

Shahab Derhami

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Education

- Ph.D. Industrial and Systems Engineering, Auburn University, AL, USA, 2017
- M.E. Industrial and Systems Engineering, Auburn University, AL, USA, 2012
- M.S. Social and Economic Systems Engineering, Bu-Ali Sina University, Hamedan, Iran, 2006
- B.S. Industrial Engineering, Azad University, South Tehran Branch, Tehran, Iran, 2004

Employment

- Assistant Professor**, School of Management, Binghamton University, NY, 2020-Present
- Senior Research Scientist**, Georgia Institute of Technology, GA, 2018-2020
- Postdoctoral Fellow**, Georgia Institute of Technology, GA, 2017-2018
- Instructor, Research Assistant, and Teaching Assistant**, Auburn University, AL, 2011-2017
- Economic Analyst**, PartLastic Factories Group, Iran, 2008-2011
- Project Planning Specialist**, Atlas Afrooz Shargh Co., Iran, 2006-2008
- Instructor**, Department of Industrial Engineering, Ilam Azad University, Iran, 2004-2005

Sponsored research

Funded projects

1. Data-driven autonomous retail inventory management system: Assessment and multi-phase innovation roadmapping, Bombardier Recreational Products (BRP), Investigators: B. Montreuil, & **S. Derhami**, August 2020-December 2020, role: Co-PI (\$93,000)
2. Data-driven models for dynamic vehicle distribution logistics, Nissan Group of North America, Investigators: B. Montreuil, **S. Derhami**, & L. McGinnis, April 2020-December 2021, role: Co-PI (\$348,000)
3. Physical internet-inspired hyperconnected global air cargo networks, Dutch Institute for Advanced Logistics (Dinalog), Investigators: T. Verduijn, L. Tavasszy, B. Montreuil, & **S. Derhami**, January 2020-December 2022, role: Co-PI (\$550,000)
4. Physical internet in automotive supply chains: concept engineering and simulation-based assessment of hyperconnecting Daimler's north American logistics, Mercedes-Benz U.S. International Inc., Investigators: B. Montreuil, & **S. Derhami**, August 2019-December 2019, role: Co-PI (\$60,000)

Under review proposals

1. Data-driven models to visualize, assess, and manage inbound flow disruptions in supply chain networks, Nissan Group of North America, Investigators: B. Montreuil, **S. Derhami**, L. McGinnis, & Y. Xie, role: Co-PI (\$301,000)
2. Predictive data-based modeling for materials requirement prediction and dynamic supply route planning, Nissan Group of North America, Investigators: B. Montreuil, **S. Derhami**, L. McGinnis, & Y. Xie, role: Co-PI (\$216,000)

Publications

Journal papers

1. **S. Derhami**, & B. Montreuil (2020), [Assessing product availability in omnichannel retail networks in the presence of on-demand inventory transshipment and product substitution](#), *Omega*, DOI: 10.1016/j.omega.2020.102315.
2. **S. Derhami**, J. S. Smith, & K. R. Gue (2019), [A simulation-based optimization approach to design optimal layouts for block stacking warehouses](#), *International Journal of Production Economics*, 223, 107525.
3. **S. Derhami**, J. S. Smith, & K. R. Gue (2019), [Space-efficient layouts for block stacking warehouses](#), *IIE Transactions*, 51(9), 957-971.
4. **S. Derhami**, J. S. Smith, & K. R. Gue (2017), [Optimising space utilisation in block stacking warehouses](#), *International Journal of Production Research*, 55(21), 6436-6452.
5. **S. Derhami**, & A. E. Smith (2017), [An integer programming approach for fuzzy rule-based classification systems](#), *European Journal of Operational Research*, 256(3), 924-934.
6. **S. Derhami**, & A. E. Smith (2016), [A technical note on the paper “hGA: Hybrid genetic algorithm in fuzzy rule-based classification systems for high-dimensional problems”](#), *Applied Soft Computing*, 41, 91-93.

Under review manuscripts

1. **S. Derhami**, & B. Montreuil, Estimation of potential lost sales in retail networks of high-value substitutable products, *Under the second round of review (minor revision) in IIE Transactions*.
2. **S. Derhami**, I. Dayarian, & B. Montreuil, Inventory planning for high-value substitutable products in the presence of seasonal demand and long lead times, *Under review in IIE Transactions*.

In-preparation manuscripts

1. Inventory planning for omnichannel retail networks in the presence of inventory transshipments, with B. Montreuil.
2. Optimizing product availability in omnichannel retail networks of high-value substitutable products with fast replenishment capability, with J. Yim, & B. Montreuil.
3. Product availability optimization in omnichannel retail networks in the presence of on-demand inventory transshipment and long replenishment lead time, with J. Yim, & B. Montreuil.

Refereed conference proceedings

1. J. Yim, **S. Derhami**, & B. Montreuil (2019), [Optimizing high-value product availability in hyper-connected retail networks](#), in *6th International Physical Internet Conference*, 168-179.
2. B. Montreuil, S. Buckley, L. Faugère, R. Khir, & **S. Derhami** (2018), [Urban parcel logistics hub and network design: The impact of modularity and hyperconnectivity](#), *Progress in Material Handling Research*.
3. **S. Derhami**, J. S. Smith, & K. R. Gue (2016), [A Simulation model to evaluate the layout for block stacking warehouses](#), *Progress in Material Handling Research*.
4. **S. Derhami**, & A. E. Smith (2014), [Iterative mixed integer programming model for fuzzy rule-based classification systems](#), *IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*, 2079-2084.

Teaching experience

Instructor

- Auburn University, AL (Fall 2015)
Stochastic Operations Research (98 students, avg. review: 5.0/6.0)
- Business Trading University, Mashhad, Iran (2007)
Operations Management, Production Management
- Azad University, Ilam, Iran (2004-2005)
Inventory Management, Facility Design, Production Planning, Computer Programming in IE

Teaching assistant

Auburn University, AL (2011-2016): Operations Planning and Control, Stochastic Operation Research, Simulation (graduate), Probability and Statistics I, Simulation Modeling and Analysis, Deterministic Operations Research

Honors and awards

- Funding supports to attend the Material Handling Teachers Institute and Future Faculty Symposium, the College Industry Council on Material Handling Education (CICMHE), 2015 and 2017
- Finalist in the INFORMS data mining best student paper for the paper “An integer programming approach for fuzzy rule-based classification systems”, 2016
- Honorable award for the poster “A novel optimization approach for data mining: a medical diagnosis case”, Graduate Engineering Research Showcase, Auburn University, AL, 2015 (\$1,000)
- Conveyor and Sortation Systems Honor Scholarship, the Material Handling Education Foundation, Inc., 2015 (\$2,000)
- Departmental award for the poster “Optimizing Space Utilization in Block Stacking Warehouses”, Graduate Engineering Research Showcase, Auburn University, AL, 2014 (\$500)
- Storage equipment manufacturers association honor scholarship, the Material Handling Education Foundation, Inc., 2012 (\$3,000)
- Auburn University graduate travel grants to attend three conferences, 2014-2016 (\$2,800)
- Graduate teaching assistantship, Auburn University, AL, 2011-2017
- Graduate teaching assistantship, Bu-Ali Sina University, Hamedan Iran, 2005-2006

Computer skills

- **Programming:** Java, Python, MATLAB, Visual Basic, Visual Basic for Application (VBA)
- **Optimization and simulation software:** CPLEX, Gurobi, AnyLogic, Simio
- **Other software:** Microsoft Office, Linux, L^AT_EX

Conference presentations and seminars

- “Inventory planning in interconnected retail networks”, INFORMS Annual Meeting, Seattle, WA, 2019
- “A simulation-based approach to estimate demand across retail networks and supply chains of high-value products”, IISE Annual Meeting, Orlando, FL, 2018
- “A novel optimization approach for disease diagnosis, poster presentation”, 4th Annual Postdoctoral Symposium at Georgia Institute of Technology, Atlanta, GA, 2017

- “Designing space-efficient warehouse layouts”, INFORMS Annual Meeting, Houston, TX, 2017
- “An integer programming approach for fuzzy rule-based classification systems”, Best data mining student paper competition, INFORMS Annual Meeting, Nashville, TN, 2016
- “Designing layouts for block stacking warehouses”, poster presentation, INFORMS Annual Meeting, Nashville, TN, 2016
- “Optimal design for block stacking warehouses”, INFORMS Annual Meeting, Nashville, TN, 2016
- “Optimizing space utilization in block stacking warehouses”, INFORMS Annual Meeting, Philadelphia, PA, 2015
- “Operations research in data mining: an application to medical diagnosis”, INFORMS Annual Meeting, Philadelphia, PA, 2015
- “Optimizing space utilization in designing block stacking warehouses”, IIE Annual Meeting, Nashville, TN, 2015
- “Ant colony optimization for work load smoothing in assembly lines”, 6th International Industrial Engineering Conference, Tehran, Iran, 2009
- “Using ant colony algorithm to solve multi objective assembly line balancing problem”, 2nd International Operation Research Conference, Babolsar, Iran, 2009
- “Solving fuzzy assembly line balancing problem with ant algorithm”, 3rd Joint Congress on Fuzzy and Intelligent Systems, Yazd, Iran, 2009

Service to profession

- Reviewer for IIE Transactions, European Journal of Operational Research, International Journal of Production Research, Computers and Operations Research, IEEE Transactions on Automation Science and Engineering, Applied Mathematical Modelling, SIMULATION: Transactions of The Society for Modeling and Simulation International, and 2015 IIE Annual Conference
- Session chair in 2018 and 2019 INFORMS Annual Meetings
- Session chair in 2018 IIE Annual Meeting
- Session chair and student volunteer in 2015 IIE Annual Conference
- Member of Institute for Operations Research and the Management Sciences (INFORMS)
- Member of Institute of Industrial and Systems Engineers (IIE)