Shahab Derhami

Assistant Professor of Business Analytics & Operations
School of Management, Binghamton University

sderhami@binghamton.edu
www.shahabderhami.com

Education

Ph.D. Industrial and Systems Engineering, Auburn University, AL, USA

M.E. Industrial and Systems Engineering, Auburn University, AL, USA

M.S. Social and Economic Systems Engineering, Bu-Ali Sina University, Hamedan, Iran

B.S. Industrial Engineering, Azad University, South Tehran Branch, Tehran, Iran

Employment

Assistant Professor, Binghamton University, NY, 2020-Present

Senior Research Scientist, Georgia Institute of Technology, GA, 2018-2020

Postdoctoral Fellow, Georgia Institute of Technology, GA, 2017-2018

Graduate Assistant, Auburn University, AL, 2011-2017

Economic Analyst, PartLastic Factories Group, Iran, 2008-2011

Publications

Journal papers

1. **S. Derhami**, & B. Montreuil, (2022), Estimation of potential lost sales in retail networks of high-value substitutable products, *IISE Transactions*, 54(6), 563-577.

2. **S. Derhami**, B. Montreuil, & G. Bao (2021), Assessing product availability in omnichannel retail networks in the presence of on-demand inventory transshipment and product substitution, *Omega*, 102, 102315.

3. **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.

4. **S. Derhami**, J. S. Smith, & K. R. Gue (2019), Space-efficient layouts for block stacking warehouses, *IISE Transactions*, 51(9), 957-971.

5. **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.

6. **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.

7. **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.

Manuscripts under review or in preparation

1. Food insecurity prevention: from higher education to racial fairness, with S. Mirghorbani.

2. Store inventory planning under stationary demand and customer substitution, with I. Dayarian.

3. A machine learning framework to predict delivery times in multimodal transportation systems.
4. Food insecurity prediction: from data analytics to machine learning.

Refereed conference proceedings

1. N. A. Schmid, W. Bao, **S. Derhami**, B. Montreuil, & V. Limère (2021), Optimizing kitting cells in mixed-model assembly lines, *IFAC-PapersOnLine*, 54(1), 163-168.
2. J. Yim, **S. Derhami**, & B. Montreuil (2019), Optimizing high-value product availability in hyperconnected retail networks, *in 6th International Physical Internet Conference*, 168-179.
3. B. Montreuil, S. Buckley, L. Faugére, R. Khir, & **S. Derhami** (2018), Urban parcel logistics hub and network design: The impact of modularity and hyperconnectivity, *Progress in Material Handling Research*.
4. **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*.
5. **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.

Sponsored research

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**, Approved in 2019, 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)

Teaching

Instructor

- Binghamton University, NY (Fall 2020-Present)
  SCM 460- Business Intelligence and Analytics
  SCM 575- Data Mining and Business Intelligence (MBA)
  SCM 365/565- Supply Chain Management
- Auburn University, AL (Fall 2015)
  Stochastic Operations Research
- 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

- Charles E. Scheidt Faculty Fellow in Atrocity Prevention, Binghamton University, 2022 - present.
- Travel grants, 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)
- Travel grants, Auburn University, 2014, 2015, and 2016 ($2,800)
- Graduate Assistantship, Auburn University, AL, 2011-2017
- Student Fellowship, Bu-Ali Sina University, Hamedan Iran, 2005-2006

Conference presentations

- "Assessing product availability in retail distribution networks", INFORMS Annual Meeting, Indianapolis, IN, 2022
- "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 bock 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

- Reviewer for Applied Mathematical Modeling, Computers & Industrial Engineering, Computers and Operations Research, European Journal of Operational Research, EURO Journal on Transportation and Logistics, International Journal of Logistics, IEEE Transactions on Automation Science and Engineering, IISE Transactions, International Journal of Production Research, SIMULATION, and 2015 IIE Annual Conference.
- A member of the search committee to hire Assistant Director of Operations for the Institute for Genocide and Mass Atrocity Prevention (IGMAP), Binghamton University, 2022
- Session chair in 2018 and 2019 INFORMS Annual Meetings
- Session chair in 2018 IISE 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 (IISE)