

PARSHAN PAKIMAN

ParshanPakiman.github.io [LinkedIn.com/in/Parshan-Pakiman](https://www.linkedin.com/in/Parshan-Pakiman) [Github.com/ParshanPakiman](https://github.com/ParshanPakiman) Parshan.Pakiman@ChicagoBooth.edu

Aug, 2024

ACADEMIC EMPLOYMENT

Booth School of Business, University of Chicago, USA

2023 - Present

Position Postdoctoral Researcher

Mentor Dan Adelman

EDUCATION

College of Business Administration, University of Illinois Chicago, USA

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, USA

2017 - 2023

M.Sc. Business Analytics

College of Science, University of Tehran, Iran

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

- P. Pakiman, S. Nadarajah. *Back to the Future: Revisiting a Pioneering Approximation of Average Cost Markov Decision Processes Using a Multi-Shot Perspective*. Under review at **Operations Research** ([Link](#)).
- D. Adelman, A. J. Mersereau, P. Pakiman. *Dynamic Assignment of Jobs to Workers with Learning Curves*. In preparation for submission to **Operations Research**.
- P. Pakiman, B. Chen, S. Nadarajah, S. Jasin. *Self-adapting Risk Management in Dynamic Pricing with Demand Learning*. In preparation for re-submission to **Manufacturing & Service Operations Management** (Earlier version available at [Link](#)).

WORK IN-PROGRESS

- D. Adelman, C. Keceli, P. Pakiman. *Equitable and Data-driven Dynamic Matching*.
- 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 algorithm based on simulation to address a workflow scheduling problem. 2021
- Collaborated with *Foresight ROI*: Developed an inverse optimization method using Markov decision processes to model historical data trajectories and optimize future marketing campaigns. ([Link](#) to the research paper). 2017 - 2019

TEACHING EXPERIENCES

Course Co-Designer

2021 - 2023

- Engaged in developing a new course, Optimization for Analytics, by designing the curriculum, delivering lectures, creating assignments with Python templates, and overseeing the final project ([Link](#) to the material).

Guest Instructor

2019 - 2023

- Supply Chain Management (UIC). Taught two sessions on warehouse management ([Link](#) to slides).
- Business Data Mining (UIC). Taught refresher sessions on programming in R ([Link](#) to the material).
- Business Analytics (UIC). Taught refresher classes on linear algebra, calculus, and probability, and hold lectures on regression, classification, and likelihood maximization ([Link](#) to the material).

Teaching Assistant

2014 - 2024

- Approximate Dynamic Programming (UChicago)
- 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)

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

INVITED TALKS AND PRESENTATIONS

Dynamic Assignment of Jobs to Workers with Learning Curves

- 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

Self-Adapting Risk Management in Demand Learning

- 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

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 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

REFERENCES

- **Dan Adelman**, Charles I. Clough, Jr. Professor of Operations Management, Booth School of Business, University of Chicago. Email: dan.adelman@chicagobooth.edu. Homepage: faculty.chicagobooth.edu/daniel-adelman.
- **Adam J. Mersereau**, Professor and Area Chair of Operations, Kenan-Flagler Business School, University of North Carolina. Email: ajm@unc.edu. Homepage: ajmersereau.github.io.
- **Selva Nadarajah**, Associate Professor of Operations Management, College of Business Administration, University of Illinois Chicago. Email: selvan@uic.edu. Homepage: selvan.people.uic.edu.
- **Negar Soheili**, Associate Professor of Business Analytics, College of Business Administration, University of Illinois Chicago. Email: nazad@uic.edu. Homepage: nazad.people.uic.edu.