

Rajiv Sambharya

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Education

- **Ph.D., Princeton University** 2019-2024
Operations Research and Financial Engineering
Thesis: Learning to Accelerate Optimizers
Supervision: Bartolomeo Stellato
- **M.Sc. University of California - Berkeley** 2017-2018
Electrical Engineering and Computer Science
Supervision: Laurent El Ghaoui
- **B.Sc. University of California - Berkeley** 2013-2017
Electrical Engineering and Computer Science

Publications

Conference Proceedings

- C1 R. Sambharya, G. Hall, B. Amos, and B. Stellato, “[End-to-End Learning to Warm-Start for Real-Time Quadratic Optimization](#),” in *Proceedings of The 5th Annual Learning for Dynamics and Control Conference*, ser. Proceedings of Machine Learning Research, vol. 211, PMLR, 2023, pp. 220–234.

Preprints

- P1 R. Sambharya, G. Hall, B. Amos, and B. Stellato, “[Learning to Warm-Start Fixed-Point Optimization Algorithms](#),” *arXiv e-prints*: 2309.07835, 2023, (under review: *Journal of Machine Learning Research*).
- P2 A. Askari, G. Negiar, R. Sambharya, and L. E. Ghaoui, “[Lifted Neural Networks](#),” *arXiv e-prints*: 1805.01532, 2018.

Working Papers

- W1 R. Sambharya and B. Stellato, *Accelerating Non-Convex Optimization via Learned Sequential Convexifications*.
- W2 R. Sambharya and B. Stellato, *Learning Algorithm Steps for Fast Convex Optimization*.

Honors and Awards

- **Princeton Excellence in Teaching Award**: Top award winner in engineering 2021
- **Princeton McGraw Teaching Fellow**: Led orientation for new teaching assistants 2022-2023
- **Princeton SEAS Travel Grant Award**: (INFORMS) 2023

Talks

Accelerating Non-Convex Optimization via Learned Sequential Convexifications

- INFORMS Optimization Society Rice University, March 2024
- Conference on Information Sciences and Systems Princeton University, March 2024
- ICCOPT (old version) Lehigh University, July 2022

Learning to Warm-Start Fixed-Point Optimization Algorithms

- Yale Robotics Seminar Yale University, December 2023
- INFORMS Phoenix, AZ, October 2023
- MOPTA Lehigh University, August 2023

End-to-End Learning to Warm-Start for Real-Time Quadratic Optimization

- Learning for Dynamics and Control (Poster) University of Pennsylvania, June 2023
- NYC Operations day (Poster) Columbia University, May 2023
- INFORMS Indianapolis, IN, October 2022

Learning for Real-Time Semidefinite Optimization

- INFORMS Anaheim, CA (hybrid), October 2021

Teaching

- ORF498: Senior Thesis Fall 2023
- ORF363: Computing and Optimization for the Physical and Social Sciences Spring 2023
- ORF387: Networks Fall 2022
- ORF522: Linear and Nonlinear Optimization (Graduate-level) Fall 2021
- ORF307: Optimization Spring 2021 (Head TA), 2022
- ORF455: Energy and Commodities Markets Fall 2020

Software

- Learning to Warm-Start Fixed-Point Optimization Algorithms
<https://github.com/stellatogrp/l2ws>
- End-to-End Learning to Warm-Start for Real-Time Quadratic Optimization
https://github.com/stellatogrp/l2ws_qp

Industry Experience

- Machine Learning Engineer at Linc Global Sunnyvale, CA, July 2018 - July 2019
- Software Engineering Intern at Amazon Seattle, WA, June 2016 - August 2016

Service

- Princeton Optimization Seminar Organizer 2022-2023
- INFORMS Optimization Society Session Organizer 2024

Peer Review

- Learning for Dynamics and Control
- Integer Programming and Combinatorial Optimization

Technical Skills

- **Programming languages:** Python, Matlab, Julia, R, C, Java, SQL, HTML
- **Tools:** Git, \LaTeX , Slurm, GPU, JAX, PyTorch, Tensorflow