Parshan Pakiman

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Appointments

Assistant Professor of Operations Management   Since Fall 2025

Department of Operations Management and Strategy
University at Buffalo School of Management
The State University of New York

Principle Researcher   2023-2025

Tolan Center for Healthcare
Booth School of Business
The University of Chicago

Education

College of Business Administration, University of Illinois Chicago   2017 - 2023

Thesis title   Self-guided Approximate Linear Programs: Randomized Multi-shot Approximation of Markov Decision Processes (**Link**)

Committee   Selva Nadarajah (Advisor and Chair); Dan Adelman, Beryl Chen, Itai Gurvich, Negar Soheili

College of Business Administration, University of Illinois Chicago   2017 - 2023

M.Sc.   Business Analytics

College of Science, University of Tehran   2012 - 2016

B.Sc.   Applied Mathematics

Research Interests

— Studying impactful healthcare and retail operations problems by designing new algorithms based on data-driven optimization, reinforcement learning, and machine learning techniques.

— Developing algorithms to tackle large-scale Markov decision processes that are accessible to business users by requiring minimal human intervention during implementation.

Published Papers

— P. Pakiman, S. Nadarajah, N. Soheili, Q. Lin. *Self-Guided Approximate Linear Programs: Randomized Multi-Shot Approximation of Discounted Cost Markov Decision Processes.* Published in **Management Science** (**Link**).

— A. Chenreddy, P. Pakiman, S. Nadarajah, R. Chandrasekaran, R. Abens. *SMOILE: A Shopper Marketing Optimization and Inverse Learning Engine.* **Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining**, 2019 (Acceptance rate 6.4%, **Link**).

Under Review / Working Papers

— D. Adelman, A. J. Mersereau, P. Pakiman. *Dynamic Optimization of Workforce Talent.* Under review at **Operations Research** (**Link**).

— P. Pakiman, B. Chen, S. Nadarajah, S. Jasin. *Adaptive Risk Mitigation in Demand Learning* In preparation for submission to **Manufacturing & Service Operations Management** (Earlier version available at **Link**).

— P. Pakiman, S. Nadarajah. *Back to the Future: Revisiting a Pioneering Approximation of Average Cost Markov Decision Processes Using a Multi-Shot Perspective.* In preparation for submission to **Journal on Computing** (**Link**).

Work In-Progress

— D. Adelman, C. Keceli, P. Pakiman. *Performance-blind and Data-driven Dynamic Assignment.*

— D. Adelman, P. Pakiman. *Retrospective Approximate Dynamic Programming.*

— S. Nadarajah, P. Pakiman. *Randomized Multi-Shot Least Squares Monte Carlo for Option Exercise.*

Industry Collaborations

— Interned with the Advanced Solutions team at *Guidehouse:* Developed an approximate dynamic programming 2021
algorithm based on simulation to address a workflow scheduling problem.

— Collaborated with *Foresight ROI*: Developed an inverse optimization method using Markov decision processes 2017 - 2019
to model historical data trajectories and optimize future marketing campaigns. (**Link** to the research paper).

Teaching Experiences

Instructor   Since Fall 2025

— Supply Chain Analytics (UB)

— Production & Operations Management (UB)

Guest Instructor / Teaching Assistant   Since Fall 2014

— Approximate Dynamic Programming (UChicago)

— Supply Chain Management (UIC).

— Introduction to Operations Management (UIC)

— Business Analytics (UIC)

— Business Data Mining (UIC)

— Online Customer Analytics (UIC)

— Text Analytics for Business (UIC)

— Business Forecasting (UIC)

— Optimization for Analytics (UIC)

— Scientific Computing (UTehran)

— Numerical Linear Algebra (UTehran)

Invited Talks and Presentations

Dynamic Optimization of Workforce Talent

— INFORMS Applied Probability Society (APS) Conference, Atlanta, GA	2025
— University at Buffalo, School of Management, Buffalo, NY	2024
— Stony Brook University, College of Business, Stony Brook, NY	2024
— University of Toronto, Rotman School of Management, Toronto, ON	2024
— INFORMS Annual Meeting, Seattle, WA	2024
— Purdue Operations Conference, West Lafayette, IN	2024
— MSOM Conference (Healthcare SIG), Minneapolis, MN	2024
— Chicago Booth Principal Researcher Workshop, Chicago, IL	2024

Adaptive Risk Mitigation in Demand Learning

— POMS 35th Annual Conference, Atlanta, GA	2025
— INFORMS Annual Meeting, Phoenix, AZ	2023
— INFORMS Annual Meeting, Virtual	2020
— INFORMS Revenue Management and Pricing Student Live Paper Series, Virtual (**Link**)	2020

Randomized Multi-Shot Least Squares Monte Carlo for Option Exercise

— INFORMS Annual Meeting, Phoenix, AZ	2023
— POMS 32nd Annual Conference, Virtual	2022

Self-Guided Approximate Linear Programs: Randomized Multi-Shot Approximation of Discounted Cost Markov Decision Processes

— Tuck School of Business, Dartmouth College, Hanover, NH	2022
— International Conference on Continuous Optimization (ICCOPT), Bethlehem, PA	2022
— INFORMS Optimization Society (IOS) Conference, Greenville, SC	2022
— INFORMS Annual Meeting, Anaheim, CA	2021
— POMS 30th Annual Conference, Washington D.C.	2019
— INFORMS Annual Meeting, Phoenix, AZ	2018
— POMS 29th Annual Conference, Houston, TX	2018

SMOILE: A Shopper Marketing Optimization and Inverse Learning Engine
— ACM SIGKDD, International Conference on Knowledge Discovery & Data Mining, Anchorage, AK (**Link**) 2019

Honors and Awards

Doctoral fellowship:	College of Business Administration, University of Illinois Chicago, USA	2017 - 2023
BGS membership (honor society):	College of Business Administration, University of Illinois Chicago, USA	2021
Merit-Based Graduate Admission:	College of Science, University of Tehran, Iran	2016
Technical qualification:	Soccer Simulation League, RoboCup Iran open, Iran (**Link**)	2016
Technical qualification:	Soccer Simulation League, Khwarizmi International Award, Iran (**Link**)	2010

Computational Skills

Programming languages:	Python, R, C++, C, Java, Matlab, HTML, JavaScript
Data analytics libraries:	Scikit-learn, Gymnasium, Numba, NumPy, Matplotlib, SciPy, Pandas
Optimization libraries:	Gurobi, CVXPY, Nevergrad, Autograd, PyTorch, Pyomo, OR-Tools
Operating systems:	Linux, MacOS

Service

Reviewer
— Production and Operations Management (POM) 2024
— INFORMS Journal on Computing (IJOC) 2022
— Information Systems Research (ISR) 2022
— International Conference on Learning Representations (ICLR) 2021
— Annals of Operations Research (ANOR) 2019 - 2021
— Computers & Operations Research (COR) 2019 - 2021
— Electronic Commerce Research (ECR) 2018 - 2021
— Information Systems and Operational Research (INFOR) 2018

Conference Organization
— Session chair, *Dynamic Pricing and Risk Management*, POMS 35th Annual Conference 2025
— Session co-chair, *New Topics in Dynamic Assignment*, INFORMS Annual Meeting 2024
— Session co-chair, *Recent Advances in Approximate Dynamic Programming*, INFORMS Annual Meeting 2024
— Session co-chair, *Risk Management in Reinforcement Learning*, INFORMS Annual Meeting 2023
— Session co-chair, *Learning and Sequential Decision Making*, INFORMS Annual Meeting 2022
— Session co-chair, *Large-scale Linear Programs and Applications*, INFORMS Optimization Society Conference 2022
— Session chair, *Recent Advances in Reinforcement Learning*, INFORMS Annual Meeting 2021
— Session co-chair, *Social Responsibility and Risk in Supply Chains*, INFORMS Annual Meeting 2021

Membership
— Beta Gamma Sigma (BGS) Society 2021 - Present
— Production and Operations Management Society (POMS) 2018 - Present
— Institute for Operations Research and the Management Sciences (INFORMS) 2017 - Present
— INFORMS Chicago Chapter Ambassador 2022