Submitted to 2021 EMSOFT. Accepted as Extended Abstract -work in progress-).

(C25) Pedrielli, G. (*,+), Huang, H. (+), and Zabinsky, Z.B. (+). 2021. Using Gaussian Processes to Automate Probabilistic Branch & Bound for Global Optimization. Submitted to 2021 IEEE CASE, Accepted.

(C26) **Mathesen, L.** (*,50%), Pedrielli, G. (30%), Fainekos, G. (20%). 2021. Efficient Optimization-Based Falsification of Cyber-Physical Systems with Multiple Conjunctive Requirements. Submitted to 2021 IEEE CASE. Accepted. Finalist Best Conference Paper Award.

(C27) Ernst, G. (+), Arcaini, P. (+), Bennani, I. (+), Donze, A. (+), Fainekos, G. (+), Frehse, G. (+), **Mathesen, L.** (+), Menghi, C. (+), Pedrielli, G. (+), Pouzet, M. (+), and **Yaghoubi, S.** (+). 2020. ARCH-COMP 2020 Category Report: Falsification. EPiC Series in Computing.

(C28) Xuereb, M. (*,∞,+), Pedrielli, G. (+), and Ng, S.H. (+). The Stochastic Gaussian Process model averaging for High Dimensional Statistical Learning. 2020. In Proceedings of 2020 Virtual INFORMS Winter Simulation Conference. *In Press.*

(C29) **Carvalhaes, T.** (*,+), **Inanlouganji, A.** (+), **Boyle, E.** (+), Jevtič, P. (+), Pedrielli, G. (+), and Reddy, A. (+). 2020, August. A Simulation Framework for Service Loss of Power Networks under Extreme Weather Events: A Case of Puerto Rico. In 2020 IEEE 16th International Conference on Automation Science and Engineering (CASE) (pp. 1532-1537). IEEE.

(C30) **Mathesen, L.** (*,+), **Li, X.** (+), Pedrielli, G. (+), Kandan, K.S. (+). 2019. Global Optimization of High-Dimensional Problems via parallel decomposed Bayesian Optimization. Accepted for Publication 2019 Winter Simulation Conference.

(C31) **Mathesen, L.** (+), **Yaghoubi, S.** (+), Pedrielli, G. (+), and Fainekos, G. (+). 2019, August. Falsification of cyber-physical systems with robustness uncertainty quantification through stochastic optimization with adaptive restart. In 2019 IEEE 15th International Conference on Automation Science and Engineering (CASE) (pp. 991-997). IEEE.

(C32) Zhang, M. (*,∞,+), Matta, A. (+), Alfieri, A. (+), and Pedrielli, G. (+). 2019, December. Feasibility Cut Generation by Simulation: Server Allocation in Serial–Parallel Manufacturing Systems. In 2019 Winter Simulation Conference (WSC) (pp. 3633-3644). IEEE.

(C33) Zabinsky, Z.B. (*,+), Pedrielli, G. (+), and Huang, H. (+). 2019, September. A Framework for Multi-fidelity Modeling in Global Optimization Approaches. In International Conference on Machine Learning, Optimization, and Data Science (pp. 335-346). Springer, Cham.

(C34) Pedrielli, G. (*,+), and Barton, R.R. (+). 2019, December. Metamodel-based quantile estimation for hedging control of manufacturing systems. In 2019 Winter Simulation Conference (WSC) (pp. 452-463). IEEE. Invited Paper.

(C35) **Hekmatnejad, M.** (*,+), Pedrielli, G. (+), and Fainekos, G. (+). 2019, August. Task Scheduling with Nonlinear Costs using SMT Solvers. In 2019 IEEE 15th International Conference on Automation Science and Engineering (CASE) (pp. 183-188). IEEE.

(C36) **Chen, X.** (*,+), **Mathesen, L.** (+), Pedrielli, G. (+), and Candan, K.S. (+). 2019, November. Complicacy-Guided Parameter Space Sampling for Knowledge Discovery with Limited Simulation Budgets. In 2019 IEEE International Conference on Big Knowledge (ICBK) (pp. 50-57). IEEE.

(C37) Ernst, G. (*,+), Arcaini, P. (+), Donze, A. (+), Fainekos, G. (+), **Mathesen, L.** (+), Pedrielli, G. (+), **Yaghoubi, S.** (+), Yamagata, Y. (+), and Zhang, Z. (+). 2019, May. ARCH-COMP 2019 Category Report: Falsification. In ARCH@ CPSIoTWeek (pp. 129-140).

(C38) Tsai, Y.A. (*,+), Perego, R. (+), Pedrielli, G. (+), Zabinsky, Z.B. (+), Candelieri, A. (+), Huang, H. (+), **Mathesen, L.** (+). Stochastic Optimization for Feasibility Determination: an Application to Water Pump Operation in Water Distribution Network. Accepted for publication in 2018 INFORMS-WSC Conference, Gethenborg, Sweden.

(C39) **Inanlouganji, A.** (*,+), Pedrielli, G. (+), Fainekos, G. (+), Pokutta, S. (+). 2018. Continuous Simulation-Optimization with Model Mismatch Using Gaussian Process Regression. Accepted for publication in 2018 INFORMS-WSC Conference, Gethenborg, Sweden.

(C40) Zhang, M. (*,∞,+), Matta, A. (+), Alfieri, A. (+), Pedrielli, G. (+). 2018. Simulation-based Benders Cuts: a New Cutting Approach to Approximately Solve Simulation-optimization Problems. Accepted for publication in 2018 INFORMS-WSC Conference, Gethenborg, Sweden.

(C41) Sun, H. (+), Pedrielli, G. (*,+), Zhao, G. (+), Bragagnolo, A. (+), Zhou, C. (+), Pan, R. (+), Xu, W. (+). 2018. Cyber Coordinated Simulation Models for Multi-Stage Additive Manufacturing of Energy Products. In Proceedings of the 2018 IEEE-CASE Conference, Munich, Germany.

(C42) Pedrielli, G. (*,+), Ju, F. (+). 2018. Simulation-Predictive Control for Manufacturing Systems. In Proceedings of the 2018 IEEE-CASE Conference, Munich, Germany.

(C43) **Mathesen, L.** (*,+), Pedrielli, G. (+), and Ng, S.H. (+). Trust region based stochastic optimization with adaptive restart: A family of global optimization algorithms. In Proceedings of Winter Simulation Conference (WSC), 2017 Winter, pp. 2104-2115. IEEE, 2017.

(C44) **Kang, Y.** (*,+), **Mathesen, L.** (+), Pedrielli, G. (+), Ju, F. (+). 2017. Multi-Fidelity Modeling for Analysis of Serial Production Lines. In Proceedings of the 2017 IEEE-CASE Conference, Xi-An, China. Finalist for best student paper award.

(C45) Zhang, M. (∞,*,+), Matta, A. (+), and Pedrielli, G. (+). 2017. Simulation-Based Benders' Cuts generation for the Joint Workstation, Workload and Buffer Allocation Problem. In Proceedings of the 2017 IEEE-CASE Conference, Xi-An, China.

(C46) Zhang, M. (∞,*,+), Matta, A. (+), and Pedrielli, G. (+). 2016. December. Discrete event optimization: workstation and buffer allocation problem in manufacturing flow lines. In Proceedings of the 2016 Winter Simulation Conference (pp. 2879-2890). IEEE Press.

(C47) Pedrielli, G. (*,+), and Ng, S.H. (+). 2016. December. G-STAR: a new kriging-based trust region method for global optimization. In Proceedings of the 2016 Winter Simulation Conference (pp. 803-814). IEEE Press.

(C48) Li, H. (*,+), Pedrielli, G. (+), Chen, M. (+), Lee, L.H. (10%), Chew, E.P. (10%), and Chen, C.H.(10%). 2016. December. V-shaped sampling based on Kendall-Distance to enhance optimization with ranks. In Proceedings of Winter Simulation Conference (WSC), 2016 (pp. 671-681). IEEE.

(C49) Pedrielli, G. (*,+), Zhu, Y. (∞,+), Lee, L.H. (10%), and Li, H. (20%). 2016. December. Empirical analysis of the performance of variance estimators in sequential single-run ranking & selection: the case of time dilation algorithm. In Proceedings of the 2016 Winter Simulation Conference (pp. 738-748). IEEE Press.

(C50) Pedrielli, G. (*,+), Vinsensius, A. (+), Chew, E.P. (+), Lee, L.H. (+), Duri, A. (+), and Li, H. (+). 2016. December. Hybrid order picking strategies for fashion e-commerce warehouse systems. In Proceedings of the 2016 Winter simulation conference (pp. 2250-2261). IEEE Press.

(C51) R. Weng (*,∞,+), Pedrielli, G. (+), Lee, L. H. (15%), and Ng, S. H. (15%). (2015). A Dynamic Programming Approach for the Bunkering with Contract Problem. In Proceedings of the 2015 International Conference on Logistics and Maritime Studies. Hong Kong August 27-29, 2015.

(C52) Pedrielli, G. (*,+), R. Weng (∞,+), Huang, W. (+), Lee, L. H. (15%), and Chew, E. P. (15%). (2015). Models for Bunkering Price Forecast. In Proceedings of the 2015 International Conference on Logistics and Maritime Studies. Hong Kong August 27-29, 2015.

(C53) Pedrielli, G. (*,+), Chee, J. W. (+), Lee, L. H. (15%), and Chew, E. P. (15%). (2015). A New Revenue-Based Empty Repositioning. In Proceedings of the 2015 International Conference on Logistics and Maritime Studies. Hong Kong August 27-29, 2015.

(C54) Pedrielli, G. (*,+), Matta, A. (+), and Alfieri, A. (+). 2015. December. Discrete event optimization: Single-run integrated simulation-optimization using mathematical programming. In Winter Simulation Conference (WSC), 2015 (pp. 3557-3568). IEEE.

(C55) Pedrielli, G. (*,80%), and Ng, S.H. (20%). 2015. December. Kriging-based simulation-optimization: a stochastic recursion perspective. In Winter Simulation Conference (WSC), 2015 (pp. 3834-3845). IEEE.

(C56) Li, H. (*,+), Li, Y. (+), Lee, L.H. (+), Chew, E.P. (+), Pedrielli, G. (+), and Chen, C.H. (+). 2015. December. Multi-objective multi-fidelity optimization with ordinal transformation and optimal sampling. In Winter Simulation Conference (WSC), 2015 (pp. 3737-3748). IEEE.

(C57) Li, H. (*,+), Zhu, Y. (∞,+), Chen, Y. (+), Pedrielli, G. (+), and Pujowidianto, N.A. (+). 2015. December. The object-oriented discrete event simulation modeling: a case study on aircraft spare part management. In Proceedings of the 2015 Winter Simulation Conference (pp. 3514-3525). IEEE Press.

(C58) Pedrielli, G. (*,+), Zhu, Y. (∞,+), and Lee, L.H. (20%). June (2015). Single-Run Simulation Optimization through Time Dilation and Optimal Computing Budget Allocation. In Proceedings of the 10th conference on Stochastic Models of Manufacturing and Service Operations.

(C59) Matta, A. (10%), Pedrielli, G. (*,80%), and Alfieri, A. (10%). 2014. December. Event relationship graph lite: Event based modeling for simulation-optimization of control policies in discrete event systems. In Simulation Conference (WSC), 2014 Winter (pp. 3983-3994). IEEE.

(C60) Pedrielli, G. (*,80%), Alfieri, A. (10%), and Matta, A. (10%). 2014. August. Time Buffer Control System for multi-stage production lines. In Automation Science and Engineering (CASE), 2014 IEEE International Conference on (pp. 393-398). IEEE.

(C61) Chen, X. (+), Pedrielli, G. (*,+), and Ng, S.H. (+). 2014. December. SNAT: Simulation-based search for navigation safety. The case of Singapore Strait. In Simulation Conference (WSC), 2014 Winter (pp. 1819-1830). IEEE.

(C62) Pedrielli G. (*,80%), Alfieri A. (10%), Matta, A. (10%). 2011. Mathematical Programming formulation for approximate simulation and optimization of closed-loop systems. In Proceedings of 8-th conference Stochastic Models of Manufacturing and Service Operations (SMMSO). Kusadasy, May 2011.

(C63) Pedrielli, G. (*,60%), Scavardone, P. (20%), Tolio, T. (5%), Sacco, M. (5%), and Terkaj, W. (10%). 2011. June. Simulation of complex manufacturing systems via HLA-based infrastructure. In Proceedings of the 2011 IEEE Workshop on Principles of Advanced and Distributed Simulation (pp. 1-9). IEEE Computer Society.

(C64) Terkaj, W. (+), Pedrielli, G. (*,+), Sacco, M (20%). 2012. Virtual Factory Data Model. 2nd Workshop, OSEMA (Ontology and Semantic Web for Manufacturing), Graz, Austria, July.

(C65) Alfieri, A. (10%), Matta, A. (10%), Pedrielli, G. (*,80%). 2013. Integrating Simulation Modeling and Optimization: an Event Based Approach. In Proceedings of Stochastic Models of Manufacturing and Service operations (SMMSO), May 2013, Germany.

(C66) Kaminsky, P. (+), Pedrielli, G. (+), Schruben, L.W. (+), Yuen, M.K. (*,+). 2013. Retrospective Optimization and Stochastic Approximation for Supply Chain Policy Optimization. In proceedings of ISERC, IIE Conference, May 18-22, San Juan, Puerto Rico, 2013.

(C67) Colledani, M. (+), Pedrielli, G. (+), Terkaj, W. (*,+), Urgo, M. (+). 2013. Virtual Integrated Platform for Manufacturing Systems Design. In proceedings of Conference on Manufacturing Systems 2013, Setubal, Portugal. June 2013.

3.3 Book Chapters Published

1. Pedrielli, G. (+,*), Lee, L.H. (+) and Chen, C.H. (+), 2024. Stochastic Simulation Optimization with Optimal Computing Budget Allocation. In Encyclopedia of Optimization (pp. 1-19). Cham: Springer International Publishing.
2. Pedrielli, G. (*,+), Tolio, T. (+), Terkaj, W. (+), and Sacco, M. (+). 2012. Distributed Modeling of Discrete Event Systems. In Discrete Event Simulations-Development and Applications. InTech.
3. Pedrielli, G. (*,+), Lee, L.H. (+), Chew, E. P. (+), and Tan, K.C. (+). (in print) Development of the Port of Singapore: A Historical Review. In T. F. Fwa (Ed.), 50 Years of Transportation in Singapore. World Scientific Publishing, Singapore.
4. Pedrielli, G. (*,+), Lee, L.H. (+), Chew, E.P. (+), and White, C.C. (+). (in print). Singapore: The future of Logistic Hubs. In T. F. Fwa (Ed.), 50 Years of Transportation in Singapore. World Scientific Publishing, Singapore.

3.4 Co-Editor for Thematic Journal Issues

1. Journal of Flexible Services and Manufacturing. Special Issue: "Simulation-Optimization in Manufacturing and Services". Eds: Matta, A., Pedrielli, G., Jie, X., Van Nieuwenhuyse, I.

4 Personnel: Student Supervision / Mentoring, Teaching, Dissertation Committees, Researchers, and Outreach

4.1 Ph.D. Students Graduated

(PTh1) Alireza Inanlouganji.
Program: Industrial Engineering;
School: Computing & Augmented Intelligence;

State of completion: Started Fall 2015-graduated Summer 2021;
Thesis Title: "Disaster Analytics for Critical Infrastructures (DACI): Methods and Algorithms for Modeling Disasters and Plan Proactive Recovery";
Current Position: Research Scientist for GM Advanced Research;
Publications: J11, J14, J22, C29, C39;

(PTh2) Logan Mathesen;
Program: Industrial Engineering;
School: Computing & Augmented Intelligence;
State of completion: Started Fall 2016-graduated Summer 2021;
Publications: J17, J18, J22, C26, C27, C30, C31, C36, C37, C38, C43, C44.

(PTh3) Menghan Liu;
Program: Industrial Engineering;
School: Computing & Augmented Intelligence;
State of Completion: Started Fall 2018-graduated Fall 2023;
Publications: J15, C23;

(PTh4) You (Kevin) Zhou;
Faculty Co-Chair: Teresa Wu;
Program: Industrial Engineering;
School: Computing & Augmented Intelligence;
State of completion: Started Fall 2020-graduated Fall 2025.
Publications: J5, J6;

(PTh5) Mohit Malu;
Program: Signals & Information Theory;
School: Electrical and Computer Engineering;
State of Completion: Started Spring 2019-defended Fall 2025;
Publications: J4, C11, C16, WP1; Role: Committee Member.

4.2 Ph.D. Students Current

- Students Chaired

1. Zach Eyde;
   Program: Industrial Engineering;
   School: Computing & Augmented Intelligence;
   State of Completion: Started Fall 2024. Expected to graduate Spring 2028;
2. Rebecca Dos Santos;
   Program: Data Science and Engineering;
   School: Computing & Augmented Intelligence;
   State of Completion: Started Fall 2024. Expected to graduate Spring 2029;
3. Quinn Thibeault;
   Program: Computer Engineering;
   School: Computing & Augmented Intelligence;
   State of Completion: Started Summer 2020. Expected to graduate Summer 2026;
4. Tanmay Khandait;
   Program: Computer Science;
   School: Computing & Augmented Intelligence;
   State of Completion: Started Spring 2023. Expected to graduate Spring 2027;
5. Mina Jiang; Program: Data Science and Engineering;
   School: Computing & Augmented Intelligence;
   State of Completion: Started Fall 2021. Expected to graduate Fall 2026;

- Students Co-Chaired:

  1. Qixian (Kevin) Zhao;
     Co-Chair: Petart Jevtič;
     Program: Data Science & Engineering;
     School: Computer Informatics & Decision Systems Engineering;
     State of completion: Started Fall 2022. Expected to graduate Spring 2027;

  2. Yumeng Cao;
     Co-Chair: Hahn P.;
     Program: Statistics;
     School: Mathematics and Statistical Sciences;
     State of Completion: Started Fall 2019. Expected to graduate Spring 2027;

  3. Surdeep Chotalyia;
     Co-Chair: J. Fowler;
     Program: Industrial Engineering;
     School: Computing & Augmented Intelligence;
     State of Completion: Started Fall 2020. Expected to graduate Fall 2026;

  4. Aditya Ramani;
     Co-Chair: S. Berman;
     Program: Mechanical Engineering;
     School: Engineering of Matter, Transport and Energy;
     State of Completion: Started Fall 2019. Expected to graduate Spring 2026;

4.3 M.S. Students Graduated

(MTh1) Poojah Ganesan. Graduated Spring 2025;
Thesis Title: " Efficient Multi Agent Rollout for Bayesian Optimization";
Position: SDE AI/ML at Amazon;

(MTh2) Shyam Sundar. Graduated Spring 2024;
Thesis Title: "Multi Agent Rollout for Bayesian Optimization";
Position: SD at Vibrant Wellness;

(MTh3) Eshita Shukla. Graduated Spring 2025;
Thesis Title: "NL2TL: A gray box approach for translation of natural language to formal requirements";
Position: SDE at Apple;

(MTh4) Tanmay Khandait. Graduated Fall 2022;
Co-chair: G. Fainekos;
Thesis Title: "Inside the Box: Analysing Cyber-Physical Systems, Exploiting Models and Requirements";
Position: Ph.D. student at ASU;

(MTh5) Jacob Anderson. Graduated Spring 2023;
Co-chair: G. Fainekos;
Thesis Title: "Formal Requirements Toolkit for Testing and Monitoring Temporal Logic-based Specifications";
Position: Researcher at Toyota Research Institute of North America;

(MTh6) Allen Moncey Varghese. Graduated Summer 2022;
Thesis Title: "Multi-resolution simulation for epidemics for improving testing policies";
Position: Ph.D. student at ASU;

(MTh7) Chandrasekhar Siva. Graduated Spring 2023;
Thesis Title: "Reinforcement learning for Digital Twin guided control of critical semiconductor pro-

cesses";
Position: Engineer at Amkor;

(MTh8) Yi-An Tsai. Graduated Spring 2018;
Thesis Title: "Stochastic Optimization for Feasibility Determination: An Application to Water Pump Operation in Water Distribution Networks";
Position: Data Scientist and Operations Research Analyst at Modular Mining Systems.

(MTh9) Sundaravaradhan Rengarajan. Graduated Summer 2018;
Thesis Title: "Performance analysis of a double crane with finite interoperational buffer capacity with multiple fidelity simulations";
Position: Data Scientist at Ford Motor Company;

(MTh10) Raquel Camarena. Graduated Summer 2018;
Co-chair: J. Li;
Thesis Title: "Stochastic Modeling and Optimization to Improve Identification and Treatment of Alzheimer's Disease";
Position: Quality Program Lead at Raytheon.

(MTh11) Gaurav Sharma. Graduated Summer 2020.
Thesis Title: "BioMan: Discrete-event simulator to analyze operations for CAR-T cell therapy manufacturing";
Position: Modeling Industrial Engineer at Micron;

(MTh12) Michaela Starkey. Graduated Summer 2020.
Thesis Title: "A Study on Optimization Measurement Policies for Quality Control Improvements in Gene Therapy Manufacturing";
Position: HRIS Manager at New Leaf.

4.4 M.S. Students Current

1. Sairaj Desai (School of Computing and Augmented Intelligence) (2024-2026)
2. Preetom K. Biswas (School of Computing and Augmented Intelligence) (2025-2026)
3. Ameya Madhav Gurjar. Graduated. Co-chaired with P. Jevtič (School of Computing and Augmented Intelligence) (2024-2026)

4.5 Undergraduate Students (Research)

1. Preetom K. Biswas (School of Computing and Augmented Intelligence) (2023-2025)
2. Owen P. Krueger (School of Computing and Augmented Intelligence) (2023-2026)
3. Sarah Maisha (School of Computing and Augmented Intelligence) (2025-2026)
4. Jessica Bistrais (School of Sustainability) (2018-2019);
5. Aashney Shah (School of Computing and Augmented Intelligence, IE Program) (2018-2020);
   (a) FURI Research "Utilizing Topology and Outage Data to Develop Analytics Regarding Power Networks and Decisions over the Network" (2019);
   (b) Honors Thesis "Understanding the Impact of Varied Testing and Infection Rates on COVID-19 spread across Age-Based Populations" (2021).
6. Robert W. Dodge (School of Computing and Augmented Intelligence, IE Program) (2020-2021);
7. Nicholas Seah (School of Computing and Augmented Intelligence, IE Program) (2020-2021).

4.6 Student Fellowships and Awards

1. Owen P. Krueger, CRA Outstanding Undergraduate Research Honorable Mention 2025;
2. Logan Mathesen, Dean's Fellowship;
3. Logan Mathesen, NSF Graduate Scholar Fellowship;
4. Logan Mathesen, Principle Cup INFORMS second placement;
5. Yunyi Kang Finalist Best Student Paper Award 2017 IEEE CASE;
6. Finalist Best Conference Paper Award 2021 IEEE CASE (Student co-author: Logan Mathesen).

5 Professional Activities and Service

5.1 Editor, Associate Editor for peer-reviewed journals

1. Journal of Simulation, Associate Editor (JoS Editorial Board);
2. IEEE Transactions on Automation Science and Engineering, Associate Editor (IEEE T-ASE Editorial Board);
3. IEEE Transactions on Neural Networks and Learning Enabled Systems, Associate Editor (IEEE T-NNLS Editorial Board);
4. INFORMS Journal on Computing, Associate Editor (INFORMS JoC Editorial Board).

5.2 International/national conferences chaired

1. Runtime Verification Conference, October 6th-October 9th, Queen's University, Kingston Canada. General co-Chair (RV2026 Website);
2. Dagstuhl Seminar Bayesian Optimization Nov 3rd-Nov7th 2025, Germany. (Dagstuhl Seminar Website).

5.3 International/national conferences committees

1. NASA Formal Methods Conference Program Committee (2026)
2. CPS Week Program Committee (2023-current);
3. EmSoft Program Committee (2025-current);
4. Winter Simulation Conference Program Committee (2022-current);
5. INFORMS Winter Simulation Conference, Diversity Award Committee member (2017);
6. INFORMS Winter Simulation Conference, Diversity Award Committee President (2018);
7. INFORMS Associate Communications Editor (2020-2022).

5.4 International/national conferences sessions organized

1. INFORMS Annual Meeting 2016 conference (1): "Learning for Simulation and Simulation Optimization";
2. INFORMS Winter Simulation Conference 2016 (1): "Logistics and Transportation for Manufacturing Systems";
3. INFORMS Annual Meeting 2017 (2):
   - "Enhanced Estimation and Sampling in Multi-model Setting";

- "Advances in Simulation Optimization and its applications".

4. Winter Simulation Conference 2017 (1): "Parallelization and Experimentation of Simulation Optimization Algorithms";
5. INFORMS International 2018 (2):
   - "Modeling and algorithmic approaches for Critical Intelligent Systems";
   - "Simulation and Optimization for Design and Control of Complex Systems".
6. INFORMS Annual Meeting 2020 Gray Box Bayesian Optimization (2 Sessions)
7. INFORMS Annual Meeting 2021 Learning and Sampling with Structure (1 Session)
8. Poster Track chair INFORMS Winter Simulation Conference (2018-2019).
9. Tutorial track chain INFORMS Winter Simulation Conference (2020-present).
10. INFORMS Annual Meeting Bayesian Optimization Sessions (2 sessions per year 2023-2025).

5.5 International/national conferences sessions chaired

1. Advances in Simulation Optimization IISE Meeting 2018;
2. Meta-model based Optimization. Winter Simulation Conference 2019;
3. Simulation for Manufacturing. Winter Simulation Conference 2019;
4. INFORMS Annual Meeting Bayesian Optimization Sessions (1 session per year 2023-2025)

5.6 Member of Editorial Board

1. Journal of Simulation;
2. Flexible Services and Manufacturing Journal (completed);
3. IEEE Transactions on Automation Science and Engineering;
4. IEEE Transactions on Neural Networks and Learning Systems.