Parshan Pakiman

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Overview

I am a fourth-year Ph.D. student seeking a research internship position in summer 2020. My research advances machine learning, forecasting, reinforcement learning, planning, and data-driven optimization with applications in marketing, e-commerce, online retailing, and supply chain. It leverages state-of-the-art platforms (Gurobi, TensorFlow, CPLEX, Pyomo, and OpenAI Gym) for large-scale computing.

Education

University of Illinois at Chicago (UIC), Chicago, IL — Spring 2017 - Present

Ph.D. in: Information and Decision Sciences
Areas of research: Machine Learning and Operations Research
Co-advisors: Professors Selva Nadarajah and Negar Soheili

University of Illinois at Chicago (UIC), Chicago, IL — Spring 2017 - Present

M.Sc. in: Business Analytics

University of Tehran (UT), Tehran, Iran — Fall 2012 - Fall 2016

B.Sc. in: Applied Mathematics

Experiences

- Collaborated with Foresight ROI, Inc on a marketing lift forecasting and campaign optimization project (link to the resulting research paper: https://dl.acm.org/doi/10.1145/3292500.3330788). — Fall 2017 - Present
- Working with a major technology provider in fast-fashion sector to adaptively learn changing customer demand and modify pricing strategies to maximize revenue. — Spring 2019
- Teaching and implementation experience in graduate classes with statistical and machine learning forecasting methods and data mining techniques. — Fall 2014 - Present
- Collaborator on a multi-university and industry initiative to develop an open-source approximate dynamic programming and reinforcement learning platform to solve business problems. — Fall 2019

Research Interests

- Developing machine learning and inverse reinforcement learning techniques to construct predictive models and use them for forecasting in marketing and retailing domains.
- Designing algorithms that use forecasts to prescribe data-driven and robust decisions for pricing, e-commerce, and warehousing applications.
- Solving large-scale sequential decision making problems by combining techniques from approximate dynamic programming, randomized and high-dimensional sampling, and optimization.

Research Papers

- Self-guided Approximate Linear Programs, with Selvaprabu Nadarajah, Negar Soheili, and Qihang Lin. *Submitted to Management Science.* https://arxiv.org/abs/2001.02798. — Spring 2020
- SMOILE: A Shopper Marketing Optimization and Inverse Learning Engine, with Abhilash Reddy Chenreddy, Selvaprabu Nadarajah, Ranganathan Chandrasekaran, and Rick Abens. *In Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD '19).* https://dl.acm.org/doi/10.1145/3292500.3330788. — Summer 2019
- Convex Optimization using Random Features, with Selvaprabu Nadarajah. *Work in progress.* — Present
- Box-suite Optimization for Online Retailers, with Selvaprabu Nadarajah and Yun Fong Lim. *Work in progress.* — Present

Technical Skills

Programming language: Python, C++, C, R, Java, HTML, JavaScript
Python package: NumPy, SciPy, GurobiPy, TensorFlow, SciKitLearn, CVXPY, Pyomo, Matplotlib, Pandas
Software: Matlab, Tableau, Microsoft/Libre Office, RapidMiner
Operating systems: Linux, MacOS, Windows

Awards and Honors

Doctoral scholarship and fellowship:	Department of Information and Decision Sciences, University of Illinois at Chicago	Spring 2017 - Present
Top student award:	Department of Mathematics, Statistics and Computer Science, University of Tehran	Fall 2016
Technical qualification:	RoboCup Iran open, soccer 2D simulation league	Fall 2016
Technical qualification:	Khwarizmi international award, soccer 2D simulation league	Fall 2010

Invited Talks

Self-guided Approximate Linear Programs

POMS 30th Annual Conference, Washington D.C.	Spring 2019
INFORMS Annual Meeting, Phoenix, AZ	Fall 2018
POMS 29th Annual Conference, Houston, TX	Spring 2018

SMOILE: A Shopper Marketing Optimization and Inverse Learning Engine

The 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Anchorage, AK	Summer 2019

Teaching Experiences

Lecture for statistical models and methods for business analytics — Spring 2019 - Fall 2019

Topic: Applications of regression, classification and likelihood maximization
Slides: https://chicagodatascience.github.io/s19/575/

Teaching Assistant, University of Illinois at Chicago / University of Tehran — Spring 2014 - Present

Business data mining (IDS 472)
Business forecasting (IDS 476)
Statistical models and methods for business analytics (IDS 575)
Data science for online customer analytics (IDS 594)
Introduction to operations management (IDS 532)
Numerical linear algebra
Introduction to numerical analysis and scientific computing

Services

Reviewer

Computers & Operations Research	Spring 2019
Information Systems and Operational Research	Fall 2018
Electronic Commerce Research	Spring 2018 - Spring 2020

Session Chair

INFORMS Optimization Socity (IOS 2020), *Advances in Approximate Dynamic Programming and Reinforcement Learning*, Greenville, SC.	Spring 2020