

# Andrew A. Li

Carnegie Mellon University  
Tepper School of Business  
TEP 4225, 5000 Forbes Avenue, Pittsburgh, PA 15213  
aali1@cmu.edu

## ACADEMIC EMPLOYMENT

<b>Carnegie Mellon University</b> , Pittsburgh, PA Tepper School of Business <i>Assistant Professor of Operations Research</i> <i>BP Junior Faculty Chair (2021–2022)</i>	2018–
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## EDUCATION

<b>Massachusetts Institute of Technology</b> , Cambridge, MA Operations Research Center <i>Ph.D. Operations Research</i> <b>Thesis Advisor:</b> Vivek Farias <b>Thesis:</b> Algorithms for Large-Scale Personalization	2018
<b>Columbia University</b> , New York, NY School of Engineering and Applied Sciences <i>B.S. Operations Research</i> <b>Research Advisor:</b> Ward Whitt	2012

## NON-ACADEMIC EMPLOYMENT

<b>Hewlett-Packard</b> , Palo Alto, CA HP Labs, Mechanisms and Design Group <i>Research Associate</i>	2015
<b>Citigroup</b> , New York, NY Citi Commercial Bank <i>Global Risk Management Analyst</i>	2010

## PUBLICATIONS

### Articles in refereed conference proceedings

V. Farias, A. Li, T. Peng, A. Zheng. (*NeurIPS 2022*). Markovian Interference in Experiments.

**Oral Presentation (awarded to <2% of submissions)**

**Winner, INFORMS Applied Probability Society Best Student Paper Prize**

**Winner, INFORMS RM&P Student Paper Competition**

S. Jia, A. Li, R. Ravi. (*NeurIPS 2022*). Dynamic Pricing with Monotonicity Constraint under Unknown Parametric Demand Model.

V. Farias, A. Li, T. Peng. (*AISTATS 2022*). Uncertainty Quantification For Low-Rank Matrix Completion With Heterogeneous and Sub-Exponential Noise.

K. Gan, S. Jia, A. Li. (*NeurIPS 2021*). Greedy Approximation Algorithms for Active Sequential Hypothesis Testing.

V. Farias, A. Li, T. Peng. (*NeurIPS 2021*). Learning Treatment Effects in Panels with General Intervention Patterns.

**Oral Presentation (awarded to <1% of submissions)**

K. Gan, A. Li, Z. Lipton, S. Taylor. (*AISTATS 2021*). Causal Inference with Selectively-Deconfounded Data.

V. Farias, A. Li, T. Peng. (*ICML 2021*). Near-Optimal Entrywise Anomaly Detection for Low-Rank Matrices with Sub-Exponential Noise.

Z. Korkut, A. Li. (*AAAI 2021*). Disposable Multi-Armed Bandits for Online Platforms.

V. Farias, A. Li, D. Sinha. (*EC 2020*). Optimizing Offer Sets in Sub-Linear Time.

**Finalist, INFORMS RM&P Student Paper Competition**

V. Farias, A. Li. (*AISTATS 2017*) Optimal Recovery of Tensor Slices.

### Articles in refereed journals

A. Patel, K. Gan, A. Li, J. Weiss, S. Nouraie, S. Tayur, E. Novelli. (2021). Machine Learning Algorithms for Predicting Hospital Re-admissions in Sickle Cell Disease. *British Journal of Haematology*.

C. Corbo, A. Li, H. Poustchi, G. Lee, S. Stacks, R. Molinaro, P. Ma, T. Platt, S. Behzadi, R. Langer, V. Farias, O. Farokhzad. (2020). Analysis of the Human Plasma Proteome Using Multi-Nanoparticle Protein Corona Characterization for Detection of Alzheimer's Disease. *Advanced Healthcare Materials*.

V. Farias, A. Li. (2019) Learning Preferences with Side Information. *Management Science*.  
**Winner, INFORMS Nicholson Student Paper Competition**  
**Finalist, INFORMS Applied Probability Society Student Paper Competition**

A. Li, W. Whitt, J. Zhao. (2016) Staffing to Stabilize Blocking in Loss Models with Time-Varying Arrival Rates. *Probability in the Engineering and Informational Sciences*.

A. Li, W. Whitt. (2014) Approximate Blocking Probabilities in Loss Models with Independence and Distribution Assumptions Relaxed. *Performance Evaluation*.

C. Johnson, A. Li, A. Walker. (2014) Ordered Multiplicity Lists for Eigenvalues of Symmetric Matrices Whose Graph is a Linear Tree. *Discrete Mathematics*.

## COMPLETED ARTICLES

S. Jia, A. Li, R. Ravi. Markdown Pricing with Unknown Demand. Major Revision at *Management Science*.  
**Winner, Balas Award**

K. Gan, A. Li, Z. Lipton, S. Tayur. Causal Inference with Selectively-Deconfounded Data. Major Revision at *Management Science*.

V. Farias, A. Li, D. Sinha. Optimizing Offer Sets in Sub-Linear Time. Major Revision at *Management Science*.

K. Gan, S. Jia, A. Li, S. Tayur. Toward a Liquid Biopsy: Greedy Approximation Algorithms for Active Sequential Hypothesis Testing. Submitted  
**Co-Winner, Pierskalla Best Paper Award**

V. Farias, A. Li, T. Peng. Solving the Phantom Inventory Problem: Near-optimal Entry-wise Anomaly Detection. Submitted

V. Farias, A. Li, T. Peng. Causal Inference for Panel Data with General Treatment Patterns. Submitted  
**Finalist, INFORMS MSOM Best Student Paper Prize**

M. Korkut, A. Li. High-Dimensional Meta Linear Bandits. To be submitted

## SUBJECTS TAUGHT

\*Denotes courses that were created from scratch or substantially revamped

Course	Year	Rating (out of 5.0)
<i>*Applications of Operations Research (MBA)</i>	2022	4.79
	2021	5.00
	2020	4.85
	2019	4.74
	2018	4.54
<i>Optimization (MBA)</i>	2023	TBA
<i>Optimization for Prescriptive Analytics (MSBA)</i>	2022	4.81
<i>*Mathematical Models for Consulting (Undergraduate)</i>	2021	4.92
	2020	4.71
	2019	4.89
	2018	4.67
<i>Optimization for Business (Undergraduate)</i>	2021	4.85
	2020	4.91
	2019	4.95
<i>*Machine Learning for Business Analytics (Undergraduate)</i>	2021	4.68
	2020	4.84
<i>*Applications of High-Dimensional Statistics (PhD)</i>	2023	Not rated
	2021	Not rated
	2019	Not rated

Executive Education: SP Jain, Optum, Moderna, Mahindra, JSW Steel, Tata Group, PNC

## STUDENT ADVISING

Kyra Gan (PhD, CMU Tepper, with Sridhar Tayur) — Grad. 2022, first placement *CornellTech*

Su Jia (PhD, CMU Tepper, with R Ravi) — Grad. 2022, first placement *Cornell*

**Winner, INFORMS Dantzig Dissertation Prize**

Melda Korkut (PhD, CMU Tepper) — Grad. 2022, first placement *Amazon Research*

Tianyi Peng (PhD, MIT, with Vivek Farias) — Grad. 2023, first placement *Columbia GSB*

Lin An (PhD, CMU Tepper, with Ben Moseley) — Grad. 2026

## SERVICE AND ACTIVITIES

### CMU Tepper

Leader, MBA Business Analytics Track (2022–)

Co-Leader, ENAiBLE: CMU Retail & Services Collaborative (2021–)

Created new Undergraduate Minor in Business Analytics and Optimization (2020)

#### **51 students enrolled as of Fall 2022**

Capstone advisor, MSBA (2021)

Coordinator, Operations Research Seminar (2019–)

Member, BAEC (2022–)

Member, FSRC Committee (2019–2022)

Member, Balas Award Committee (2019, 2022)

Member, Thompson Award Committee (2019–)

Thesis Committee Member: Nam Ho-Nguyen (2019), Amin Hosseininassab (2020), Sagnik Das

Summer Paper Advisor: Su Jia (2019), Kyra Gan (2019), Sagnik Das (2019), Melda Korkut (2019)

Summer Paper Reader: Savannah Tang (2020)

### Community

Chair, INFORMS Pierskalla Award Committee (2022)

INFORMS Nicholson Prize Committee (2020–2022)

Session organizer: INFORMS Optimization Society (2020)

Ad-hoc reviewer: Operations Research, Management Science, Manufacturing & Service

Operations Management, Service Science, Production & Operations Management, Performance

Evaluation, NeurIPS, ICML, AISTATS, AAAI, MSOM Healthcare SIG, MSOM Supply Chain

Management SIG

## AWARDS & HONORS

NeurIPS Oral Presentation (2021, 2022)

NSF CAREER Award (Feb. 2023, \$550k): one of two awarded nationally in the area of OR in 2023

Winner, INFORMS Applied Probability Society Best Student Paper Prize (2022)

Winner, INFORMS RM&P Student Paper Competition (2022)

Finalist, INFORMS MSOM Best Student Paper Prize (2022)

Winner, INFORMS Pierskalla Best Paper Award (2021)

BP Junior Faculty Chair (2021–2022)

First Place, INFORMS Nicholson Student Paper Competition (2018)

Finalist, INFORMS Applied Probability Society Best Student Paper Prize (2018)

Best Student Paper Award, MIT Operations Research Center (2017)

NDSEG Fellowship (full funding for three years of graduate studies)

Thomas J. Watson Scholar (partial funding for four years of undergraduate studies)

Sebastian Littauer Award (ranked first in Columbia IEOR)

## RESEARCH GRANTS

NSF CAREER: *Optimization in the Race to a Liquid Biopsy*. \$550k. 2023-2028.

## PATENTS

HPE 90115764 (330.0510001). *Completion Contracts*. Submitted with F. Balestrieri, B. Huberman, J. Ward. Filed December 2015 with HPE Labs.