

Eman Almehdawe, PhD., P.Eng

3737 Wascana Parkway

Regina, SK, S4S 0A2

Phone: (306) 585 7425

Email: eman.almehdawe@uregina.ca

RESEARCH INTERESTS

- Business Analytics
- Applied Operations Research
- Supply Chain Management
- Healthcare Operations Management

ACADEMIC POSITIONS

Professor (Operations Management), Faculty of Business, University of Regina, Regina, SK July 2024 – present

Associate Dean, Graduate Programs, Faculty of Business University of Regina, Regina, SK July 2025 – present

Associate Dean Research and Graduate Programs, Faculty of Business University of Regina, Regina, SK January 2022 – December 2024

Associate Professor (Operations Management), Faculty of Business, University of Regina, Regina, SK July 2017 – June 2024

Associate member, Department of Industrial and Systems Engineering, University of Regina, Regina, SK November 2015 – present

Assistant Professor (Operations Management), Faculty of Business, University of Regina, Regina, SK September 2013 – June 2017

Lecturer, Department of Management Sciences University of Waterloo, Waterloo, ON September 2012 – August 2013

EDUCATION AND PROFESSIONAL DEVELOPMENT

PhD. in Management Science, Faculty of Engineering, University of Waterloo 2012
Thesis Title: Queueing Network Models of Ambulance Offload Delays

Master of Applied Science in Management Sciences, University of Waterloo 2007
Thesis Title: Batch Ordering and Batch Replenishment Policies for MTS-MTO Manufacturing Systems

Bachelor of Industrial Engineering, University of Jordan 2000

RESEARCH GRANTS AWARDED

- “Enhancing operational efficiency to match supply and demand for the Regina Food Bank” funded by the Natural Sciences and Engineering Research Council of Canada (**NSERC**) **Alliance Grant** in collaboration with G. Kabir, and Sharfuddin Khan, Grant amount: **\$135,000**. (2025-2028)

- “Battery cyclers system for second-life electric vehicle battery testing and modelling” funded by the Natural Sciences and Engineering Research Council of Canada (**NSERC**) **RTI Grant** in collaboration with Z. Wang, Y. Tang, and R. Paranjape, Grant amount: **\$150,000**. (2025-2026)
- “Electric vehicle infrastructure design, optimization, and emission evaluations toward full-scale net-zero transportation sector” funded by the Natural Sciences and Engineering Research Council of Canada (**NSERC**) **Alliance Grant** in collaboration with Dr. Y. Tang, R. Paranjape, Z. Wang, P. Tontiwachwuthikul Grant amount: **\$707,600**. (2023-2026)
- “Business Analytics Research Scholar”, Faculty of Business Administration, Grant amount: \$10,000. (2022-2023)
- “Agribusiness supply chain risk management” funded by the Faculty of Business Administration, Grant amount: \$10,000. (2020)
- “The effect of workload and speed on performance in the healthcare system,” funded by Mitacs to support the Master student Gowthaman Sivakumar In collaboration with Dr. Golam Kabir. **Mitacs Research Training Award**, Grant amount: \$6,000. (2019)
- “Optimization Models for the Technician Routing and Scheduling Problem,” funded by the Natural Sciences and Engineering Research Council of Canada (**NSERC**) **Engage Plus Grant** in collaboration with Access Communications Co-op as an industry partner, Grant amount: **\$26,626**. (2019)
- “A Bi-level Optimization Model for the Technician Routing and Scheduling Problem,” funded by the Natural Sciences and Engineering Research Council of Canada (**NSERC**) **Engage Grant** in collaboration with Access Communications Co-op as the industry partner, Grant amount: **\$25,000**. (2018)
- “Queueing Models and Optimization for Healthcare System Design and Improvement,” funded by the Natural Sciences and Engineering Research Council of Canada (**NSERC**) **Discovery Grant**, Grant amount: **\$184,000**. (2016 – 2026)
- “Predicting Canadian Credit Union Financial Performance and Its Effect on IT Investment Decisions,” funded by **Mitacs Accelerate**, in collaboration with Dr. Saqib Khan and industry partner Celero Solutions, Grant amount: **\$30,000**. (2017-2018)
- “Collaborative Research: Saskatchewan Centre for Patient-Oriented Research,” funded by The Canadian Institute of Health Research (**CIHR**), in collaboration with Saskatchewan Health Quality Council, eHealth, Saskatchewan Cancer Agency, University of Regina, University of Saskatchewan, and the Ministry of Health, Budget: **\$20,000**. Total budget: \$1,800,000. (2016-2021)
- “Predicting Canadian Credit Union Financial Performance and its Effects on IT investment Decisions,” funded by the Faculty of Business Administration Dean’s Research Grant, Grant amount: \$5,000. (2018)
- “Using empirical analysis to examine and improve Long-Term Care (LTC) patient flow in Saskatchewan,” funded by the Faculty of Business Administration Dean’s Research Grant, Grant amount: \$5,000. (2016–2017)
- “A Queueing model for the impact of appointment policies on healthcare system performance,” funded by the Faculty of Business Administration Dean’s Research Grant, Grant amount: \$5,000. (2015–2016)

- “Saskatchewan Imports and Exports: A Preliminary Quantitative Analysis,” funded by the Faculty of Business Administration, University of Regina, in collaboration with Paul Sinclair, Grant amount: (\$10,000). (2014-2015)
- “Measuring the impact of speeding service on the Intensive Care Unit (ICU) peak capacity” funded by the Faculty of Business Administration Dean’s Research Grant, University of Regina, Grant amount: \$5,000. (2014–2015)

TEACHING EXPERIENCE

- Faculty of Business Administration, University of Regina** September 2013 – present
- Project Management, graduate-level (GBUS 865)
 - Business Analytics, graduate-level (MBA 880, GBUS 845AK)
 - Production and Operations Management, executive level (EMBA 816)
 - Production and Operations Management, graduate-level (GBUS/MBA 816)
 - Advanced Operations Management, undergraduate level (BUS 435AW)
 - Operations Management, undergraduate level (BUS 275)
 - Business Analytics, undergraduate level (BUS 377)

- Department of Management Sciences, University of Waterloo** May 2011 – August 2013
- Quantitative Data Analysis, graduate-level
 - Production and Operations Management, undergraduate level
 - Deterministic Optimization, undergraduate level
 - Probability and Statistics, undergraduate level
 - Advanced Calculus, undergraduate level

INDUSTRY EXPERIENCE

Project Consultant for several projects for the following clients:

- Transport Canada, Transportation of Dangerous Goods Directorate October 2022-March 2023
- Residence, Ancillary, and Parking Services project, U of R March –May 2021
- Provincial Archives of Saskatchewan, Regina, SK October 2019
- Regina & Region Home Builder Association, Regina, SK January 2019 – July 2019
January 2017 – July 2017
- Saskatoon & Region Home Builder Association, Saskatoon, SK May 2019 – October 2019
- Viterra, Regina, SK September 2017 – April 2018
- Global Transportation Hub Authority, Regina, SK January 2014 – August 2014

REFERRED JOURNAL PUBLICATIONS

Published or accepted:

1. Pourjavad, E., & Almehdawe, E. (2025). Two metaheuristic algorithms for the technician routing and scheduling problem with time windows and balanced workloads. *Journal of Modelling in Management*, 1-25.
2. Gharaei, A., & Almehdawe, E. (2025). Overnight technician routing and scheduling problem with time windows and balanced workloads: a bi-objective zebra optimization algorithm. *International Journal of Systems Science: Operations & Logistics*, 12(1). <https://doi.org/10.1080/23302674.2025.2536110>.

3. Shikder, M. F. H., Tang, Y., Almehdawe, E., & Araújo, J. C. (2024). Risk incident analyses in the transportation of anhydrous ammonia as an emerging clean energy resource. *Risk Analysis*, 1–15. <https://doi.org/10.1111/risa.17634>
4. Roy, H. N., Almehdawe, E., & Kabir, G. (2024). A two-stage stochastic optimization framework for retail supply chain modeling with contemporaneous resilient strategies. *Production Engineering*, 1-22.
5. Salter, M., & Almehdawe, E. (2022). The Association of Education with Entrepreneurial Propensity and Entrepreneurial Income of Recent Canadian Graduates: A Tax Data Analysis. *Canadian Public Policy*, 48(3), 422-450.
6. Pourjavad, E., & Almehdawe, E. (2022). Optimization of the technician routing and scheduling problem for a telecommunication industry. *Annals of Operations Research*, 1-25.
7. Shahi, S & E. Almehdawe, (2022). Using Data Envelopment Analysis to Measure the Efficiencies of Saskatchewan's Health Regions during the COVID-19 Pandemic. Proceedings of the Annual International Conference on Industrial Engineering and Operations Management.
8. Sivakumar, G., Almehdawe, E., & Kabir, G. (2021). Developing a decision-making framework to improve healthcare service quality during a pandemic. *Applied System Innovation*, 5(1), 3.
9. Gharaei, A., & Almehdawe, E. (2021). Optimal sustainable order quantities for growing items. *Journal of Cleaner Production*, 307, 127216.
10. Sivakumar, G., Almehdawe, E., & Kabir, G. (2020). Development of a Collaborative Decision-Making Framework to Improve the Patients' Service Quality in the Intensive Care Unit. *The 2020 International Conference on Decision Aid Sciences and Applications (DASA '20)*, 597–600. IEEE.
11. Almehdawe, E., Khan, S., Lamsal, M., & Poirier, A. (2020). Factors affecting Canadian credit unions' financial performance. *Agricultural Finance Review*.
12. Ingolfsson, A., Almehdawe, E., Pedram, A., & Tran, M. (2020). Comparison of fluid approximations for service systems with state-dependent service rates and return probabilities. *European Journal of Operational Research*, 283(2), 562-575.
13. Gharaei, A., & Almehdawe, E. (2020). Economic growing quantity. *International Journal of Production Economics*, 223, 107517.
14. Almehdawe, E., Jewkes, B., & He, Q.M. (2018). Optimal Workload Allocation in Multi-server Systems with Priorities and an Application in Healthcare, *Journal of the Operational Research Society*, 1-12.
15. Almehdawe, E., Jewkes, B., & He, Q. M. (2016). Analysis and Optimization of an Ambulance Offload Delay and Allocation Problem, *OMEGA* 65, 148-158.
16. Almehdawe, E., Jewkes, B., & He, Q. M. (2013). A Markovian queueing model for ambulance offload delays. *European Journal of Operational Research*, 226(3), 602-614.
17. Almehdawe, E., & Jewkes, E. (2013). Performance analysis and optimization of hybrid manufacturing systems under a batch ordering policy. *International Journal of Production Economics*, 144(1), 200-208.
18. Almehdawe, E., & Mantin, B. (2010). Vendor managed inventory with a capacitated manufacturer and multiple retailers: Retailer versus manufacturer leadership. *International Journal of Production Economics*, 128(1), 292-302.

Under review:

1. Soufiani, E., Almehdawe, E., Tang, Y., A Realistic MAP/PH/c Queuing Model for Electric Vehicle Charging Stations: Theoretical Development and Real-World Case Study. *Transportmetrica B: Transport Dynamics*. (under second revision)
2. Soufiani, E., Almehdawe, E., Tang, Y., Modeling the Stochastic Charging Behavior of Electric Vehicles: A Validated Framework with User Charging Data. *Transportmetrica A: Transport Science*. (under second revision)

REFERRED BOOK CHAPTER

3. Martínez-Hernández, J. A., Tang, Y., & Almehdawe, E. (2024, June). Electric Vehicle User's Decision on When to Charge—From a Canadian Revealed Preference Study. In *Canadian Society of Civil Engineering Annual Conference* (pp. 83-97). Cham: Springer Nature Switzerland.
4. Roy, H. N., Almehdawe, E., & Kabir, G. (2023). Supply Chain Resilience Strategies for Times of Unprecedented Uncertainty. In *Supply Chain Risk and Disruption Management: Latest Tools, Techniques and Management Approaches* (pp. 95-115). Singapore: Springer Nature Singapore.

SELECTED CONFERENCE/ INVITED PRESENTATIONS

- E. Almehdawe, E. Soufiani, Y. Tang, “A Realistic MAP/PH/c Queuing Model for Electric Vehicle Charging Stations: Theoretical Development and Real-World Case Study”. The 34th European Conference on Operational Research (EURO 2025), Leeds, UK (June 22 - 25, 2025).
- E. Almehdawe, E. Soufiani, Y. Tang, “A Data-Driven Queuing Model for Modeling EV Charging Stations in Saskatchewan”. Canadian Operations Research Society (CORS) annual conference, Edmonton, Canada (June 8-11, 2025).
- E. Almehdawe, E. Pourjavad, “The Technician Routing and Scheduling Problem: A Genetic Algorithm Approach Versus a Simulated Annealing Approach”. INFORMS Annual Meeting, Phoenix, Arizona (October 15-18, 2023).
- E. Almehdawe, Hemendra Nath Roy, and Golam Kabir, “Retail Supply Chain Modeling with Simultaneous Resilient Strategies: A Two-stage Stochastic Optimization Framework”. The 5th International Conference on Organization and Management, Abu Dhabi, UAE (February 22-24, 2023).
- E. Almehdawe, and M. Salter, “The Effect of Education on Entrepreneurial Income of Recent Canadian Graduates: A Tax Data Analysis”. Invited CRDCN and CPP webinar titled “Focus on education outcomes”. November 2022.
- E. Almehdawe, and E. Pourjavad, “Two Metaheuristic Algorithms for the Technician Routing and Scheduling Problem with Time Windows and Balanced Workloads”, CORS, Vancouver, Canada (June 2022).
- E. Almehdawe, G. Kabir, and H. Nath Roy, “Retail Supply Chain Disruptions: A Resilient Supply Chain Network Design for Confronting the Consequences”, CORS, Vancouver, Canada (June 2022).
- E. Almehdawe, and E. Pourjavad, “A Bi-Level Optimization Model for the Technician Routing and Scheduling Problem”, Dalhousie University, Nova Scotia, Canada (August 2019).
- E. Almehdawe, “Impact of Congestion at the ED on Patient Length of Stay and Quality of Care: The Case of Regina General Hospital”, Boston, Massachusetts, United States of America (July 2019).
- E. Almehdawe, A. Ingolfsson, “A Delay-Differential Equation Model of an Intensive Care Unit with State-dependant Service rates and Return probabilities”, INFORMS Healthcare Conference, Rotterdam, Netherlands (July 2017).
- E. Almehdawe, and A. Ingolfsson, “A delay-differential equation fluid model with adjustable speed of an intensive care unit”, CORS, Banff, Canada (June 2016).
- E. Almehdawe, E. Jewkes and Q. He, “Workload Allocation in Priority Multi-server Systems with Application to Healthcare”, CanQueue, Halifax, Canada (September 2015).
- E. Almehdawe, E. Jewkes and Q. He, “An optimization model for the ambulance re-allocation problem”, CanQueue, London, Canada (August 2012).

- E. Almehdawe, E. Jewkes and Q. He, “A Markovian Queueing Network of Ambulance Offload Delays”, *Informatics Healthcare*, Montreal, Canada (June 2011).
- E. Almehdawe, and E. Jewkes, “Ambulance off-load Delay Problem: A Queueing Network Perspective”, *CanQueue Conference*, Winnipeg, Canada (August 2010).
- E. Almehdawe, and E. Jewkes, “Ambulance off-load Delay Problem: A Matrix Analytical Approach”, *CORS-MITACS Joint meeting*, Edmonton, Canada (July 2010).
- E. Almehdawe, and E. Jewkes, “Queueing Networks with Blocking Approximation Algorithm”, *CanQueue Conference*, Windsor, Canada (August 2009).
- E. Almehdawe, “Retailer Leadership versus Manufacturer Leadership for a Vendor Managed Inventory Supply Chain”, *CORS-INFORMS International Conference*, Toronto, Canada (June 2009).
- E. Almehdawe, and E. Jewkes, “A Queueing Model of Ambulance Off-load Delays”, *CORS-INFORMS International Conference*, Toronto, Canada (June 2009).
- E. Almehdawe, and E. Jewkes, “Ambulance Off-load Delay Problem: A Queueing Network Perspective”, *MITACS Conference*, Fredericton, Canada (May 2009).
- E. Almehdawe, and E. Jewkes, “Batching Policies for a MTS-MTO Production System”, *CanQueue Conference*, Halifax, Canada (August 2007).

AWARDS

- University of Regina Merit, 2017, 2018, 2024.
- University of Regina Research Stewardship Award. University of Regina, 2017.
- Doctoral thesis completion award, UW, 2012.
- Department of Management Sciences Teaching Assistant Award, UW, July 2012.
- Fraser Award for Graduate Student Research, Department of Management Sciences, UW, July 2011.
- Department of Management Sciences Teaching Assistant Award, UW, July 2010.
- Department of Management Sciences Graduate Merit Scholarship, UW, April 2009.
- University of Waterloo Graduate Entrance Scholarship, 2008 – 2009.
- Provost’s Doctoral Entrance Award for Women, UW, 2008 – 2009.

GRADUATE STUDENT SUPERVISION

- Nour Ben Said (2025-present). Master of Science in Industrial Engineering.
- Mohamed Awad (2025 – present). Master in Science in Industrial Engineering
- Elham Soufiani (2023-2025). Postdoctoral fellow.
- Naznin Alam (2022-2023). Research Assistant.
- Abolfazl Gharaei (2022-2023). Postdoctoral fellow.
- Hemendra Nath Roy (2021-2022). Master of Science in Industrial Engineering. Co-supervisor: Dr. Golam Kabir.
- Gowthaman Sivakumar (2020-2021). Student intern for the Mitacs Training Award. Master of Applied Science in Industrial Engineering. Co-supervisor: Dr. Golam Kabir.
- Ehsan Pourjavad (2018-2019). Postdoctoral fellow working on the NSERC Engage project.
- Megan Salter (2019-2020). Master of Business Administration.
- Abolfazl Gharaei (2018-2019). Postdoctoral fellow.
- Manish Lamsal (2017-2018). Student intern for the Mitacs Accelerate project.
- Ehsan Pourjavad (2017-2018). Student intern for the Viterra consultation project.

- Tat Ming Mok (2018). EMBA Capstone Graduate Project: “Saskatchewan Optimized Generation Mix to Meet Future Renewable and Clean Energy Target”.
- Heider Al Mashalah (2019). Co-supervisor (SCPOR project). Master of Applied Science in Industrial Engineering.
- Hamzea Al-Jabouri. Co-supervisor. Quit.
- Bob Newis (2015). Supervisor. EMBA Graduate Project: “Improving process efficiency at Shaw Pipe Protection using Value Stream Mapping”.
- Rick West (2014). Supervisor. EMBA Graduate Project: “Cost Analysis for an Integrated Vegetation Management Program on SaskPower’s Transmission Right-of Ways”.

EXTERNAL EXAMINER/ REVIEWER

- Ph.D. in Business. College of Graduate and Postdoctoral Studies, University of Saskatchewan. Candidate: Hossein Mirzaee Soleimanieh. April 2023.
- Ph.D. in Computer Science. University of Regina, SK. Candidate: Paulo Roberto Martins de Andrade. Completed in 2022.
- Master of Engineering in Industrial Systems Engineering. University of Regina, SK. Candidate: Malav Patel. April 2021.
- Master of Engineering in Industrial Systems Engineering. University of Regina, SK. Candidate: Mahnaz Khorasani. April 2021.
- NSERC Discovery Grant External Reviewer, 2020.
- Master of Applied Science in Industrial Systems Engineering. University of Regina, SK. Candidate: Sk Kafi Ahmed. December 2020.
- Doctor of Philosophy in Industrial Engineering. Dalhousie University, NS. Candidate: Mengyu Li. August 2019.
- Reviewer for the CORS Student Competition, 2018, 2019.
- Master of Science in Finance. University of Saskatchewan, SK. Candidate: Iman Ramezani. December 2018.
- Master of Science in Computer Science. University of Regina, SK. Candidate: Swati Ganguly. December 2016.

ACADEMIC SERVICE

- Member, University of Regina Executive of Council Committee (2022-present)
- Member, University of Regina Acting Vice President Research Selection Committee (2022)
- Chair, Faculty of Business Administration Graduate Program Committee (2022-present)
- Chair, Faculty of Business Administration Research Committee (2022-2024)
- Member, Faculty of Business Administration Dean Advisory Committee (2020 – 2022)
- Member, Hiring committee (Marketing and Leadership)
- Member, Faculty of Business Administration Research Committee
- Member, University of Regina Sustainability and Community Engagement Fund (2015)
- Member, Faculty of Business Administration Graduate Program Committee (2019)
- Member, Vanier Canada Graduate Scholarships program, (2016)

PROFESSIONAL SERVICES

- **Canadian Operational Research Society (CORS) elected councilor** (2024-2026).
- **Conference Organizer.** 1st International Conference on Industrial, Manufacturing, and Process Engineering (ICIMP – 2024).
- **CORS diploma coordinator,** University of Regina

- **Scientific Committee member:** for the Canadian Operational Research Society Conference, Saskatoon, 2019.
- **Referee Services:** Ad-hoc reviewer for the International Journal of Production Economics (IJPE), Journal of the Operational Research Society (JORS), European Journal of Operational Research (EJOR), The International Journal of Management Science (OMEGA), Information Systems and Operational Research (INFOR).
- **Session Chair:** CORS 2018, INFORMS Healthcare Conference 2011, CORS/MOPGP' 2012

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- APEGS (Association of Professional Engineers and Geoscientists of Saskatchewan)
- INFORMS (Institute for Operations Research and the Management Sciences)
- CORS (Canadian Operational Research Society)
- DSI (Decision Science Institute)
- MSOM (The Manufacturing and Service Operations Management Society)
- POMS (Production and Operations Management Society)