Hamed Milani

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CONTACT INFORMATION

Email:	hamed.milani@gmail.com
Institutional Email:	hamed.milani@ucalgary.ca
Website:	hamedmilani.github.io
LinkedIn:	linkedin.com/in/hamedmilani
Phone:	+98-938-030-5707

EDUCATION

Koç University, Graduate School of Business — Istanbul, Turkey
Pre-Doctoral Course in Operations Management — *2021 - 2023*

- **Overall GPA:** 3.4/4
- **Selected Courses:** Advanced Optimization Methods, Integer and Combinatorial Optimization, Dynamic Programming, Stochastic Models and Application, Queueing Theory, Optimization Models in OM, Research Methods in Business
- **Title of Summer Paper:** Energy-Efficient Resource Scheduling for a Single Machine with Production Constraints: A Mathematical Model
(Advisor: Professor Barış Tan)
- **Status:** Transcript is available. Functioned effectively as pre-doctoral training through advanced coursework, teaching assistantships, and research activity.

Sharif University of Technology — Tehran, Iran
M.Sc. in Industrial Engineering — *2018 - 2021*

- **Overall GPA:** 17.21/20 (3.61/4)*
- **Selected Courses:** Advanced Stochastic Processes, Data Driven Decision Making and Modeling, Probability Models and Queueing, Healthcare Information Systems, Supply Chain Planning
- **Title of M.Sc. Thesis:** A Markov Decision Processes Model For Supplier Selection in Supply-Chain Management Under Uncertainty
(Advisor: Professor Alireza Haji)

*Converted using University of California Irvine GPA calculator.

Urmia University of Technology — Urmia, Iran
B.Sc. in Industrial Engineering — *2011 - 2015*

- **Overall GPA:** 15.29/20 (3/4)
Last two years GPA: 16.45/20 (3.38/4)

RESEARCH INTERESTS

Methodologies

- **Optimization:** Combinatorial Optimization, Dynamic Programming, Stochastic Programming, Data-Driven Modeling and Decision-Making.
- **Stochastic Modeling:** Markov Processes, Sequential Decision-Making, Queueuing Systems, Bayesian Inference.
- **Data Science:** Machine Learning, Reinforcement Learning, Data Mining, Statistical Analysis.

Applications

- **Healthcare Operations:** Cancer Screening, Kidney Exchange Problems, Nurse and Operating Room Scheduling, Healthcare Information Systems, Human-AI Interaction.
- **Supply Chain Management:** Demand Estimation, Supplier Selection, Network Optimization.
- **Manufacturing:** Energy-Efficient Control, Machine and Operations Scheduling, Inventory Control.

WORKING PAPER

Working Paper *ready to submit to Canadian Medical Association Journal*

Milani H., Bijvank M., Piri H., Brenner D., Khan O. *"Trade-offs of Breast Cancer Screening Scenarios in Canada: A Microsimulation Modeling Study."*
Conducted cost-effectiveness, cost-utility, and harm-to-benefit analyses of multiple breast cancer screening policies using the OncoSim-Breast microsimulation model. Evaluated trade-offs across a wide range of screening strategies, including hybrid policies that rarely examined in the literature.
Pre-print available at personal website.

TEACHING EXPERIENCE

Teaching Assistant, Koç University

- Management Information Systems, Professor Serpil Sayin, *Fall 2021, Fall 2022.*
- Operations Management, Professor Zeynep Akşin Karaesmen, *Spring 2022, Spring 2023.*
- Supply Chain Management, Professor Zeynep Akşin Karaesmen, *Fall 2021, Fall 2022.*

Teaching Assistant, Sharif University of Technology

- Stochastic Processes, Professor Alireza Haji, *Fall 2019.*

Teaching Assistant, Urmia University of Technology

- Probability Theory and Applications, Professor Jahangoshai, *Fall 2015.*

OTHER RESEARCH EXPERIENCE

Proposal *ongoing*

Milani H. *"Personalized Breast Cancer Screening by Combining Screening and Diagnostic Decisions."* to be submitted to *Management Science.*
Mammography screening effectively reduces breast cancer mortality but suffers from high false-positive rates and unnecessary follow-ups. To address these two inefficiencies, this research proposes a unified framework combining screening and post-mammography diagnostic decisions to derive personalized patient pathways.
Proposal available at personal website.

Summer Paper *2023*

"Energy-Efficient Resource Scheduling for a Single Machine with Production Constraints: A Mathematical Model" (Advisor: Professor Barış Tan)
Analyzed a single-machine production system with throughput constraints and uncertain parameters. Formulated a robust optimization model to design energy-efficient control plans that remain feasible under all scenarios while minimizing average operational cost.
Available at this link.

Master of Science's Thesis *2021*

"A Markov Decision Processes Model For Supplier Selection in Supply-Chain Management Under Uncertainty" (Advisor: Professor Alireza Haji)
Studied a two-echelon supply chain with unreliable suppliers, modeled as a discrete-time Markov Decision Process to determine optimal order allocations over a finite horizon. Proposed a novel three-state Markov chain capturing complex supplier unreliability behaviors.
Available at SSRN.

INDUSTRY / INTERNSHIP EXPERIENCE

Nurse Scheduling Software *January 2025 - March 2025*
I founded a healthcare software startup in Iran and developed an advanced nurse-scheduling system that incorporates staff preferences, operational constraints, and fairness considerations. I built an integer-programming model in Python (Gurobi) to optimize scheduling and created the user interface in HTML. A web version and product catalog are available on my GitHub (link).

Energy Optimization in Ford Otosan *September 2022 - April 2023*
In a joint project between Koç University and Ford Otosan, an automotive manufacturing company, my role was to develop mathematical programming models to optimize the on/off schedule of a high-power industrial oven and to build discrete-event simulation models for comparing different threshold policies.

Part-time Data Analyst *August 2019 - October 2019*
Koosha Advertising Agency, Tehran, Iran
Project: Providing managerial dashboards to analyze the performance of the sales representatives.

Data Analyst Intern *February 2019 - May 2019*
Alibaba Travels Company, Tehran, Iran,
Project: Developing a data-driven model to improve the efficiency of the callbacks in the call center.

Part-time Project Control Manager *June 2018 - July 2019*
Mashid Sazan Technical Engineering Company, Tehran, Iran
Project: Designing project schedules and Gantt charts, monitoring project progress and costs, and creating progress reports.

AWARDS AND HONORS

- **Haskayne School of Business Ph.D. Scholarships,** University of Calgary, *Fall 2024, Fall 2025. (Unfortunately could not commence due to visa processing delays.)*
- **Graduate School of Business Scholarships,** Koç University, *2021.*
- **Ranked 3rd in GPA among M.Sc. students (Engineering Management Area),** Sharif University of Technology, *2020.*
- **Ranked 12th in National Master Entrance Exam (top 0.15% among more than 8000 participants),** Iran, *2018.*
- **Registered and Honored Patent,** H.Milani, M.Pilpa, *"Design and Implementation of an Integrated Clouding Traffic Control System"*, Certificate Number 43314, Registered on State Deeds and Real Properties Organization, Tehran, Iran, *2007.*

TEST SCORES

TOEFL iBT

- Overall: 104, Reading: 28, Listening: 30, Speaking: 22, Writing: 26
  Test Date: February 01, 2020

GENERAL GRE

- Quantitative: 170, Verbal: 146, Writing: 2.5
  Test Date: February 14, 2024
- Quantitative: 160, Verbal: 150, Writing: 3.0
  Test Date: November 24, 2019
- I acknowledge my verbal and writing scores are below my potential, and I am prepared to retake the GRE to achieve 160+ verbal and 4+ writing if required.

COMPUTER SKILLS

- **Programming**: Python (Proficient*), C++ (Proficient).
- **Statistics:** R (Proficient), STATA (Familiar**).

- **Data Science**: Pandas (Proficient), NumPy (Proficient), TensorFlow (Familiar), Keras (Familiar), PyTorch (Familiar), Scikit-learn (Familiar), XGBoost (Familiar).
- **Data Analytics**: Tableau (Proficient), Power BI (Familiar), Excel (Proficient).
- **Optimization**: Gurobi (Proficient), CPLEX (Proficient), GAMS (Proficient).
- **Other Tools**: MATLAB (Familiar), LaTeX (Proficient), Vision (Proficient), HTML (Familiar), Git (Familiar).

***Proficient:** Applied in several academic research and professional projects.
****Familiar:** Applied in a coursework project or self-study.