Swati Gupta

Associate Professor (untenured)
Massachusetts Institute of Technology

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Swati Gupta
Associate Professor (untenured)
Sloan School of Management, MIT
https://swatigupta.tech
January 20, 2026

I. Earned Degrees

Ph.D. 2017 Massachusetts Institute of Technology *Operations Research*
Thesis: *Combinatorial Structure in Online and Convex Optimization*
Advisors: Prof. Michel X. Goemans
and Prof. Patrick Jaillet

B.Tech and M.Tech. 2011 Indian Institute of Technology Delhi *Computer Science & Engg.*
Thesis: *Towards a 4/3-approximation for the Metric Traveling Salesman Problem*
Advisor: Prof. Naveen Garg

II. Employment History

Sloan School of Management, MIT
Associate Professor (untenured) *07/2024–Present*
Assistant Professor *07/2023–06/2024*

Georgia Institute of Technology
H. Milton Stewart School of Industrial and Systems Engineering
Fouts Family Early Career Professor *08/2020–06/2023*
School of Computer Science (by Courtesy) *08/2020–06/2023*
Assistant Professor *07/2018–06/2023*

Visiting Scientist, Simons Institute, UC Berkeley
Summer Cluster on Fairness *05/2019–07/2019*

Research Fellow, Simons Institute, UC Berkeley
Real Time Decision Making *01/2018–05/2018*
Bridging Discrete and Continuous Optimization *08/2017–12/2017*

IBM Research Labs, Zurich
Intern Scientist *06/2013–08/2013*

III. Honors and Awards

- **NSF CAREER Award** for "*Advancing Equity in Selection Problems Through Bias-Aware Optimization*", 2023 (terminated: April 2025)
- **NSF AI Institute** on *Advances in Optimization* as the lead for Ethical AI technical thrust, 2021-2023
- **Student Recognition of Excellence in Teaching**: Class of 1934 CIOS Honor Roll 2021, Georgia Institute of Technology
- **JP Morgan Chase Early Career Faculty Recognition**, 2021

- Multi-institution **DARPA Award** on *"Optimization for Trapped Ion Qubits"* (as Georgia Tech PI), 2018-2023
- **Student Recognition of Excellence in Teaching**: Class of 1934 CIOS Honor Roll 2020, Georgia Institute of Technology
- **Fouts Family Early Career Professorship** in H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology, 2020-2023
- **NSF Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII) Award** for "Faster Iterative Decisions Within First-Order Optimization Methods", Algorithmic Foundations, NSF 2019
- **Simons-Berkeley Research Fellowship** for Real-Time Decision Making, subsequently selected to be funded as a **Microsoft Research Fellowship**, Spring 2018
- **Simons-Berkeley Research Fellowship** for Bridging Continuous and Discrete Optimization, Fall 2017.
- **Google India Women in Engineering Award**, 2011

Selected Finalists, Research Spotlights and Other Honors:

- **Keynote**, Purdue Quantum AI, Gavriel Salvendy International Symposium on Frontiers in Industrial Engineering, October 2025
- **Keynote**, Lorentz Center's Workshop on Advanced Optimization for Social Choice, 2022
- Finalist in the **INFORMS 2022 Doing Good with OR** Competition (as co-author), 2022
- **Mixed Integer Programming Workshop** Student Poster Award (honorable mention, as advisor), 2022
- One of Two Georgia Tech's Institute **Nominees for Packard Fellowship**, 2021
- Finalist for **New Voices in Science, Engineering and Medicine Program 2021-2023**, an initiative of the National Academies of Sciences, Engineering and Medicine, 2021
- Best Paper Candidate in ACM Economics and Computation Conference (as co-author), 2019
- **Spotlight Paper** at Neural Information Processing Systems (NeurIPS) (as co-author), 2018
- Honorable Mention in **INFORMS Undergraduate Research Award** (as co-mentor), 2018
- Special Recognition by the **INFORMS Computing Society** (as co-author), 2016
- Finalist in **INFORMS Service Science Section Student Paper Competition** (as co-author), 2016

IV. Research

A. Refereed Publications

Publications typically follow the norms of the journal/area they are published in. Standard author order is alphabetical. Some publications have student authors first, which are indicated by a †. Deviations from these two author orders are explained with footnotes.

Journal papers are marked by (J) and conference papers by (C) .

A.1. Conference and Journal Papers

Optimization and Machine Learning

[1] [1]Adam Cheol Woo Kim, Jai Moondra, Shresth Verma, Madeleine Pollack, Lingkai Kong, Milind Tambe, Swati Gupta, "Navigating the Social Welfare Frontier: Portfolios for Multi-objective Reinforcement Learning".
Ⓒ *Forty-Second International Conference on Machine Learning*, **ICML 2025**.

[2] Swati Gupta, Jai Moondra, Mohit Singh, "Balancing Notions of Equity: Trade-offs Between Fair Portfolio Sizes and Achievable Guarantees".
Ⓒ *ACM-SIAM Symposium on Discrete Algorithms*, **SODA 2025**[2]
Ⓙ *Minor Revision* at **Mathematical Programming**, 2025.

[3] † Jad Salem, Swati Gupta, Vijay Kamble, "Algorithmic Challenges in Ensuring Fairness at the Time of Decision".
Ⓒ *18th Conference on Web and Internet Economics*, **WINE 2022**.
Ⓙ **Operations Research**, **2025**.

[4] Swati Gupta, Cyrus Hettle, Daniel Molzahn, "Fair and Reliable Reconnections for Temporary Disruptions in Electric Distribution Networks".
Ⓙ **INFORMS Journal on Computing**, **2025**.

[5] Yuri Faenza, Swati Gupta, Xuan Zhang, Aapeli Vuorinen "Reducing the Filtering Effect in Public School Admissions: A Bias-aware Analysis for Targeted Interventions".
Ⓒ *SIAM Conference on Applied & Computational Discrete Math*, **ACDA 2023**.
Ⓙ Submitted *2nd revision* at **Manufacturing & Service Operations Management**, **2025**.

[6] Yuri Faenza, Swati Gupta, Xuan Zhang, "Discovering Opportunities in New York City's Discovery Program: Disadvantaged Students in Highly Competitive Markets".
Ⓒ *24th ACM Conference on Economics and Computation*, **EC 2023**.
Ⓙ *Major Revision* at **Operations Research**, **2025**.
Finalist in the INFORMS 2022 Doing Good with OR Competition.

[7] Swati Gupta, Jai Moondra, Mohit Singh, "Which L_p norm is the fairest? Approximations for fair facility location across all 'p'. ".
Ⓒ *24th ACM Conference on Economics and Computation*, **EC 2023**.
Ⓙ Under review as "Provably Small Portfolios for Multiobjective Optimization with Application to Subsidized Facility Location".

[8] Majid Farhadi, Swati Gupta, Shengding Sun, Prasad Tetali, Michael Wigal, "Hardness and Approximations for Submodular Minimum Linear Ordering Problems".
Ⓙ **Mathematical Programming**, **2023**.

[9] † Jad Salem, Swati Gupta, "Secretary Problems with Biased Evaluations using Partial Ordinal Information".
Ⓒ *16th Conference on Web and Internet Economics*, **WINE 2020**[3].
Ⓙ **Management Science**, **2023**.
Media Coverage: *Resoundingly Human (INFORMS OR/MS Magazine), GT College of Engineering News, Diginomica*

[1]Lead student authors first (Kim and Moondra), lead PI last
[2]With invitation to the Special Issue on Transactions in Algorithms
[3]As "Closing the Gap: Mitigating Bias in Online Resume-Filtering"

[10] † Zhanzhan Zhao, Cyrus Hettle[4], Swati Gupta, Jonathan Mattingly, Dana Randall, Greg Herschlag, "Mathematically Quantifying Gerrymandering and Non-Responsiveness of the 2021 Georgia Congressional Districting Plan".
Ⓒ *2nd ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization* (oral presentation), **EAAMO 2022**.

[11] † Jai Moondra, Hassan Mortagy, Swati Gupta, "Reusing Combinatorial Structure: Faster Iterative Projections over Submodular Base Polytopes".
Ⓒ *34th Conference on Neural Information Processing Systems*, **NeurIPS 2021**.
Honorable Mention for Best Poster Award, Mixed Integer Programming Workshop, 2022.

[12] Swati Gupta, Vijay Kamble, "Individual Fairness in Hindsight".
Ⓒ *20th ACM Conference on Economics and Computation*, **EC 2019**.
Ⓙ **Journal of Machine Learning Research**, 22 (144): 1-35, 2021.
Best Paper Candidate in EC 2019,
Spotlight Talk at NeurIPS Workshop on Ethical, Social and Governance Issues in AI, 2018.

[13] † Cyrus Hettle, Shixiang Zhu, Swati Gupta, Yao Xie, "Balanced Redistricting for Faster Emergency Response under Imbalanced Historic Data".
Ⓒ *Foundations of Responsible Computing*, **FORC 2021**.

[14] † Hassan Mortagy, Swati Gupta, Sebastian Pokutta, "Walking in the Shadow: A New Perspective on Feasible Descent Directions".
Ⓒ *34th Conference on Neural Information Processing Systems*, **NeurIPS 2020**.
Ⓙ *Major revision* at **Mathematics of Operations Research**, **2024**.

[15] [5] Semih Cayci, Swati Gupta, Atilla Ermilyaz, "Group-Fair Online Allocation in Continuous Time".
Ⓒ *34th Conference on Neural Information Processing Systems*, **NeurIPS 2020**.

[16] Swati Gupta, Ali Khodabakhsh, Hassan Mortagy, Evdokia Nikolova, "Electric Flows over Spanning Trees".
Ⓙ **Mathematical Programming (Series B)**, Special Issue on Global Solution of Integer, Stochastic and Nonconvex Optimization Problems, 2020.

[17] Swati Gupta, Akhil Jalan, Gireeja Ranade, Helen Yang, Simon Zhuang, "Too many fairness metrics: Is there a solution?".
Ⓒ *Ethics of Data Science Conference*, **EDSC 2020**.
Ⓙ **Fields Institute Communication Series**, Springer (forthcoming).

[18] Maxime Cohen, Jeremy J. Kalas, Swati Gupta, Georgia Perakis, "An Efficient Algorithm for Dynamic Pricing using a Graphical Representation".
Ⓙ **Production and Operations Management**, 2020.
INFORMS Service Science Section Student Paper Competition Finalist, 2016.

[19] † Song Zhou, Swati Gupta, Madeleine Udell, "Limited Memory Kelley's Method Converges for Composite Convex and Submodular Objectives".
Ⓒ *32nd Conference on Neural Information and Processing Systems*, **NeurIPS 2018** (spotlight).
Honorable mention in the INFORMS UG Research Prize 2018.

[20] Iain Dunning, Swati Gupta, John Silberholz, "What Works Best When? A Systematic Evaluation of Heuristics for Max-Cut and QUBO".

[4] Second first author
[5] Senior authors are listed by the order of seniority.

(J) **INFORMS Journal on Computing**, 2018.
Notable Software: MQLib on Github.
Finalist in Michigan Institute for Data Science's (MIDAS) Reproducibility Challenge 2020.
Special Recognition in INFORMS Computing Society Student Paper Competition, 2016.

[21] Nishita Agarwal, Naveen Garg, Swati Gupta, "A 4/3 approximation for TSP on cubic 3-edge connected graphs".
(J) **Operations Research Letters**, 2018.

[22] Michel Goemans, Swati Gupta, Patrick Jaillet, "Newton's Method for Parametric Submodular Function Minimization".
(C) *Integer Programming and Combinatorial Optimization*, **IPCO 2017**, pp. 212-227. Springer, Cham.

[23] Swati Gupta, Thulasi J. Rangan and Amitabha Tripathi, "The two-color Rado number for ax + by = (a + b)z".
(J) **Annals of Combinatorics**, 2015.

Quantum and Classical Optimization

[24] Reuben Tate, Swati Gupta "Comparison of Hyperplane Rounding for Max-Cut and Quantum Approximate Optimization Algorithm over Certain Regular Graph Families".
(J) *Minor revision*, **Operations Research Letters**, 2026.

[25] [6] Jai Moondra, Phil Lotshaw, Greg Mohler, Swati Gupta, "Promise of Graph Sparsification and Decomposition on Noise Reduction: Analysis for Trapped-Ion Compilations for QAOA". Preprint available at arXiv: 2406.14330.
(J) *Revise and Resubmit*, **Quantum**, 2025.

[26] A. Abbas, A. Ambainis, B. Augustino, A. Bärtschi, H. Buhrman, C. Coffrin, G. Cortiana, V. Dunjko, D. Egger, B. Elmegreen, N. Franco, F. Fratini, B. Fuller, J. Gacon, C. Gonciulea, S. Gribling, S. Gupta, S. Hadfield, R. Heese, G. Kircher, T. Kleinert, T. Koch, G. Korpas, S. Lenk, J. Marecek, V. Markov, G. Mazzola, S. Mensa, N. Mohseni, G. Nannicini, C. O'Meara, E. Tapia, S. Pokutta, M. Proissl, P. Rebentrost, E. Sahin, B. CB Symons, S. Tornow, V. Valls, S. Woerner, M. Wolf-Bauwens, J. Yard, S. Yarkoni, D. Zechiel, S. Zhuk, C. Zoufal, "Quantum Optimization: Potential, Challenges, and the Path Forward".
(J) **Nature Reviews Physics**, 2024.

[27] [7] Reuben Tate, Jai Moondra, Bryan Gard, Greg Mohler, Swati Gupta, "Warm-Started QAOA with Custom Mixers Provably Converges and Computationally Beats Goemans-Williamson's Max-Cut at Low Circuit Depths".
(J) **Quantum** 7, 1121 2023.

[28] † Joel Rajakumar, Jai Moondra, Swati Gupta, Creston Herold, "Generating Target Graph Couplings for QAOA from Native Quantum Hardware Couplings".
(J) **Physical Review A**, 106(2), p.022606, 2022.

[29] [8] Reuben Tate, Majid Farhadi, Creston Herold, Greg Mohler, Swati Gupta, "Bridging Classical and Quantum using SDP initialized warm-starts for QAOA".
(J) **ACM Transactions in Quantum Computing**, 2022.

[6] Lead student author first. Lead PI last.
[7] Lead student author first. Lead PI last.
[8] Lead student first, lead PI last

Healthcare, Energy, Law and Other Applications

[30] [9] Mehak Arora, Hassan Mortagy, Nathan Dwarshuis, Jeffrey Wang, Philip Yang, Andre Holder, Swati Gupta, Rishi Kamaleswaran, "Improving Clinical Decision Support through Interpretable Machine Learning and Error Correction in Electronic Health Records".
(J) **Journal of the American Medical Informatics Association**, **2025**.

[31] [10]Madeleine Pollack, Ryan Pianski, Swati Gupta, Daniel Molzahn, "Equitably Allocating Wildfire Resilience Investments for Power Grids – The Curse of Aggregation and Vulnerability Indices".
(J) **Applied Energy**, Volume 388, **2025**.

[32] [11] William Won, Midhilesh Elavazhagan, Sudarshan Srinivasan, Ajaya Durg, Samvit Kaul, Swati Gupta, Tushar Krishna, "TACOS: Topology-Aware Collective Algorithm Synthesizer for Distributed Machine Learning".
(C) 57th *IEEE/ACM International Symposium on Microarchitecture*, **MICRO 2024**.

[33] Alessia Benevento, Swati Gupta, Massimo Pacella, Kamran Paynabar, "Sequential Sampling for Functional Estimation via SIEVE".
(J) **Quality and Reliability Engineering International**, **2024**.

[34] Deven Desai, Swati Gupta, Jad Salem, "Using Algorithms to Tame Discrimination: A Path To Algorithmic Diversity, Equity and Inclusion".
(J) **UC Davis Law Review**, **2023**.

[35] † Jad Salem, Deven R. Desai, Swati Gupta, "Don't let Ricci v. DeStefano Hold You Back: A Bias-aware Legal Solution to the Hiring Paradox".
(C) *ACM Conference on Fairness, Accountability and Transparency*, **FAccT 2022**.

[36] Cyrus Hettle, Louis Faugere, Simon Kwon, Swati Gupta, and Benoit Montreuil, "Generating clusters for urban logistics in hyperconnected networks"
(C) *8th International Physical Internet Conference,* **IPIC 2021**.

[37] Xinbo Geng, Swati Gupta, Le Xie, "Robust Look-ahead Three-phase Balancing of Uncertain Distribution Loads".
(C) *Hawaii International Conference on System Sciences*, **HICSS 2019**.

[38] Swati Gupta, Kristin LeFevre, Atul Prakash, "SPAN: A Unified Framework and toolkit for Querying Heterogenous Access Policies".
(C) *Proceedings of 4th Usenix Conference on Hot Topics in Security*, 2009.

A.2. Working Papers

[39] Diego M. Duvall, Swati Gupta, Madeleine Pollack. "Cost-Averse Learning with Mixed-Fidelity Bandit Feedback". *Working paper*.

[40] Thomas Daillak, Madeleine Pollack, Ju Young Lee, Prateek Gautam, Mehmet Toner, Korkut Uygun, Heidi Yeh, Swati Gupta, "Uncertainty-Aware AI Significantly Reduces Organ Non-Utilization Rates Through Regional Routing". *Working paper*.

[41] Swati Gupta and Alec Zhu, "Faster Parametric Line Search over Submodular Polytopes". *Working paper*.

[9]Lead student authors: Arora and Mortagy. Lead PIs: Gupta, Kamaleswaran.
[10]Lead student author first, senior contributors listed alphabetically.
[11]Lead student first, lead PI last.

[42] Swati Gupta and Jad Salem, "Gaming the Veil: Strategic Reporting Under Partial Transparency". *Working paper*.

[43] Swati Gupta, Jai Moondra, Mohit Singh, "Improved Regret Guarantees for Online Mirror Descent using a Portfolio of Mirror Maps". *Working paper*.

[44] † Swati Gupta, Jai Moondra, Mohit Singh, "Heirarchical Facility Location Problem with Portfolios". *Working Paper*.

[45] Swati Gupta, Andrew Trapp, Marcela Vasconcellos. "Alignment and Misalignment of Fairness Constraints in Real-World Recommendation Systems". *Working paper*.

[46] Brandon Augustino, Madelyn Cain, Edward Farhi, Swati Gupta, Sam Gutmann, Daniel Ranard, Eugene Tang, Katherine Van Kirk, "Strategies for Running the QAOA at Hundreds of Qubits". Preprint available at arXiv:2410.03015.

[47] [12] Swati Gupta, Michel Goemans, Patrick Jaillet, "Solving Combinatorial Games using Products, Projections and Lexicographically Optimal Bases". *Working paper.*
Preprint available at arXiv:1603.00522.

[48] Dimitris Bertsimas, Swati Gupta, Joel Tay, "A Scalable Robust and Adaptive Optimization Approach to Inventory Routing". *Working paper.*
Preprint available at optimization online.

A.3. Refereed Book Chapters

[1] Book Chapter: *Temporal Notions of Algorithmic Fairness*, by Swati Gupta, Vijay Kamble, Jad Salem, Ethics in Artificial Intelligence: Bias, Fairness and Beyond (2023): 53-69, 2023.

[2] [13] Book Chapter: *Computational Comparison of Metaheuristics* by John Silberholz, Bruce Golden, Swati Gupta, Xingyin Wang, Handbook of Metaheuristics, Springer 2018.

A.4. Other Peer-Reviewed Material

[1] Swati Gupta, Jai Moondra, Mohit Singh, "Which L_p norm is the fairest? Approximations for fair facility location across all 'p'. ", *Mixed Integer Programming Workshop*, 2023.

[2] Jai Moondra, Hassan Mortagy, Swati Gupta, "Reusing Combinatorial Structure for Projections over Submodular Polytopes", *Mixed Integer Programming Workshop*, 2022.
Honorable Mention for Best Poster Award, MIP 2022.

[3] Yuri Faenza, Swati Gupta, Xuan Zhang, "Reducing the Feeder Effect in Public School Admissions: A Bias-aware Analysis for Targeted Interventions", *Manufacturing & Service Operations Management (MSOM) Conference (flash talk)*, 2022.

[4] Yuri Faenza, Swati Gupta, Xuan Zhang, "Discovering opportunities in New York City's discovery program: an analysis of affirmative action mechanisms", *Manufacturing & Service Operations Management (MSOM) Conference (flash talk)*, 2022.
Finalist in INFORMS 2022 Doing Good with OR Competition.

[5] Jad Salem, Swati Gupta, Vijay Kamble, "Taming Wild Price Fluctuations: Regret Bounds for Monotone Stochastic Convex Optimization", *Revenue Management and Pricing Conference*, 2021.

[12] Student author first.
[13] Lead author first.

[6] Jad Salem, Swati Gupta, Vijay Kamble, "Taming Wild Price Fluctuations: Regret Bounds for Monotone Stochastic Convex Optimization", *Manufacturing and Service Operations Management (MSOM) Conference*, 2021.

[7] Jad Salem, Deven R. Desai, Swati Gupta, "Hiring Practices: Biased Data, Fairer Algorithms, and Discrimination Law", *Privacy Law Scholars Conference*, June 2021.

[8] Jad Salem, Deven R. Desai, Swati Gupta, "Hiring Practices: Biased Data, Fairer Algorithms, and Discrimination Law", *Data Law and Ethics Research Workshop*, April 2021.

[9] Swati Gupta, Akhil Jalan, Gireeja Ranade, Helen Yang, Simon Zhuang, "Too many fairness metrics: Is there a solution?", *Mechanism Design for Social Good Workshop*, 2020.

[10] Jad Salem, Swati Gupta, "Closing the Gap: Online Selections of Candidates with Biased Evaluations", *Mechanism Design for Social Good Workshop*, 2020.

[11] Swati Gupta, Ali Khodabakhsh, Hassan Mortagy, Evdokia Nikolova, "Electric Flows over Spanning Trees", *Mixed Integer Programming Workshop*, 2020.

[12] Michael Wang, Swati Gupta, "Fairness in the Face of Uncertainty", *NeurIPS Workshop on Ethical, Social and Governance Issues in AI*, 2018.

[13] Swati Gupta, Vijay Kamble, "Temporal Aspects of Individual Fairness", *NeurIPS Workshop on Ethical, Social and Governance Issues in AI*, 2018.
Spotlight presentation at the workshop 2018.

[14] Swati Gupta, Michel Goemans, Patrick Jaillet, "Bregman Projections over Submodular Base Polytopes", *NeurIPS Optimization for Machine Learning Workshop*, 2016.

[15] Swati Gupta, Michel Goemans, Patrick Jaillet, "Games People (could not) Play", *Grace Hopper Conference*, October 2015.

[16] Maxime Cohen, Jeremy Kalas, Swati Gupta, Georgia Perakis, "An Efficient Algorithm for Dynamic Pricing using a Graphical Representation", *Revenue Management and Pricing Conference*, 2015.

[17] Maxime Cohen, Jeremy Kalas, Swati Gupta, Georgia Perakis, "When Dynamic Pricing Meets Graph Theory", *Manufacturing and Service Operations Management (MSOM) Conference*, 2015.

A.5. Refereed Book Chapters

[1] Book Chapter: *Temporal Notions of Algorithmic Fairness*, by Swati Gupta, Vijay Kamble, Jad Salem, Ethics in Artificial Intelligence: Bias, Fairness and Beyond (2023): 53-69, 2023.

[2] [14] Book Chapter: *Computational Comparison of Metaheuristics* by John Silberholz, Bruce Golden, Swati Gupta, Xingyin Wang, Handbook of Metaheuristics, Springer 2018.

A.6. Other Peer-Reviewed Material

[1] Swati Gupta, Jai Moondra, Mohit Singh, "Which L_p norm is the fairest? Approximations for fair facility location across all 'p'. ", *Mixed Integer Programming Workshop*, 2023.

[2] Jai Moondra, Hassan Mortagy, Swati Gupta, "Reusing Combinatorial Structure for Projections over Submodular Polytopes", *Mixed Integer Programming Workshop*, 2022.
Honorable Mention for Best Poster Award, MIP 2022.

[14] Lead author first.

[3] Yuri Faenza, Swati Gupta, Xuan Zhang, "Reducing the Feeder Effect in Public School Admissions: A Bias-aware Analysis for Targeted Interventions", *Manufacturing & Service Operations Management (MSOM) Conference (flash talk)*, 2022.

[4] Yuri Faenza, Swati Gupta, Xuan Zhang, "Discovering opportunities in New York City's discovery program: an analysis of affirmative action mechanisms", *Manufacturing & Service Operations Management (MSOM) Conference (flash talk)*, 2022.
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[5] Jad Salem, Swati Gupta, Vijay Kamble, "Taming Wild Price Fluctuations: Regret Bounds for Monotone Stochastic Convex Optimization", *Revenue Management and Pricing Conference*, 2021.

[6] Jad Salem, Swati Gupta, Vijay Kamble, "Taming Wild Price Fluctuations: Regret Bounds for Monotone Stochastic Convex Optimization", *Manufacturing and Service Operations Management (MSOM) Conference*, 2021.

[7] Jad Salem, Deven R. Desai, Swati Gupta, "Hiring Practices: Biased Data, Fairer Algorithms, and Discrimination Law", *Privacy Law Scholars Conference*, June 2021.

[8] Jad Salem, Deven R. Desai, Swati Gupta, "Hiring Practices: Biased Data, Fairer Algorithms, and Discrimination Law", *Data Law and Ethics Research Workshop*, April 2021.

[9] Swati Gupta, Akhil Jalan, Gireeja Ranade, Helen Yang, Simon Zhuang, "Too many fairness metrics: Is there a solution?", *Mechanism Design for Social Good Workshop*, 2020.

[10] Jad Salem, Swati Gupta, "Closing the Gap: Online Selections of Candidates with Biased Evaluations", *Mechanism Design for Social Good Workshop*, 2020.

[11] Swati Gupta, Ali Khodabakhsh, Hassan Mortagy, Evdokia Nikolova, "Electric Flows over Spanning Trees", *Mixed Integer Programming Workshop*, 2020.

[12] Michael Wang, Swati Gupta, "Fairness in the Face of Uncertainty", *NeurIPS Workshop on Ethical, Social and Governance Issues in AI*, 2018.

[13] Swati Gupta, Vijay Kamble, "Temporal Aspects of Individual Fairness", *NeurIPS Workshop on Ethical, Social and Governance Issues in AI*, 2018.
Spotlight presentation at the workshop 2018.

[14] Swati Gupta, Michel Goemans, Patrick Jaillet, "Bregman Projections over Submodular Base Polytopes", *NeurIPS Optimization for Machine Learning Workshop*, 2016.

[15] Swati Gupta, Michel Goemans, Patrick Jaillet, "Games People (could not) Play", *Grace Hopper Conference*, October 2015.

[16] Maxime Cohen, Jeremy Kalas, Swati Gupta, Georgia Perakis, "An Efficient Algorithm for Dynamic Pricing using a Graphical Representation", *Revenue Management and Pricing Conference*, 2015.

[17] Maxime Cohen, Jeremy Kalas, Swati Gupta, Georgia Perakis, "When Dynamic Pricing Meets Graph Theory", *Manufacturing and Service Operations Management (MSOM) Conference*, 2015.

B. Media and Outreach

Media Mentions for Research

- *8 MIT AI experts to know,* The New York Times (paid post), 2024 (link)
- *Interview with Deep View's Editor Ian Krietzberg: MIT Professor on achieving Fair AI*, October 2024 (link)
- *Can we create better algorithms for screening candidates - and reduce hiring bias?*, by Neil Raden, Diginomica, August 2019 (link)
- *Meet Your Newest Job Recruiter, the Algorithm*, by Georgia Parmelee, Georgia Tech College of Engineering News, August 2019 (Also, GT ISyE News in September 2019) (link)
- *Looking at All the Angles*, MIT's Lab of Information and Decision Systems Magazine, 2016 (link)

Media Mentions for Grants and Awards

- *Quantum, Classical Computing Combine to Tackle Tough Optimization Problems*, by John Toon, GTRI communications, April 2022 (link).
- *NSF partnerships expand National AI Research Institutes to 40 states*, NSF, July 2021 (link)
- *Swati Gupta Appointed to Fouts Family Early Career Professorship*, Georgia Tech ISyE News, August 2020 (link)
- *DARPA Awards $9.2M Grant to Inter-agency Team Researching Quantum Computing*, Georgia Tech ISyE News, June 2020 (link)

Media Mentions for Teaching and Other Activities

- *Teaching in the Time of Covid-19*, Georgia Tech College of Engineering News, November 2020. (link)
- *FPF Research Coordination Network Helps Academic Stars Connect with Private Sector Privacy Pros at IAPP*, Future of Privacy Forum, May 2019 (link)

Outreach with Podcasts

- *Keeping Bias Out of Job Applications and School Admissions*, Resoundingly Human, INFORMS OR/MS Magazine, June 2020 (link)
- *VOICES podcast for Social Justice Episode 5: How Do Algorithms Impact Behavior Over Time? Plus, Data Privacy, Social Media Addiction, and the Election*, Constellations Center for Equity in Computing, Georgia Tech, October 2020 (link)
- *Bias in Algorithms* with Swati Gupta, Uncommon Engineer Podcast with Georgia Tech CoE Dean Steve McLaughlin, December 2019 (link)

Other Co-authored Articles

- *Making a Case for Research Collaboration Between Artificial Intelligence and Operations Research Experts*, CCC/INFORMS Workshop Series Final Report by Radhika Kulkarni, Gianluca Brero, Yu Ding, Swati Gupta, Sven Koenig, Ramayya Krishnan, Thiago Serra, Phebe Vayanos, Segev Wasserkrug, Holly Wiberg, April 2025 (link)
- *CCC-INFORMS AI/OR Workshop II Report*, by John Dickerson, Bistra Dilkina, Yu Ding, Swati Gupta, Pascal Van Hentenryck, Sven Koenig, Ramayya Krishnan, Radhika Kulkarni, Catherine Gill, Haley Griffin, Maddy Hunter, and Ann Schwartz (link)
- *OR/MS Education and Quantum Computing*, by Giacomo Nannicini, Swati Gupta, Sven Leyffer, Jim Ostrowski, Luis F. Zuluaga, August 2021 (link).
- *Research Vignette: Real-Time Decision Making in Energy (RTDM-E)*, by Xinbo Geng, Swati Gupta, Tong Huang, and Le Xie, Simons Institute News Stories, April 2019 (link)

C. Presentations

C.1. Keynote Addresses and Plenary Lectures

[1] One of 5 Keynotes, Purdue Quantum AI, Gavriel Salvendy International Symposium on Frontiers in Industrial Engineering, October 2025

[2] Lorentz Center's workshop on "Advanced Optimization for Social Choice", Leiden, July 2022

C.2. Selected Invited Conference and Workshop Presentations

[1] Continuous Optimization Workshop, at Foundations of Computational Mathematics, 8-18 July 2026

[2] 28th Combinatorial Optimization Workshop, CNRS Center Paul Langevin, Aussois, January 2026

[3] NSF Engineering Research Center for the Advanced Technologies for the Preservation of Biological Systems (ATP-Bio), University of Minnesota, November 2025

[4] AI & the Future of Human Capital in the Global South Symposium, September 29, 2025 (organized by the World Bank and the Georgia Washington University)

[5] Workshop on AI and Analytics for Social Good, University of Maryland, May 2025

[6] MIT Ethics of Computing Research Symposium, May 2025

[7] Dagstuhl Seminar 25121, Scheduling (Fairness in Resource Allocation), 2025

[8] Mixed Integer Programming International Workshop, Mumbai, 2024

[9] 25th International Symposium on Mathematical Programming, Montreal, 2024

[10] 26th Combinatorial Optimization Workshop, CNRS Center Paul Langevin, Aussois, January 2024 (distinguished lecture)

[11] Responsible AI Workshop, at Columbia Business School, September 2023

[12] Introduction to Algorithms Fairness and Equity, Simons Laufer Mathematical Sciences Institute, Berkeley, August 2023

[13] Summer School Lectures on Optimization, at Gene Golub SIAM Summer School, August 2023

[14] Invited Featured Talk, Gender Inclusion Workshop (GIW) at EC, July 2023

[15] The Jon-Shmuel Halfway to Twelfty Workshop, July 2023

[16] Panelist, "Implications of Data and Algorithms", Symposium on Social and Ethical Responsibilities of Computing, MIT, April 2023

[17] ICERM's workshop on Combinatorics and Optimization, Rutgers April 2023

[18] Los Alamos National Lab Grid Science Winter School and Conference, January 2023

[19] Simons Institute Workshop on Data-Driven Decision Making, November 2022

[20] Discrete Optimization Talks (Online DOT Seminars), April 2022

[21] NSF-FET Workshop on Ising Machines, Frontiers in Emerging Technologies within NSF's CISE (Computer and Information Science and Engineering) Directorate, April 2022

[22] NSF Tripods-X Workshop on ML & Supply Chain Management, Lehigh University, Dec 2021

[23] Theory of Computing for Fairness, a Simons Collaboration Project, December 2021

[24] IEEE Quantum Week 2021 Workshop, October 2021

[25] Auctions and Market Design Cluster, INFORMS Annual Meeting, November 2021

[26] ML for Industry Forum 2021, Lawrence Livermore National Laboratory, August 2021

[27] Crossing Disciplines: Studying Fairness, Bias, and Inequality in Management and Decision Sciences Research, at Harvard Business School, May 2021

[28] Georgia Tech Library's Symposium on the Interaction of Privacy and Autonomy, August 2020

[29] Classification Society Annual Meeting, San Diego, July 2020 (COVID postponement)

[30] INFORMS Optimization Society Conference, Greenville, Mar 2020 (COVID cancellation)

[31] AI for Public Health Workshop, Center for Disease Control, Mar 2020 (COVID postponement)

[32] Information Theory and Applications Workshop, San Diego, Feb 2020

[33] Optimization for ML Workshop, Vancouver, Dec 2019

[34] Conference on Optimization, Fields Institute, Toronto, November 2019

[35] Conference on Data Science and Optimization, Fields Institute, Toronto, November 2019

[36] Optimization in Power Systems, Power & Energy Systems Annual Meeting, August 2019

[37] Mixed Integer Programming Workshop (MIP) 2019, MIT, July 2019

[38] AMS Sectional Meeting, University of Hawaii at Manoa, March 2019

[39] Information Theory and Applications Workshop, UC San Diego, February 2019

[40] Workshop on Mathematical and Computational Challenges in Real-time Decision Making, Simons Institute, UC Berkeley, May 2018

[41] Workshop on Algorithms and Optimization, International Centre for Theoretical Sciences (ICTS), Bangalore, January 2018

C.3. Selected Invited Seminar Presentations

[1] Joint IEOR-DRO Seminar, Columbia University, April 2026

[2] Special Seminar Series on Quantum Computing, Georgia Institute of Technology, November 2025

[3] MIT Center for Computational Science and Engineering (CCSE) seminar series, September 2025

[4] Stanford Information Systems Lab (ISL) Colloquium, October 2025

[5] IIM Mumbai, September 2024

[6] Women in Data Science and Mathematics (WINDSMATH) Seminar Series, March 2024

[7] Rice University, March 2024

[8] NYU Stern School of Business, February 2024

[9] Princeton University, November 2023

[10] Texas A&M University, January 2023

[11] National Institute of Industrial Engineering (NITIE), Mumbai (online), India, November 2022

[12] University of California at Berkeley, October 2022

[13] Responsible AI at LinkedIn, Data Tech Talks (online), May 2022

[14] University of British Columbia, Sauder School of Business (online), March 2022

[15] Indian Institute of Science - MSR India Joint Theory Seminar (online), March 2022

[16] MIT Sloan School of Management (online), February 2022

[17] Georgia Tech Research Institute, February 2022

[18] Department of ISE (online), Lehigh University, April 2021

[19] Department of Industrial and Systems Engineering, Virginia Tech (online), March 2021

[20] Institute of Operations Research & Analytics, National University of Singapore, March 2021

[21] Algorithms and Randomness Center, Georgia Tech, February 2021

[22] MIT Operations Research Center, IAP Seminar on Policymaking in OR (online), January 2021

[23] Amazon Research, Seattle (online), January 2021

[24] Guest Lecture in Virginia Tech Course (online), December 2020

[25] IBM Research Zurich (online), November 2020

[26] LIONS Seminar, Arizona State University (online), October 2020

[27] Oracle Research Group (online), October 2020

[28] Zillow Group (online), August 2020

[29] Center for Operations Research and Econometrics (CORE), Belgium, February, 2019

[30] Stanford Theory Seminar, Stanford University, April 2018

[31] Google Research, Mountain View, February 2018

[32] Visa Research, November 2017

[33] Tepper School of Business, CMU, February 2017

[34] UCLA Anderson School of Management, February 2017

[35] Cornell University, ORIE, February 2017

[36] Yale School of Management, February 2017

[37] Booth School of Business, Chicago, January 2017

[38] School of Industrial and Systems Engineering, Georgia Tech, January 2017

[39] Northwestern University, IEMS, January 2017

[40] Google Research, NYC 2016

[41] Database Lab (CSE), Boston University, March 2016

C.4. Outreach to Law Professionals and Policy Makers

[1] Invited Panelist for **Trustworthy AI: Practical Roadmap for the Government**, organized by Snorkel AI, April 2022
Other panelists included representatives from Linkedin, FBI, Department of Navy, BNY Mellon, Snorkel.

[2] **Discovering Opportunities in New York City's Discovery Program**, Department of Education in New York, 2022
Jointly with Yuri Faenza and Xuan Zhang, on the incentive-misalignment in the discovery program.

[3] Invited featured academic speaker at **IAPP Global Privacy Summit**, April 2022
Jointly with Brenda Leong (Former Future of Privacy Forum) and Kat Robinson (NIKE), we conducted a 4-hour workshop on *AI for Privacy Professionals*, featuring bias in hiring.

[4] Invited featured academic speaker invited by the Future of Privacy Forum to present at the "Little Big Stage", **International Association of Privacy Professionals (IAPP)**, Washington DC, May 2, 2019.

[5] Invited Panelist, **Profiling, micro-targeting and a right to reasonable algorithmic inferences**, organized by Microsoft at the International Conference on Computers, Privacy, and Data Protection, in Brussels, January 30 - Feb 1, 2019.

[6] Invited Tutorial on **Bias and Fairness in ML/AI**, in collaboration with the Future of Privacy Forum, at the official side-event at the International Conference of Data Protection (ICDPPC), 2018 and the first lecture in the *Digital Data Flows Masterclass* lecture series organized by the Future of Privacy Forum.

C.5. Selected K-12 and Diversity, Inclusion and Equity Outreach Activities

[1] Guest Lecture to selected faculty from HBCUs and MSIs as a part of the teacher training program at the NSF AI Institute, June 2022

[2] Invited Talks to high schoolers at the Tapia Summer Camps, Tapia Center for Excellence and Equity in Education, Rice University, Texas, June 2021.

[3] Invited Seminar to upper-class level students at the Mount Vernon School, Sandy Springs, Georgia, September 2020.

[4] Invited Lecture[15] to 5th graders at the Peeples Elementary School, Fayette County, Georgia, October 2019.

[5] Seminar to 2nd graders at the Midvale Elementary School, Dekalb County, Atlanta Science Festival, March 2019

[6] Seminar at the Mission Possible Summer Camp, Georgia Tech, June 2018

[7] Instructor, Beginners I-II Sections, Class 5-6, module on "Growth and Decay of Exponentials", *Berkeley Math Circle, UC Berkeley*, a weekly Mathematics program for over 500 San Francisco Bay Area elementary, middle and high school students, January 2018

[8] "Power of Exponential", *BLOSSOMS educational video*, created with Nataly Youssef and John Silberholz. This video has been dubbed in Urdu and Mandarin. It is a part of the Florida High School Math Curriculum (CPALMS: resource 28034)

D. Grants

- **MIT-MGH HEALS Grant**, for *Reliable and Multi-criteria Human-AI Collaboration for Reduction in Organ Non-Utilization*, Overall funding: $300K, PIs: Swati Gupta (MIT) and Heidi Yeh (MGH), Collaborators: Georgia Perakis (MIT), Nikoloas Trichakis (MIT), Mehmet Toner (MGH), Korkut Uygun (MGH), November 2025-2026[16]
- **MIT HSI Intiative Seed Grant**, for *LLMs as Auditors: Bias Calibration and Resource Constrained Interventions on a Mental Health Platform*, Overall funding: $10K, PIs: Chara Podimata (MIT) and Swati Gupta (MIT), April 2025 - April 2026.
- **MIT SERC Seed Grant** for *Towards Equitable and Efficient Organ Transplantation through Longer Preservation Times*, Agency: Social and Ethical Responsibilities of Computing, MIT. Overall funding: $50K, Role: Principal Investigator, Collaborators: Mehmet Toner (MGH), Korkut Uygun (MGH), Heidi Yeh (MGH). Duration: August 2024 - July 2025.
- **NSF CAREER Award** for *Advancing Equity in Selection Problems Through Bias-Aware Optimization*, Agency: National Science Foundation, Overall funding: $\sim$ $530K, Role: Principal Investigator, Collaborators: none, Duration: July 2023 - June 2028, Candidate's Share: $\sim$ $531K. (*terminated on April 2025*)
- **NSF AI Institute on Advances in Optimization (AI4OPT)**, Agency: National Science Foundation, Overall funding: $\sim$ $20 million, Role: Lead of the Ethical AI Technical Thrust, Collaborator(s): Pascal Van Hentenryck (PI), Justin Romberg (co-PI), George Lan (co-PI), Bistra Dilkina (co-PI), Alper Atamturk (co-PI), Dorit Hochbaum (co-PI), Charles Pierre (co-PI), Period of Contract: July 2021 - 2026, Candidate's Share: $500-750K.
- **Optimization with Trapped Ion Qubits (OPTIQ)**, Agency: DARPA, Overall funding: $9.2 million, Role: Georgia Tech PI, Collaborators: Creston Herold (Georgia Tech Research Institute (lead institute)), John Bollinger, Travis Humble, Duration: January 2020 - January 2024, Candidate's Share: $705K.

[15] A news article by GT news was discussed at the Peeples Elemetary School,

[16] 1 out of 6 teams funded for full support out of 134 internal proposals.

- **Disparate Impact on Access to Service and Mitigation Strategies under Pandemic**, Agency: Thos and Clair Muller Research Endowment Fund, Georgia Tech, Overall Amount: $10K, Role: co-PI, Collaborators: Deven R. Desai, Duration: May 2020 - December 2020, Candidate's Share: $10K.
- **NSF CISE CRII Award** for *Faster Iterative Decisions within First-order Optimization Methods*, Agency: National Science Foundation, Overall Funding: $175K, Role: Principal Investigator, Collaborators: none, Duration: June 1 2019 - May 31 2021, Candidate's Share: $175K.

Funding for Workshop Organization:

- **Quantum Computing and Operations Research Workshop**, Agency: Fields Institute and National Science Foundation, Overall funding: $14,500 CAD, Role: co-PI, Collaborators: Giacomo Nannicini, Sven Leyffer, Luis Zuluaga, James Ostrowski, Merve Bodur and Ashley Montanaro, Duration: May 2022.
- **Focused Program on Data Science and Optimization**, Agency: Fields Institute, Overall Funding: $100K CAD, Role: co-PI, Collaborators: Sanjeena Dang, Antoine Deza, Paul McNicholas (McMaster University), Sebastian Pokutta and Masashi Sugiyama, Duration: November 2019.

V. Education

A. Courses Taught

Semester	Course Number	Course Title	Class Size
Lectures in Executive Education Short Courses			
Fall 2025	Executive Ed	MIT AI Executive Academy	
Spring 2025	Executive Ed	MIT AI Executive Academy	
Fall 2024	Executive Ed	Leading the AI Driven Organization	60
Fall 2024	Executive Ed	Frontiers of Generative AI	27
Spring 2024	Executive Ed	Leading the AI Driven Organization	60
Courses at MIT			
Spring 2025	15.071	The Analytics Edge	48
Spring 2025	15.071	The Analytics Edge	44
Fall 2024	LEAD Week	Fairness and Ethics in AI/ML	40+
Spring 2024	15.071	The Analytics Edge	33
Spring 2024	15.071	The Analytics Edge	50
Fall 2023	15.081/6.721	Introduction to Mathematical Programming	40
Courses taught at Georgia Institute of Technology's H. Milton Stewart School of Industrial and Systems Engineering (ISyE)			
Fall 2022	ISyE 7661	Linear Inequalities	9
Fall 2021	ISyE 4803-GUP	Online Learning and Decision Making	82
Spring 2021	ISyE 7686	Advanced Combinatorial Optimization	17
Fall 2020	ISyE 4803-GUP	Online Learning and Decision Making	72
Spring 2020	ISyE 7686	Advanced Combinatorial Optimization	6
Fall 2019	ISyE 4803-GUP	Online Learning and Decision Making	63
Spring 2019	ISyE 7686	Advanced Combinatorial Optimization	28

Semester	Course Number	Course Title	Class Size
Fall 2018	ISyE 4803-GUP	Online Learning and Decision Making	6

B. Individual Student Guidance

B.1. Ph.D. Students

B.1.a Graduated Ph.D. Students

1. **Jai Moondra**, Fall 2025, Georgia Institute of Technology (co-advised with Mohit Singh)
   Thesis: *New Directions in Multi-Objective Optimization with Applications*
   Notable Awards: ARC TRIAD Research Fellowship for Spring 2023
   First Position: Postdoctoral Associate, Carnegie Mellon University.
2. **Hassan Mortagy**, Spring 2023, Georgia Institute of Technology
   Thesis: *Bridging Discrete and Continuous Methods for Faster Optimization & ML*
   Notable Awards: Shabbir Ahmed Research Excellence Award at Georgia Tech, 2022; Honorable Mention in Mixed Integer Programming (MIP) Workshop Poster Competition, 2022; ARC TRIAD Research Fellowship for Spring 2021.
   First Position: OR Scientist, Roadie Inc/UPS.
3. **Jad Salem**, Spring 2023, Georgia Institute of Technology
   Thesis: *Online Learning with a View Toward Fairness*
   First Position: Assistant Professor, Department of Mathematics, US Naval Academy
4. **Reuben Tate**, Spring 2023, Georgia Institute of Technology
   Thesis: *Classical Optimization To Improve Variational Quantum Algorithms*
   First Position: Postdoc Researcher, Los Alamos National Labs

B.1.b. In Progress, Ph.D. Students

1. **Jonathan Zhou**, Operations Research Center, MIT
   Advising Start Date: August 2025 (co-advised with Rahul Mazumdar)
2. **Madeleine Pollack**, Operations Research Center, MIT
   Advising Start Date: August 2023
   Notable Awards: NSF Graduate Research Fellowship (Fall 2025-present); Davidson Family Tau Beta Pi Senior Engineering Award (2023)

B.1.c. Graduated Masters Students

1. **Ju Young Lee**, Course 6, 2025
   MIT Masters Thesis: An Interpretable Multimodal Framework for Regional Organ Transplantation Outcomes
2. **Thomas Daillak**, Operations Research Center, MIT
   Advising Dates: August 2024-2025, converted to PhD.

B.1.d. In Progress, Masters Students

1. **Milani Chatterji-Len**, LGO, Masters at NextEra Energy
   Advising Start Date: June 2025
   MIT Masters Thesis: Streamlining Early-Stage Risk Review Using Agentic AI

B.1.d Postdoctoral Associates

1. **Dr. Tianjiao Li**
   Thesis: *New Accelerated Methods for Optimization and Reinforcement Learning*
   PhD Thesis Advisor: George Lan
   Awards: Shabbir Ahmed PhD Fellowship for Excellence in Research, 2023
   Degree: Ph.D. in Operations Research, Georgia Institute of Technology
   Postdoc Duration: 2025 - present.
2. **Dr. Mehrdad Ghadiri**
   Thesis: *Scalable, Efficient, and Fair Algorithms for Structured Convex Optimization Problems*
   PhD Thesis Advisor: Santosh Vempala
   Awards: George B. Dantzig Dissertation Award (honorable mention)
   Degree: Ph.D. in Algorithms, Combinatorics and Optimization
   From School of Computer Science, Georgia Institute of Technology
   Postdoc Duration: 2023-2024.
3. **Dr. Brandon Augustino**
   Thesis: *Quantum Algorithms for Symmetric Cones*
   Advisors: Tamas Terlaky and Luis Zuluaga
   Degree: Ph.D. in Engineering
   From Department of Industrial and Systems Engineering, Lehigh University
   Postdoc Duration: 2023-2024.

B.2. Service on Thesis or Dissertation Committees

B.4.a Internal

- Rares Cristian (Operations Research Center, MIT), advised by Georgia Perakis.
  Committees: Thesis Proposal (Spring 2024), Thesis Defense (Spring 2025)
- Kimberly M Villalobos Carballo (Operations Research Center, MIT), advised by Dimitris Bertsimas. Committees: Thesis Defense (Fall 2023)

Internal Committees at Georgia Tech (2018-23):

- Krishna V Acharya (ISyE, Georgia Tech), advised by Juba Ziani.
  Committees: ML Qualifying Exam (Spring 2023)
- Samuel L. Hood (ISyE, Georgia Tech), advised by Joel Sokol.
  Committees: ML Qualifying Exam (Spring 2023)
- Li Chen (CS, Georgia Tech), advised by Richard Peng.
  Committees: Ph.D. proposal (Fall 2021), Defense (Summer 2023)
- Majid Farhadi (Math, Georgia Tech), advised by Prasad Tetali (CMU).
  Committees: Ph.D. Defense (Spring 2022)
- Majid Ahmadi (Public Policy, Georgia Tech), advised by Marilyn A. Brown.
  Committees: Ph.D. proposal (Spring 2022)
- Michael Wigal (Math, Georgia Tech), advised by Xingxing Yu.
  Committees: ACO Research Proposal Committee (Spring 2021)
- Matthew O'Shaughnessy (ECE, Georgia Tech), advised by C. J. Rozell & M. Davenport.
  Committees: Ph.D. proposal (Fall 2020), Defense (Fall 2021)
- Alejandro Agustin Carderera De Diego (ISyE, Georgia Tech), advised by Sebastian Pokutta.
  Committees: ML Quals Exam (Fall 2019), Proposal (Spring 2021), Defense (Fall 2021)
- Cyrille Combettes (ISyE, Georgia Tech), advised by Sebastian Pokutta.
  Committees: ML Quals (Spring 2019), Ph.D. proposal (Fall 2020), Defense (Spring 2021)

B.4.b External

- Fabian Spaeh, Department of Computer Science, Boston University.
  Advised by Alina Ene. Thesis Defense: April 2025.
- Philippe Olivier from Ecole Polytechnique de Montreal, Department of Math & IE.
  Advised by Andrea Lodi. Thesis Defense: May 2021.
- Ali Khodabhakhsh from UT Austin, Department of ECE.
  Advised by Evdokia Nikolova. Thesis Proposal: Spring 2019, Defense: February 2021.

VI. Service

A. Professional Contributions

A.1. Editorial Board Memberships

- Associate Editor, Open Journal of Mathematical Optimization, July 2020 - present
- Guest Editor for Fields Institute Communications Series on *Data Science and Optimization*, 2020 - 2024
- Guest Editor, Health Care Management Science, Special Issue on *Analytical Fairness in Healthcare*, 2021- 2024

A.2. Society Officers, Activities, and Membership

- **Leadership Roles**:
  - Organizing Committee, 2026 INFORMS Annual Meeting, 2026
  - Co-editor of OPTIMA, the newsletter of the Mathematical Optimization Society, 2021 - 2025
  - Lead for Technical Thrust of Ethical AI at NSF AI Institute on AI for Optimization, 2021 - 2023
  - INFORMS Computing Society's Quantum Computing Working Group 2020, along with Sven Leyffer, Giacomo Nannicini, Jim Ostrowski and Luis Zuluaga, 2020 - 2022
- **Award Committees**: INFORMS Computing Society Student Paper Competition Committee 2023, SIAM Conference on Applied and Computational Discrete Algorithms (ACDA) Best Student Presentation Prize Committee 2023, INFORMS Diversity Equity and Inclusion (DEI) Best Student Paper Award Committee 2022, INFORMS Doing Good with OR Student Paper Competition 2021
- **Membership in Societies**: Member of the Institute of Electrical and Electronic Engineers (**IEEE**) (2021-present), Member of the Mathematical Optimization Society (**MOS**) (2012-present), Member the Institute for Operations Research and the Management Sciences (**INFORMS**) (2012-present), Member of the Association for Computing Machinery (**ACM**) (2019-present), Member of the Society of Industrial and Applied Mathematics (**SIAM**) (2023-present)
- **Advisory Board:** GoSTEM, collaborative partnership at Georgia Tech between the Center for Education Integrating Science, Mathematics and Computing (CEISMC) and Institute Diversity, Equity and Inclusion (IDEI) (2021-2022)

A.3. Organization of Workshops and Conferences

- **Organizing Committee for Conferences and Workshops**: Invited Sessions at INFORMS (2012-present), Grid Science Winter School in January 2023[17], ICERM (Institute for Computational and Experimental Research in Mathematics, Brown University) Workshop on Trends

[17] with Russell Bent, Misha Chertkov, Harsha Nagarajan, Deepjyoti Deka, Kaarthik Sundar, Carleton Coffrin, Adam Mate

in Computational Discrete Optimization in April 2023[18], Workshop on Quantum Computing and Operations Research at Fields Institute in October 2022[19], CCC (Computing Community Consortium)-INFORMS Workshop on Artificial Intelligence and Operations Research Workshop in August 2022 [20], Integer Programming and Combinatorial Optimization (IPCO) 2021 [21], Focused Program on Data Science and Optimization at the Fields Institute, in November 2019[22]

- **Member of Technical Program Committees for Conferences**: Integer Programming and Combinatorial Optimization **IPCO 2026**, Integer Programming and Combinatorial Optimization **IPCO 2024**, Neural Information Processing Systems **NeurIPS 2023** (*area chair*), SIAM Conference on Applied and Computational Discrete Algorithms **ACDA 2023**, ACM Conference on Fairness, Accountability and Transparency **FAccT 2022** (*area chair*), ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization **EAAMO 2022**, International Symposium on Combinatorial Optimization ISCO 2022 (declined[23]), Web and Internet Economics **WINE 2021**, Workshop on Operations of People-Centric Systems **EC workshop 2021**, Foundations of Responsible Computing **FORC 2021** (and publications co-chair), The Web Conference **WWW 2021**, **AAAI** Conference on Artificial Intelligence 2020, **AAAI-20** AI for Social Impact Track 2020, Approximation Algorithms for Combinatorial Optimization Problems **APPROX 2019**

A.4. Technical Journal or Conference Referee Activities

- **Technical Journal Referee**: ACM Transactions on Algorithms, Quantum, INFORMS Journal on Optimization, Nature (Human Behavior), Management Science, Manufacturing and Service Operations (M&SOM), Mathematical Programming, SIAM Journal of Optimization, Operations Research, Networks, Naval Research Logistics, Discrete Optimization, Theory of Computing
- **Conference Referee**: International Conference on Learning Representations (ICLR) 2020, Neural Information Processing Systems (NeurIPS) 2020 and 2021, ACM-SIAM Symposium on Discrete Algorithms (SODA) 2021 and 2016, ACM-Symposium on Theory of Computing (STOC) 2018

A.5. Proposal Panels and Reviews

- Panelist for **National Science Foundation** Panels in the Computer and Information Science and Engineering Directorate (CISE): Robust Intelligence in 2021-22 and in 2019-20; Algorithmic Foundations in 2018-19
- External Reviewer for **Air Force Office of Scientific Research**, 2022
- External Reviewer for **Office of Naval Research**, 2020

B. Institute Contributions

B.1. Institute Committee Service

1. Schwarzman College of Computing, Future Research Cohort Committee, AY 2025-2026

[18] with Antoine Deza, Volker Kaibel, David Williamson, Sebastian Pokutta, Amitabh Base, Giacomo Nannicini
[19] with Giacomo Nannicini, Luis Zuluaga, Sven Leyffer, Merve Bodur, Ashley Montanaro and James Ostrowski
[20] with John Dickerson, Bistra Dilkina, Yu Ding, Pascal Van Hentenryck, Sven Koenig, Ramayya Krishnan, Radhika Kulkarni
[21] with Mohit Singh, Santanu Dey and Alejandro Toriello
[22] with Sebastian Pokutta, Sanjeena Dang, Antoine Deza, Paul McNicholas, Masashi Sugiyama
[23] Declined due to unexpected medical reasons.

2. SERC Seed Grants Review Committee, AY 2025-2026
3. Schwarzman College of Computing, Google Fellows Program, AY 2024-2025
4. Faculty Action Group, Social and Ethical Responsibilities of Computing (SERC), AY 2023-24

B.2. School Committee Service

1. Masters of Business Analytics Admission Committee, 2025-2026, MIT
2. Graduate Student Admission Committee, 2024 - 2025, Operations Research Center, MIT
3. Masters of Business Analytics Admission Committee, 2024-2025, MIT
4. Faculty Search Committee, 2024-2025, Operations Research and Statistics, Sloan School of Management, MIT
5. Graduate Student Admission Committee, 2023 - 2024, Operations Research Center, MIT
6. Faculty Search Committee, 2023-2024, Operations Research and Statistics, Sloan School of Management, MIT