Borzou Rostami

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3-40K Business Building, 11203 Saskatchewan Drive NW, Edmonton, AB T6G 2R6
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(780) 492-4647

Academic Employment

Alberta School of Business, University of Alberta July 2025 - Present
Associate Professor and CPA Chair in Business Analytics

Alberta School of Business, University of Alberta April 2023 - Present
Academic director of AI Centre for Decision Analytics

Alberta School of Business, University of Alberta July 2022 - June 2025
Assistant Professor and CPA Chair in Business Analytics

Lazaridis School of Business, Wilfrid Laurier University July 2019 - June 2022
Assistant Professor of Operations and Decision Sciences

CERC DS4DM and GERAD, Polytechnique Montreal October 2017 - June 2019
Postdoctoral Researcher

CIRRELT, École de technologie supérieure October 2016 - September 2017
Postdoctoral Researcher

TU Dortmund University October 2014 - September 2016
Postdoctoral Researcher

University of Kurdistan, Iran 2006 - 2010
Full-time Lecturer

Education

Polytechnic University of Milan 2011 - 2014
Ph.D. in Operations Research (minor: Machine Learning)

Clemson University January 2013 - August 2013
Visiting Scholar

University of Kurdistan, Iran 2003 - 2006
M.Sc. in Operations Research

University of Kurdistan, Iran 1999 - 2003
B.Sc. in Applied Mathematics

Editorial Board

Information Systems and Operational Research (INFOR) 2022 - Present
Associate Editor

Research Interests

Large-scale discrete optimization, Data-driven optimization, Machine learning applied to real-time decision making, Integration of machine learning and optimization, Supply chain and retail analytics, Network design, Transportation and logistics

Grants

SSHRC - Insight Grant (IG) 2025-2029

"A Sustainable Last-Mile Delivery through Data-Driven Local Crowdshippers", Principal Applicant, $239,214

SSHRC - Insight Development Grant (IDG) 2025-2027

"High-Speed Internet and Energy for All: Who Are the 'All,' and How Do We Reach Them?", Co-applicant, $70,684

NSERC- CREATE 2025-2031

"Quantum Computing and Artificial Intelligence for Decision Optimization (QAI4DO)", Co-applicant, $1,650,000

Mitacs - Accelerate 2024-2026

"Development of an Advanced Predictive Model for Urban Fire Risk Assessment", Co-PI, $120,000

SSHRC - Insight Development Grant (IDG) 2022-2024

"Post-Pandemic Shelf Space Planning in Physical Retailing", Principal Applicant, $71,800

CPA Chair in Business Analytics 2022-2027

"Advanced Supply Chain Analytics", Chair fund, $100,000

NSERC - Discovery Grant 2020-2025

"discrete optimization under interactions and uncertainty", Principal Applicant, $130,000

NSERC - Discovery Launch Supplement 2020-2025

Principal Applicant, $12,500

CN (Canadian National Railway) 2020-2021

"drone delivery in smart cities: applications and challenges", Principal Applicant, $9,405, through the Centre for Supply Chain Management at Wilfrid Laurier University

CN (Canadian National Railway) 2021-2022

"data-driven approaches to analyze coopetition and supply chain relationships", Principal Applicant, $8,835, through the Centre for Supply Chain Management at Wilfrid Laurier University

CN (Canadian National Railway) 2021-2022

"improving store-wide shelf space planning in physical retailing", Principal Applicant, $6,166, through the Centre for Supply Chain Management at Wilfrid Laurier University

Internationalization Research Fund, École de technologie supérieure - ÉTS 2016-2017

"route planning with stochastic and correlated data", Co-applicant, $30,000

German Research Foundation (Deutsche Forschungsgemeinschaft DFG) 2015-2018

"hub location problems under data uncertainty", Collaborator, $385,800

Service on Grants Selection

SSHRC Insight Development Grant Selection Committee:
Committee 14A – Business, Management and Related Fields 2025 & 2026

NSERC Discovery Grant Reviewer for 6 Applications:
Civil, Industrial and Systems 2025 & 2026

Mitacs Reviewer 2024

The Fonds de recherche du Québec – Nature et technologies (FRQNT) Reviewer 2022

Refereed Journal Publications

Bayani, M., Rostami, B., Rousseau, L.M., and Adulyasak, Y. (2024). "A dual bounding framework through cost splitting for binary quadratic optimization", *INFORMS Journal on Computing* (10.1287/ijoc.2021.0186).

Babaee, S., Araghi, A., Castillo, I, and Rostami, B. (2023). "Attractiveness factors in retail category space location/allocation problem", *International Journal of Production Research 61(16)*, Pp 5566 – 5584.

Rostami, B., Lodi, A., and Errico, F. (2023). "A convex reformulation and an outer approximation for a class of quadratic binary programming", *Operations Research*, 71(2), Pp 471-486.

Babaee, S., Araghi, M., and Rostami, B. (2022). "Coordinating transportation and pricing policies for perishable products", *Transportation Research Part B 164*, Pp 105–125.

Haughton, M., Rostami, B., and Espahbod, S. (2022). "The price of anarchy in freight transportation spot markets", *EURO Journal on Transportation and Logistics*, 24:100071.

Rostami, B., Arslan, O., Chitsaz, M., Laporte, G., and Lodi, A. (2022). "Single-allocation hub location with heterogeneous economies of scale", *Operations Research 70(2)*, Pp 766 – 785.

Rostami, B., Desaulniers, G., Errico, F., and Lodi, A. (2021). "Branch-price-and-cut algorithms for the vehicle routing problem with stochastic and correlated travel times", *Operations Research 69(2)*, Pp 436 – 455.

Rostami, B., Kämmerling, N., Buchheim, C., Naoum-Sawaya, J., and Clausen, U. (2021). "Stochastic single-allocation hub location", *European Journal of Operational Research 289 (3)*, Pp 1087–1106.

Rostami, B., Kämmerling, N., Buchheim, C., and Clausen, U. (2018). "Reliable uncapacitated single allocation hub location problem under hub breakdowns", *Computers & Operations Research 96*, Pp 15–29.

Rostami, B., Chassein, A., Hopf, M., Frey, D., Buchheim, C., Malucelli, F., and Goerigk, M. (2018). "The quadratic shortest path problem: complexity, approximability, and solution methods", *European Journal of Operational Research 268 (2)*, Pp 473–485.

Rostami, B., Malucelli, F., Belotti, P., and Gualandi, S. (2016). "Lower bounding procedure for the asymmetric quadratic traveling salesman problem", *European Journal of Operational Research 253 (3)*, Pp 584–592.

Rostami, B., Strothmann, C., and Buchheim, C. (2016). "A decomposition approach for single allocation hub location problems with multiple capacity levels", *Lecture Notes in Computer Science 9849*, Pp 237-248.

Rostami, B., and Malucelli, F. (2016). "A generalized Gilmore-Lawler procedure for the quadratic assignment problem", *Electronic Notes in Discrete Mathematics 55*, Pp 77–80.

Meier, J.F., Clausen, U., Rostami, B., and Buchheim, C. (2016). "A compact Linearisation of euclidean single allocation hub location problems", *Electronic Notes in Discrete Mathematics 52*, Pp 37–44.

Rostami, B., Buchheim, C., Meier, J.F., and Clausen, U. (2016). "Lower bounding procedures for the single allocation hub location problem", *Electronic Notes in Discrete Mathematics 52*, Pp 69–76.

Rostami, B., and Malucelli, F. (2015). "Lower bounds for the quadratic minimum spanning tree Problem based on reduced cost computation", *Computers & Operations Research 64*, Pp 178–188.

Rostami, B., Malucelli, F., Frey, D., and Buchheim, C. (2015). "On the quadratic shortest path problem", *Lecture Notes in Computer Science 9125*, Pp 379–390.

Rostami, B., and Malucelli, F. (2014). "A revised reformulation-linearization technique for the quadratic assignment problem", *Discrete Optimization 14*, Pp 97–103.

Rostami, B., Cremonesi, P., and Malucelli, F. (2013). "A graph optimization approach to item-based collaborative filtering", *Recent Advances in Computational Optimization*, Springer International Publishing, Pp 15–30.

Djannaty, F., and Rostami, B. (2006). "A computational approach to pivot selection in the LP relaxation of set problems", *Journal of Applied Mathematics and Decision Sciences*, Pp 1–11.

Under Review

Godini, F. A., Verma, S., Rostami, B., Farnia, F., and Hemmati, A. (2026). "Performance of hybrid PINN-DNN models in predicting wall pressure and stress on bent pipes", *Journal of Pressure Vessel Technology* (accepted).

Hosseini, S. D., Rostami, B., and Araghi, M. (2026) "Service Time Window Assignment in Last-Mile Delivery", *Omega* (under revision).

Godini, F. A., Verma, S., Rostami, B., Farnia, F., Conrad, B., Lamborn, L., Vorontsov, V., and Hemmati, A. (2026). "Attention-based physics-informed neural network for wall stress prediction in bent pipes", *Journal of Fluids Engineering* (under review).

Babaei, F., Farham, S., Robins, D., Rostami, B., and Brown, S. (2026). "Hybrid inventory management under deeply-uncertain demand using stochastic programming", *International Journal of Production Economics* (under review).

Aslani, A., Rostami, B., and Araghi, M. (2026). "Omnichannel assortment planning with augmented reality-enabled product evaluation", *Production and Operations Management* (under review).

Working Papers

Rostami, B., Hosseini, S. D., Desaulniers, G., Errico, F., and Lodi, A. (2026). "PCA-augmented solution methods for combinatorial optimization with uncertain and correlated data".

Farham, M. S., Zeinali, Y., Haughton, M., and Rostami, B. (2026). "A Learning-based approximation method for fleet routing optimization in hub networks".

Behrooz, M., and Rostami, B. (2026). "Local crowd-shipping for last-mile delivery: mobility data and robust incentive design".

Zeinali, Y., and Rostami, B. (2026). "A decision-aware learning framework for allocation-routing problems".

Rafieikia, E., and Rostami B. (2026). "Strategic delivery pricing: broadening reach in markdown platforms".

Rafieikia, E., and Rostami B. (2026). "Learning-augmented Benders decomposition for two-stage optimization with block-separable structure".

Zadtootaghaj, P., and Rostami, B. (2026). "Stock and print: spare parts support under source dependent reliability and shared printer congestion".

Work in Progress

Bahri R., Rostami, B., and Roshanaie V. (2026). "Operating Room Scheduling via Contextual Stochastic Optimization."

Conference Proceedings

Rostami, B., Malucelli, F., Belotti, P., and Gualandi, S. (2013). "Quadratic TSP: A lower bounding procedure and a column generation approach", *Federated Conference on Computer Science and Information Systems - FedCSIS 2013*, Pp 377–384.

Rostami, B., Cremonesi, P., and Malucelli, F. (2012). "An application of bicriterion shortest paths to collaborative filtering", *Federated Conference on Computer Science and Information Systems - FedCSIS 2012*, Pp 423–429.

Technical Reports

Rostami, B., and Buchheim, C. (2017). "The uncapacitated single allocation p-hub median problem with stepwise cost function", PDF.

Rostami, B., Malucelli, F., and Belotti, P. (2014). "A tight lower bound for the adjacent quadratic assignment problem", PDF.

Rostami, B., Cremonesi, P., and Malucelli, F. (2012). "Application of graph models in recommender systems", Technical Report 2012.30, *Department of Electronics, information and Bioengineering, Polytechnic University of Milan, Milan, Italy.*

PhD Dissertation

Rostami, B. (2014). "Decomposition methods for zero-one quadratic optimization problems", *Department of Electronics, information and Bioengineering, Polytechnic University of Milan.*

Invited Talks and Conference Presentations

Learning-augmented Benders cut generation for large-scale optimization, *IFORS 2026 Conference*, Vienna, Austria, 2026.

Fleet sizing under demand uncertainty with contextual information, *IFORS 2026 Conference*, Vienna, Austria, 2026.

Surgeon-in-the-loop decision-aware learning for operating Room Planning, *IFORS 2026 Conference*, Vienna, Austria, 2026.

Last-Mile delivery with lockers and local crowd-shippers: the study of TELUS data for good, *MSOM 2025 Conference*, London, UK, 2025.

The role of AI in sustainable cattle farming, *Taiwan- Canada International Supply Chain Workshop*, National Chung Hsing University (NCHU), Taichung City, Taiwan, 2024.

Exact and approximate solution methods for convex binary quadratic optimization, *25th International Symposium on Mathematical Programming*, Montreal, Canada, 2024.

Strategic dual pricing for delivery services: Broadening reach in discounted food platforms, *2024 POMS International Conference*, Istanbul, Turkey, 2024.

Data-driven approach in hub network design with demand uncertainty, *CORS Annual Conferences*, London, Canada, 2024.

The Bike-sharing system through a predict-then-optimize paradigm, *CORS Annual Conferences*, Vancouver, Canada, 2022.

Interactions in routing optimization, *CORS Annual Conferences*, Virtual Conference, 2021.

Single allocation hub location with heterogeneous economies of scale, *CORS Annual Conferences*, Saskatoon, Canada, 2019.

Stochastic single-allocation hub location, *Optimization Days*, Montreal, Canada, 2019.

A convex reformulation and an outer approximation for a class of binary quadratic programs, *ISMP 2018*, Bordeaux, France, 2018.

Approximate schemes for combinatorial optimization problems with uncertain and correlated data, *CORS Annual Conferences*, Halifax, Canada, 2018.

A convex reformulation and an outer approximation for a class of binary quadratic programs, *Optimization Days*, Montreal, Canada, 2018.

Approximate schemes for combinatorial optimization problems with uncertain and correlated data with application in CVRP, *Optimization Days*, Montreal, Canada, 2018.

The vehicle routing problem with stochastic and correlated travel times, *21st Conference of the International Federation of Operational Research Societies - IFORS*, Quebec City, Canada, 2017.

Benders decomposition for binary quadratic programming, *5th EUROPT Workshop on Advances in Continuous Optimization*, Montreal, Canada, 2017.

The vehicle routing problem with stochastic and correlated travel times, *Optimization Days 2017*, Montreal, Canada, 2017.

An exact solution approach for single allocation hub location problems with multiple capacity levels, *28th European Conference on Operational Research*, Poznan, Poland, 2016.

A decomposition approach for single allocation hub location problems with multiple capacity levels, *4rd International Symposium on Combinatorial Optimization - ISCO*, Vietri sul Mare (Salerno), Italy, 2016.

A generalized Gilmore-Lawler procedure for the quadratic assignment problem, *Cologne Twente Workshop - CTW2016*, Gargnano, Italy, 2016.

On the quadratic shortest path problem, *14th International Symposium on Experimental Algorithms - SEA2015*, Paris, France, 2015.

Lower bounding procedures for the single allocation hub location problem, *7th International Network Optimization Conference - INOC 2015*, Warsaw, Poland, 2015.

Improved lower bound for the quadratic minimum spanning tree problem, *3rd International Symposium on Combinatorial Optimization - ISCO*, Lisbon, Portugal, 2014.

Quadratic TSP: A lower bounding procedure and a column generation approach, *Federated Conference on Computer Science and Information Systems - FedCSIS 2012*, Kraków, Poland, 2013.

An application of bicriterion shortest paths to collaborative filtering, *Federated Conference on Computer Science and Information Systems - FedCSIS 2012*, Wroclaw, Poland, 2012.

Students Supervision

Postdoc Fellows

Fahimeh Rahimi — September 2023 – Present

"Integration of machine learning and optimization", University of Alberta, Canada

Amin Aslani — September 2023 – Present

"Assortment planning", University of Alberta, Canada

Saleh Farham March 2022 – Present

"Contemporary hub location problems in freight transportation networks: Modeling, applications, and solutions methods", Wilfrid Laurier University and University of Alberta, Canada

Akbar Karimi May 2021 – December 2021

"Unmanned aerial vehicle in parcel delivery and emergency systems", Wilfrid Laurier University, Waterloo, Canada

Davod Hosseini September 2020 – July 2021

"Improving routing optimization under different risk and reliability measures", Wilfrid Laurier University, Waterloo, Canada

PhD Students

Roham Bahri (supervisor) 2024 – Present

"Contextual stochastic data-driven optimization", University of Alberta, Canada

Erfan Rafieikia (supervisor) 2023 – Present

"Integration of machine learning and optimization", University of Alberta, Canada

Mehrnaz Behrooz (co-supervisor) 2023 – Present

"Data-driven Last-mile delivery with lockers and local crowd-shippers", University of Alberta, Canada

Parang Zadtootaghaj (supervisor) 2021 – Present

"Additive manufacturing: from facility location to humanitarian logistics", Wilfrid Laurier University, Waterloo, Canada

Atousa Akhlaghy (co-supervisor) 2021 - 2022

"Integrated machine learning and optimization in home delivery services", Wilfrid Laurier University, Waterloo, Canada

Sara Babaee (co-supervisor) 2020 - 2021

"Three essays on the interface of sales and operations management", Wilfrid Laurier University, Waterloo, Canada

Mahdis Bayani (co-supervisor) 2019 - 2023

"Integration of machine learning and discrete optimization under the presence of interactions", Polytechnique Montreal, Montreal, Canada

MBA and MMA Research Assistants

Xi Han 2022

"Prediction and optimization in Bike Rental Systems", Wilfrid Laurier University, Waterloo, Canada

Jianze Wang 2022

"Prediction and optimization in Bike Rental Systems", Wilfrid Laurier University, Waterloo, Canada

Pierre Gautreau 2019 - 2021

"Analysis of environmental, social, and economic impacts of drone delivery", Wilfrid Laurier University, Waterloo, Canada

J. Eric Oyono 2020 - 2021

"Data-driven approaches to analyze coopetition and supply chain relationships", Wilfrid Laurier University, Waterloo, Canada

Master's Thesis

Benjamin Schmidt 2016

"Hub breakdown in network design with single allocation", TU Dortmund University, Dortmund, Germany

Patrick Segieth 2015

"Decomposition approaches for the quadratic assignment problem", TU Dortmund University, Dortmund, Germany

Nadine Kapias 2015

"Lower bounds for the quadratic assignment problem", TU Dortmund University, Dortmund, Germany

Teaching Experience

Program Development

Master of Management Analytics, Alberta School of Business, University of Alberta 2023-2024

Graduate Instructor

Applied Data-driven Optimization, PhD Program, Alberta School of Business, University of Alberta (Winter 2025)

Prescriptive Analytics, MBA Program, Alberta School of Business, University of Alberta (Winter 2023, Winter 2024, Winter 2025)

Decision Making with Analytics, MMA Program, Lazaridis School of Business & Economic, Wilfrid Laurier University (Winter 2021, Winter 2022)

Machine Learning for Business, MMA Program, Lazaridis School of Business & Economic, Wilfrid Laurier University (Fall 2021, Fall 2020)

Advanced Business Analytics, MBA Program, Lazaridis School of Business & Economic, Wilfrid Laurier University (Winter 2021, Spring 2020)

Aspects of Mathematical Modeling: Optimization, MSc, TU Dortmund University (Spring 2016)

Graduate Co-instructor

Recommender system (part of the course "Interactive TV and Recommender System"), MSc, Computer Science Engineering, Polytechnic University of Milan (Fall 2012)

Undergraduate Instructor

Prescriptive Analytics, Alberta School of Business, University of Alberta (Winter 2023, Winter 2024)

Business Decision Models, Lazaridis School of Business & Economic, Wilfrid Laurier University (Winter 2020)

Operations Research 1 and Operations Research 2, Bachelor students in Management Science, Industrial Engineering, and Applied Mathematics, University of Kurdistan, Iran (2006-2010)

The C++ Programming Language and Graph Theory, Bachelor students in Applied Mathematics, University of Kurdistan, Iran (2006-2010)

Numerical Analysis, Calculus, Statistics, Differential Equations, Bachelor students in Mathematics and Computer Science Engineering, University of Kurdistan, Iran (2006-2010)

Scholarly and Professional Activities

PhD Examination Committees

External examiner (PhD defense): Hsiu-Chuan Chang (University of Waterloo, June 3, 2025)

Committee member (Comprehensive Exam): Parang Zadtootaghaj, Atousa Akhlaghy (Lazaridis School of Business, Wilfrid Laurier University)

Committee member (Candidacy Exam): Mehrnaz Behrooz (Alberta School of Business, University of Alberta)

Internal Examiner (Candidacy Exam): Yasser Zeinali (Alberta School of Business, University of Alberta)

University Examiner (Candidacy Exam): Shirin Geranmayeh (Department of Mechanical Engineering, University of Alberta)

Co-supervisor (PhD defense): Sara Babaee (Lazaridis School of Business, Wilfrid Laurier University)

Graduate Admission Committee

Master of Management Analytics, Lazaridis School of Business	2021, 2022
Master of Supply Chain Management, Lazaridis School of Business	2021
PhD in Supply Chain, Operations and Technology Management, Lazaridis School of Business	2020
PhD in Operations and Information Systems, Alberta School of Business	2023, 2024

Tenure-track Hiring Committee

ODS Area, Wilfrid Laurier University	2021

Ad-hoc Reviewer

Operations Research, Transportation Science, Transportation Research Part B: Methodological, European Journal of Operational Research, Networks, SIAM Journal on Imaging Sciences, Theoretical Computer Science, Computers & Operations Research, INFORMS Journal on Computing, Discrete Applied Mathematics, Mathematical Methods of Operations Research

Internal Grants Committee

Office of Research Services, Wilfrid Laurier University	2020

Session Organizer in International Conferences

Canadian Operational Research Society, Optimization Days, International Federation of Operational Research Societies, International Symposium on Combinatorial Optimization

Member

Mathematical Optimization Society (MOS)

Institute for Operations Research and the Management Sciences (INFORMS)

Transportation and Logistics Society (TSL)

Manufacturing and Service Operations Management Society (MSOM)

Canadian Operational Research Society (CORS)