

Rohan Ghuge

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RESEARCH INTERESTS

Data-driven Optimization:

online learning learning from samples algorithms with predictions

Optimization under Uncertainty:

stochastic optimization role of adaptivity sequential testing

Combinatorial Optimization:

approximation algorithms online resource allocation network design

EMPLOYMENT

JUNE 2025 - PRESENT Assistant Professor of Decision Science
Department of Information, Risk, and Operations Management
McCombs School of Business, The University of Texas at Austin

JULY 2023 - JUNE 2025 Ronald J. and Carol T. Beerman/ARC Postdoctoral Fellow
Mentors: DR. VIDYA MUTHUKUMAR and DR. SAHIL SINGLA
Georgia Institute of Technology

MAY 2024- AUG 2024 Instructor for ISyE 4601: ONLINE LEARNING AND DECISION-MAKING
H. Milton Stewart School of Industrial and Systems Engineering
Georgia Institute of Technology

EDUCATION

MAY 2023 Ph.D. in INDUSTRIAL AND OPERATIONS ENGINEERING
Advisor: DR. VISWANATH NAGARAJAN
University of Michigan, Ann Arbor

MAY 2018 Master of Science and Engineering in COMPUTER AND INFORMATION SCIENCE
University of Pennsylvania

MAY 2016 Bachelor of Technology in COMPUTER ENGINEERING
Veermata Jijabai Technological Institute

JOURNAL PUBLICATIONS

1. **Rohan Ghuge**, Zhengjia Zhuo, Arpit Agarwal, and Viswanath Nagarajan. Semi-Bandit Learning for Monotone Stochastic Optimization. *Minor Revision in Operations Research*.
2. Rayen Tan, **Rohan Ghuge** and Viswanath Nagarajan. Informative Path Planning with Limited Adaptivity. *Forthcoming in INFORMS Journal of Computing*.
3. **Rohan Ghuge**, Anupam Gupta and Viswanath Nagarajan. Non-Adaptive Algorithms for Stochastic Score Classification and Explainable Halfspace Evaluation. **Operations Research**, 73(4):2204-2222, 2025. <https://pubsonline.informs.org/doi/10.1287/opre.2023.0431>
4. **Rohan Ghuge**, Anupam Gupta and Viswanath Nagarajan. The Power of Adaptivity for Stochastic Submodular Cover. **Operations Research**, 72(3): 1156-1176, 2024. <https://pubsonline.informs.org/doi/abs/10.1287/opre.2022.2388>
5. **Rohan Ghuge**, Joseph Kwon, Viswanath Nagarajan and Adetee Sharma. Constrained Assortment Optimization under the Paired Combinatorial Logit Model. **Operations Research**, 70(2): 786-804, 2022. <https://pubsonline.informs.org/doi/abs/10.1287/opre.2021.2188>.

6. **Rohan Ghuge** and Viswanath Nagarajan. Quasi-Polynomial Algorithms for Submodular Tree Orienteering and Other Directed Network Design Problems. **Mathematics of Operations Research**, 47(2):1612-1630, 2022. <https://pubsonline.informs.org/doi/10.1287/moor.2021.1181>.

CONFERENCE PUBLICATIONS

Note: Computer Science Conferences are peer reviewed (often with rebuttals) and considered comparable to journals. The authors are written in alphabetical order.

1. **Rohan Ghuge**, Vidya Muthukumar, and Sahil Singla. Improved and Oracle-Efficient Online ℓ_1 -Multicalibration. **49th International Conference on Machine Learning (ICML 2025)**. [Preprint](#).
2. **Rohan Ghuge**, Sahil Singla and Yifan Wang. Single-Sample and Robust Online Resource Allocation. **57th Annual ACM Symposium on Theory of Computing (STOC 2025)**. [Paper Link](#).
3. Arpit Agarwal, **Rohan Ghuge** and Viswanath Nagarajan. Semi-Bandit Learning for Monotone Stochastic Optimization. **65th IEEE Symposium on Foundations of Computer Science (FOCS 2024)**. [Paper Link](#).
4. **Rohan Ghuge**, Viswanath Nagarajan and Rayen Tan. Informative Path Planning with Limited Adaptivity. **27th International Conference on Artificial Intelligence and Statistics (AISTATS 2024)**. [Paper Link](#).
5. Arpit Agarwal, **Rohan Ghuge** and Viswanath Nagarajan. An Asymptotically Optimal Batched Algorithm for the Dueling Bandit Problem. **36th Annual Conference on Neural Information Processing Systems (NeurIPS 2022)**. [Paper Link](#)
6. Arpit Agarwal, **Rohan Ghuge** and Viswanath Nagarajan. Batched Dueling Bandits. **39th International Conference on Machine Learning (ICML 2022)**. *Long talk (top 2% of submissions)*. [Paper Link](#)
7. **Rohan Ghuge**, Anupam Gupta and Viswanath Nagarajan. Non-Adaptive Stochastic Score Classification and Explainable Halfspace Evaluation. **23rd International Conference on Integer Programming and Combinatorial Optimization (IPCO 2022)**. [Paper Link](#).
8. **Rohan Ghuge**, Anupam Gupta and Viswanath Nagarajan. The Power of Adaptivity for Stochastic Submodular Cover. **38th International Conference on Machine Learning (ICML 2021)**. *Long talk (top 3% of submissions)*. [Paper Link](#).
9. **Rohan Ghuge** and Viswanath Nagarajan. Quasi-Polynomial Algorithms for Submodular Tree Orienteering and Other Directed Network Design Problems. **31st ACM-SIAM Symposium on Discrete Algorithms (SODA 2020)**. [Paper Link](#).

SUBMITTED PAPERS

1. Yihua Xu, **Rohan Ghuge**, and Sebastian Perez-Salazar. Sequential Selection with Expirations. Submitted.

WORKING PAPERS

1. **Rohan Ghuge**, Vidya Muthukumar, and Sahil Singla, Improved Bounds for Online Multicalibration via Online Multigroup Learning.
2. **Rohan Ghuge**, Sahil Singla and Yifan Wang. Exponential Pricing for Online Resource Allocation.
3. **Rohan Ghuge**, Arpit Agarwal and Viswanath Nagarajan. Batched Algorithms for the Dueling Bandits Problem.

AWARDS

DEI Fellows Program Grant at Georgia Tech	2023
SLMath Travel Award	2023
Richard and Eleanor Towner Prize for Distinguished Academic Achievement Award	2023
International Conference on Machine Learning Travel Award	2022
Katta Murty Prize for Best Research Paper in Optimization	2022
Integer Programming and Combinatorial Optimization Conference Travel Award	2022
Rackham Travel Grant, University of Michigan	2021, 2019
ACM-SIAM Symposium on Discrete Algorithms Travel Award	2020, 2019

INTERNSHIPS AND RESEARCH VISITS

JAN-APR 2023	Institute for Computational and Experimental Research in Mathematics at Brown University Semester Program in Discrete Optimization: Mathematics, Algorithms, and Computation
MAY-AUG 2021	Intern at AMAZON.COM SERVICES LLC, Seattle, WA Worked on a column-generation approach to solve a highly constrained flight scheduling problem; solution approach: combination of Dantzig-Wolfe decomposition, column generation, and greedy heuristics
MAY-AUG 2020	Intern at AMAZON.COM SERVICES LLC, Seattle, WA Exploited structure in capacity allocation problem to achieve $\approx 20\%$ speed-up in runtime of MIP solver; achieved additional $\approx 20\%$ reduction in runtime by using pipage rounding

TALKS

- **Exponential Pricing for Online Resource Allocation**

ACM Symposium on Theory of Computing	June 2025
INFORMS Annual Meeting	October 2024
ICERM Discrete Optimization Workshop	August 2024

- **Semi-Bandit Learning for Monotone Stochastic Optimization.**

University of Texas-Austin, Theory Seminar	January 2026
Dagstuhl Seminar "Approximation Algorithms for Stochastic Optimization"	March 2025
IEEE Symposium on Foundations of Computer Science	October 2024
International Symposium on Mathematical Programming	July 2024

- **The Power of Adaptivity for Stochastic Submodular Cover**

SIAM Conference on Optimization	June 2023
IE Seminar, Purdue University	February 2023
ARC Seminar, Georgia Institute of Technology	February 2023
Operations & Logistics Seminar, University of British Columbia	December 2022
Young Researchers Workshop, Cornell	October 2022
INFORMS Annual Meeting	October 2021
International Conference on Machine Learning	July 2021

- **Batched Algorithms for the Dueling Bandits Problem**

INFORMS Annual Meeting	October 2023
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- **Batched Dueling Bandits**

INFORMS Annual Meeting	October 2022
International Conference on Machine Learning	July 2022
International Conference on Continuous Optimization	July 2022

- **Non-Adaptive Stochastic Score Classification and Explainable Halfspace Evaluation**

International Conference on Integer Programming & Comb. Opt.
INFORMS Optimization Society Conference

June 2022
March 2022

- **Quasi-Polynomial Algorithms for Submodular Tree Orienteering and Other Directed Network Design Problems**

INFORMS Annual Meeting
ACM-SIAM Symposium on Discrete Algorithms

November 2020
January 2020

- **Constrained Assortment Optimization under the Paired Combinatorial Logit Model**

INFORMS Annual Meeting

October 2019

TEACHING

SPRING 2026	Instructor, DS 235, Introduction to Decision Science , UT Austin
SPRING 2026	Instructor, DS 235H, Introduction to Decision Science (Honors) , UT Austin
SUMMER 2024	Instructor, ISyE 4601, Online Learning & Decision-Making , Georgia Tech
WINTER 2020	GSI, IOE 410, Advanced Optimization Methods , University of Michigan
FALL 2019	GSI, IOE 515, Stochastic Processes I , University of Michigan
SPRING 2018	TA, CIS 320, Introduction to Algorithms , University of Pennsylvania
SPRING 2018	TA, ESE 301, Introduction to Probability , University of Pennsylvania
FALL 2017	TA, CIS 520, Machine Learning , University of Pennsylvania
SUMMER 2017	TA, CIS 502, Analysis of Algorithms , University of Pennsylvania
SPRING 2017	TA, CIS 320, Introduction to Algorithms , University of Pennsylvania

SERVICE

Reviewing for Journals: Operations Research, Math Programming, Discrete Applied Mathematics, Discrete Optimization, Journal of Combinatorial Optimization, Math Programming, Networks, Operations Research Letters, SIAM Journal on Optimization

Reviewing for Conferences: EC 2026, COLT 2026, STOC 2026, IPCO 2026, SODA 2026, COLT 2025, APPROX 2025, APPROX 2024, MFCS 2024, IPCO 2024, STACS 2024, SODA 2024, APPROX 2023, ITCS 2023, SODA 2023, ESA 2022, SODA 2022, ICALP 2021, IPCO 2019