Ellen Vitercik

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Academic History

- Carnegie Mellon University
  - Ph.D. in Computer Science, 2021
    - Thesis Advisors: Maria-Florina Balcan, Tuomas Sandholm
    - Thesis Committee: Eric Horvitz, Kevin Leyton-Brown, Ameet Talwalkar
  - M.S. in Computer Science, 2018
- Columbia University
  - B.A. in Mathematics, *summa cum laude*, 2015

Employment Record

- 2022–present: Assistant Professor, Stanford University
  - Departments: Management Science & Engineering; Computer Science
- 2021–2022: Miller Research Fellow (postdoctoral), University of California, Berkeley
  - Hosts: Jennifer Chayes; Michael I. Jordan
- 2019: Research Intern, Google, New York
  - Host: Andrés Muñoz Medina
- 2018: Research Intern, Microsoft Research New England
  - Host: Jennifer Chayes

Awards and Honors

- 2024 — AI2050 Early Career Fellowship (Schmidt Sciences)
- 2024 — National Science Foundation CAREER Award
- 2023 — Exemplary Artificial Intelligence Track Paper Award (ACM Conference on Economics and Computation)
- 2022–2025 — Gabilan Fellowship, Stanford University
- 2022 — Robert N. Noyce Faculty Fellow, Stanford University
- 2022 — Simons–Berkeley Research Fellowship (declined)
- 2021–2022 — Miller Research Fellowship, University of California, Berkeley

- 2021 — ACM SIGecom Doctoral Dissertation Award
- 2021 — Distinguished Dissertation Award, Carnegie Mellon University School of Computer Science
- 2021 — Victor Lesser Distinguished Dissertation (Honorable Mention), International Foundation for Autonomous Agents and Multiagent Systems
- 2019 — Best Presentation by a Student or Postdoctoral Researcher (ACM Conference on Economics and Computation)
- 2019 — Early Career Invited Lecture Award, University of British Columbia
- 2019–2021 — IBM PhD Fellowship
- 2019–2020 — Fellowship in Digital Health, CMU Center for Machine Learning and Health
- 2019 — Exemplary Artificial Intelligence Track Paper Award (ACM Conference on Economics and Computation)
- 2017 — Teaching Assistant of the Year, CMU Machine Learning Department
- 2016–2019 — National Science Foundation Graduate Research Fellowship
- 2016–2017 — Microsoft Research Women's Fellowship
- 2015–2021 — National Physical Science Consortium Fellowship (declined)

Bibliographical Information

Refereed Journal Publications

1. (2025) Maria-Florina Balcan, Tuomas Sandholm, and Ellen Vitercik. Generalization Guarantees for Multi-item Profit Maximization: Pricing, Auctions, and Randomized Mechanisms *Operations Research* (*OR*). (Supersedes paper in ACM Conference on Economics and Computation (EC) 2018.)
2. (2024) Maria-Florina Balcan, Dan DeBlasio, Travis Dick, Carl Kingsford, Tuomas Sandholm, and Ellen Vitercik. How Much Data is Sufficient to Learn High-Performing Algorithms? *Journal of the ACM* (*JACM*). (**Featured paper**; supersedes paper in ACM Symposium on Theory of Computing (STOC) 2021.)
3. (2024) Maria-Florina Balcan, Travis Dick, Tuomas Sandholm, and Ellen Vitercik. Learning to Branch: Generalization Guarantees and Limits of Data-Independent Discretization. *Journal of the ACM* (*JACM*). (Supersedes papers in International Conference on Machine Learning (ICML) 2018 and 2020.)

Refereed Journal Publications Submitted

1. (2024) Joon Suk Huh, Ellen Vitercik, and Kirthevasan Kandasamy. Bandit Profit-Maximization for Targeted Marketing. Submitted to *Operations Research*. Status: Major revision requested. (Supersedes paper in ACM Conference on Economics and Computation (EC) 2024.)

2. (2024) Wenshuo Guo, Nika Haghtalab, Kirthevasan Kandasamy, and Ellen Vitercik. Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. Submitted to *Operations Research*. Status: Minor revision requested. (Supersedes paper in ACM Conference on Economics and Computation (EC) 2023.)

Refereed Conference/Symposia Proceedings

1. (2025) Yu He and Ellen Vitercik. Primal-Dual Neural Algorithmic Reasoning. *International Conference on Machine Learning* (*ICML*). **Spotlight** (2.6% of all submissions).

2. (2025) Judy Hanwen Shen, Ellen Vitercik, and Anders Wikum. Algorithms with Calibrated Machine Learning Predictions. *International Conference on Machine Learning* (*ICML*). **Spotlight** (2.6% of all submissions).

3. (2025) Jingruo Sun, Wenzhi Gao, Ellen Vitercik, and Yinyu Ye. Wait-Less Offline Tuning and Re-solving for Online Decision Making. *International Conference on Machine Learning* (*ICML*).

4. (2025) Haotian Zhai, Connor Lawless, Ellen Vitercik, and Liu Leqi. EquivaMap: Leveraging LLMs for Automatic Equivalence Checking of Optimization Formulations. *International Conference on Machine Learning* (*ICML*).

5. (2025) Connor Lawless, Yingxi Li, Anders Wikum, Madeleine Udell, and Ellen Vitercik. LLMs for Cold-Start Cutting Plane Separator Configuration. *Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research* (*CPAIOR*).

6. (2025) Siddharth Prasad, Ellen Vitercik, Maria-Florina Balcan, and Tuomas Sandholm. New Sequence-Independent Lifting Techniques for Cutting Planes and When They Induce Facets. *International Joint Conference on Artificial Intelligence* (*IJCAI*).

7. (2024) Joon Suk Huh, Ellen Vitercik, and Kirthevasan Kandasamy. Bandit Profit-Maximization for Targeted Marketing. *ACM Conference on Economics and Computation* (*EC*).

8. (2024) Alexandre Hayderi, Amin Saberi, Ellen Vitercik, and Anders Wikum. MAGNOLIA: Matching Algorithms via GNNs for Online Value-to-Go Approximation. *International Conference on Machine Learning* (*ICML*).

9. (2023) Wenshuo Guo, Nika Haghtalab, Kirthevasan Kandasamy, and Ellen Vitercik. Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. *ACM Conference on Economics and Computation* (*EC*). **Exemplary AI Track Award.**

10. (2023) Christian Borgs, Jennifer Chayes, Christian Ikeokwu, and Ellen Vitercik. Disincentivizing Polarization in Social Networks. *ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization* (*EAAMO*).

11. (2022) Maria-Florina Balcan, Siddharth Prasad, Tuomas Sandholm, and Ellen Vitercik. Structural Analysis of Branch-and-Cut and the Learnability of Gomory Mixed Integer Cuts. *Conference on Neural Information Processing Systems* (*NeurIPS*).

12. (2022) Wenshuo Guo, Michael I. Jordan, and Ellen Vitercik. No-Regret Learning in Partially-Informed Auctions. *International Conference on Machine Learning* (*ICML*).

13. (2022) Maria-Florina Balcan, Siddharth Prasad, Tuomas Sandholm, and Ellen Vitercik. Improved Sample Complexity Bounds for Branch-and-Cut. *International Conference on Principles and Practice of Constraint Programming* (*CP*).

14. (2021) Maria-Florina Balcan, Siddharth Prasad, Tuomas Sandholm, and Ellen Vitercik. Sample Complexity of Tree Search Configuration: Cutting Planes and Beyond. *Conference on Neural Information Processing Systems* (*NeurIPS*).

15. (2021) Ellen Vitercik and Tom Yan. Revenue Maximization via Machine Learning with Noisy Data. *Conference on Neural Information Processing Systems* (*NeurIPS*).

16. (2021) Maria-Florina Balcan, Dan DeBlasio, Travis Dick, Carl Kingsford, Tuomas Sandholm, and Ellen Vitercik. How Much Data Is Sufficient to Learn High-Performing Algorithms? Generalization Guarantees for Data-Driven Algorithm Design. *ACM Symposium on Theory of Computing* (*STOC*).

17. (2021) Andrés Muñoz Medina, Umar Syed, Sergei Vassilvitskii, and Ellen Vitercik. Private Optimization without Constraint Violations. *International Conference on Artificial Intelligence and Statistics* (*AISTATS*).

18. (2021) Maria-Florina Balcan, Tuomas Sandholm, and Ellen Vitercik. Generalization in Portfolio-Based Algorithm Selection. *AAAI Conference on Artificial Intelligence* (*AAAI*).

19. (2020) Maria-Florina Balcan, Tuomas Sandholm, and Ellen Vitercik. Refined Bounds for Algorithm Configuration: The Knife-Edge of Dual Class Approximability. *International Conference on Machine Learning* (*ICML*).

20. (2020) Maria-Florina Balcan, Tuomas Sandholm, and Ellen Vitercik. Learning to Optimize Computational Resources: Frugal Training with Generalization Guarantees. *AAAI Conference on Artificial Intelligence* (*AAAI*).

21. (2019) Maria-Florina Balcan, Tuomas Sandholm, and Ellen Vitercik. Estimating Approximate Incentive Compatibility. *ACM Conference on Economics and Computation* (*EC*). **Exemplary AI Track Award.**

22. (2019) Daniel Alabi, Adam Kalai, Katrina Ligett, Cameron Musco, Christos Tzamos, and Ellen Vitercik. Learning to Prune: Speeding Up Repeated Computations. *Conference on Learning Theory* (*COLT*).

23. (2019) Christian Borgs, Jennifer Chayes, Nika Haghtalab, Adam Kalai, and Ellen Vitercik. Algorithmic Greenlining: An Approach to Increase Diversity. *AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society* (*AIES*).

24. (2018) Maria-Florina Balcan, Travis Dick, and Ellen Vitercik. Dispersion for Data-Driven Algorithm Design, Online Learning, and Private Optimization. *IEEE Symposium on Foundations of Computer Science* (*FOCS*).

25. (2018) Maria-Florina Balcan, Tuomas Sandholm, and Ellen Vitercik. A General Theory of Sample Complexity for Multi-Item Profit Maximization. *ACM Conference on Economics and Computation* (*EC*).

26. (2018) Maria-Florina Balcan, Travis Dick, Tuomas Sandholm, and Ellen Vitercik. Learning to Branch. *International Conference on Machine Learning* (*ICML*).

27. (2018) Bernhard Haeupler, Amirbehshad Shahrasbi, and Ellen Vitercik. Synchronization Strings: Channel Simulations and Interactive Coding for Insertions and Deletions. *International Colloquium on Automata, Languages and Programming* (*ICALP*).

28. (2017) Maria-Florina Balcan, Vaishnavh Nagarajan, Ellen Vitercik, and Colin White. Learning-Theoretic Foundations of Algorithm Configuration for Combinatorial Partitioning Problems. *Conference on Learning Theory* (*COLT*).

29. (2016) Maria-Florina Balcan, Tuomas Sandholm, and Ellen Vitercik. Sample Complexity of Automated Mechanism Design. *Conference on Neural Information Processing Systems* (*NeurIPS*).

30. (2016) Maria-Florina Balcan, Ellen Vitercik, and Colin White. Learning Combinatorial Functions from Pairwise Comparisons. *Conference on Learning Theory* (*COLT*).

Refereed Conference/Symposia Proceedings Submitted

1. (2025) Vaggos Chatziafratis, Ishani Karmarkar, Yingxi Li, and Ellen Vitercik. Accelerating Data-Driven Algorithm Selection for Combinatorial Partitioning Problems.

2. (2025) Yu He, Ishani Karmarkar, and Ellen Vitercik. Overcoming Information Bottlenecks in Directed Graph Neural Networks through Rewiring.

3. (2025) Yu He, Yingxi Li, Colin White, and Ellen Vitercik. DSR-Bench: Evaluating the Structural Reasoning Abilities of LLMs via Data Structures.

4. (2025) Mika Jain, Stefanie Jegelka, Ishani Karmarkar, Luana Ruiz, and Ellen Vitercik. Graph Data Selection with GNN Performance Guarantees.

5. (2025) Yingxi Li, Ellen Vitercik, and Mingwei Yang. Smoothed Analysis of Online Metric Matching with a Single Sample: Beyond Metric Distortion.

Presentations

Invited Plenary Talks and Distinguished Lectures

1. (2022) Automated Algorithm and Mechanism Configuration. ACM Conference on Economics and Computation (EC), SIGecom Doctoral Dissertation Award.

2. (2019) Machine Learning as a Tool for Algorithm Design. Early Career Invited Lecture Award. University of British Columbia, Faculty of Science.

Other Invited Presentations

1. (2025) MAGNOLIA: Matching Algorithms via GNNs for Online Value-to-go Approximation. INFORMS Annual Meeting.

2. (2025) Machine Learning for Discrete Optimization: Theoretical Foundations. Simons Workshop on Graph Learning Meets Theoretical Computer Science.

3. (2025) MAGNOLIA: Matching Algorithms via GNNs for Online Value-to-go Approximation. EC Workshop on the Optimum Online Policy for Matching and Allocation.
4. (2025) Algorithms with Calibrated Machine Learning Predictions. EC Gender Inclusion Workshop.
5. (2025) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. EC Workshop on Online Learning and Economics.
6. (2025) Online Matching with Graph Neural Networks. Workshop on Algorithms, Learning, and Games (ALGA).
7. (2025) Machine Learning for Online Matching and Integer Programming. Dagstuhl Seminar on Learned Predictions for Data Structures and Running Time.
8. (2024) Online Matching with Graph Neural Networks. Banff International Research Station, New Directions in Machine Learning Theory Workshop.
9. (2024) Online Matching with Graph Neural Networks. YinzOR Conference.
10. (2024) Online Matching with Graph Neural Networks. Toyota Technological Institute at Chicago, Workshop on Learning-Augmented Algorithms.
11. (2024) Online Matching with Graph Neural Networks. Summer Workshop on Innovations in Management Science (SWIMS).
12. (2024) From Large to Small Datasets: Size Generalization for Clustering Algorithm Selection. International Symposium on Mathematical Programming (ISMP).
13. (2024) From Large to Small Datasets: Size Generalization for Clustering Algorithm Selection. AAAI Workshop on Artificial Intelligence for Operations Research.
14. (2024) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. Simons Institute, Data-Driven Decision Processes Reunion.
15. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. INFORMS Annual Meeting.
16. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. Cornell Tech, Urban Tech Workshop.
17. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. Institute for Pure and Applied Mathematics (IPAM), Workshop on Artificial Intelligence and Discrete Optimization.
18. (2023) Machine Learning for Algorithm Design. Stanford University, CS & EE New Research Directions Workshop.
19. (2022) Machine Learning for Algorithm Design. Simons Institute, Data-Driven Decision Processes Boot Camp.
20. (2022) Generalization Guarantees for Multi-Item Profit Maximization: Pricing, Auctions, and Randomized Mechanisms. Google, Mountain View, Search-Ads Spotlight Series.

21. (2022) Theoretical Foundations of Machine Learning for Cutting Plane Selection. Stanford University, Women's Theory Forum.

22. (2022) Machine Learning for Tree Search Configuration: Cutting Planes and Beyond. Simons Foundation Symposium on New Directions in Theoretical Machine Learning.

23. (2022) Estimating Approximate Incentive Compatibility. Workshop on Algorithmic Game Theory: Past, Present, and Future (Workshop for Noam Nisan's 60th Birthday).

24. (2022) Sample Complexity of Tree Search Configuration: Cutting Planes and Beyond. AAAI Workshop on Machine Learning for Operations Research.

25. (2022) Sample Complexity of Tree Search Configuration: Cutting Planes and Beyond. STOC Workshop on Algorithms with Predictions.

26. (2022) Private Optimization Without Constraint Violations. Workshop on Algorithms for Learning and Economics (WALE).

27. (2022) Data-Driven Auction Design. Miller Institute, UC Berkeley.

28. (2021) Theoretical Foundations of Data-Driven Algorithm Design. Google, Learning Theory Workshop.

29. (2021) How Much Data is Sufficient to Learn High-Performing Algorithms? Machine Learning for Algorithms Workshop, Foundations of Data Science Institute.

30. (2021) How Much Data is Sufficient to Learn High-Performing Algorithms? IPAM Workshop on Deep Learning and Combinatorial Optimization.

31. (2021) Generalization Guarantees for Multi-Item Profit Maximization: Pricing, Auctions, and Randomized Mechanisms. INFORMS Annual Meeting.

32. (2021) Automated Parameter Optimization for Integer Programming. ICML Workshop on AutoML.

33. (2020) How Much Data is Sufficient to Learn High-Performing Algorithms? NeurIPS Workshop on Learning Meets Combinatorial Algorithms.

34. (2020) Estimating Approximate Incentive Compatibility. Tel-Aviv University, Young Researcher Workshop on Economics and Computation.

35. (2019) Estimating Approximate Incentive Compatibility. INFORMS Annual Meeting.

36. (2019) Estimating Approximate Incentive Compatibility. EC Workshop on Machine Learning in the Presence of Strategic Behavior.

37. (2019) Learning to Branch. Cornell ORIE Young Researchers Workshop.

38. (2019) A General Theory of Sample Complexity for Multi-Item Profit Maximization. EC INFORMS Workshop on Market Design.

39. (2018) A General Theory of Sample Complexity for Multi-Item Profit Maximization. INFORMS Annual Meeting.

40. (2018) A General Theory of Sample Complexity for Multi-Item Profit Maximization. China Theory Week.

41. (2018) A General Theory of Sample Complexity for Multi-Item Profit Maximization. AAMAS-IJCAI Workshop on Agents and Incentives in Artificial Intelligence.

42. (2018) Learning-Theoretic Foundations of Algorithm Configuration for Combinatorial Partitioning Problems. INFORMS Annual Meeting.

43. (2018) Dispersion for Data-Driven Algorithm Design, Online Learning, and Private Optimization. Northwestern Quarterly Theory Workshop.

44. (2017) Sample Complexity of Multi-Item Profit Maximization. Dagstuhl Workshop on Game Theory Meets Computational Learning Theory.

45. (2017) Sample Complexity of Multi-Item Profit Maximization. ACM EC Workshop on Algorithmic Game Theory and Data Science.

46. (2017) Differentially Private Algorithm and Auction Configuration. Carnegie Mellon University, Theory Lunch.

47. (2017) Foundations of Application-Specific Algorithm Configuration. MIT, Machine Learning Tea.

48. (2017) Foundations of Application-Specific Algorithm Configuration. Microsoft Research New England, Machine Learning Lunch.

Contributed Conference Presentations

1. (2021) How Much Data is Sufficient to Learn High-Performing Algorithms? ACM Symposium on Theory of Computing (STOC).

2. (2021) Private Optimization without Constraint Violations. International Conference on Artificial Intelligence and Statistics (AISTATS).

3. (2021) Generalization in Portfolio-Based Algorithm Selection. AAAI Conference on Artificial Intelligence.

4. (2020) Refined Bounds for Algorithm Configuration: The Knife-Edge of Dual Class Approximability. International Conference on Machine Learning (ICML).

5. (2019) Estimating Approximate Incentive Compatibility. ACM Conference on Economics and Computation (EC).

6. (2019) Learning to Prune: Speeding up Repeated Computations. Conference on Learning Theory (COLT).

7. (2018) Learning to Branch. International Conference on Machine Learning (ICML).

8. (2018) A General Theory of Sample Complexity for Multi-Item Profit Maximization. ACM Conference on Economics and Computation (EC).

9. (2016) Learning Submodular Functions from Pairwise Comparisons. Conference on Learning Theory (COLT).

Department Seminars

1. (2025) Machine Learning for Discrete Optimization: Theoretical Foundations. University of Massachusetts Amherst, Computer Science Theory Seminar.
2. (2025) Size Generalization in Learning-Augmented Optimization. Johns Hopkins University, Applied Mathematics and Statistics Seminar.
3. (2024) From Large to Small Datasets: Size Generalization for Clustering Algorithm Selection. Massachusetts Institute of Technology, Theory of Computing Colloquium.
4. (2024) From Large to Small Datasets: Size Generalization for Clustering Algorithm Selection. Oregon State University, AI Seminar.
5. (2024) From Large to Small Datasets: Size Generalization for Clustering Algorithm Selection. Stanford University, Information Systems Laboratory Colloquium.
6. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. Stanford Graduate School of Business, Operations, Information & Technology Seminar.
7. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. University of Wisconsin–Madison, Systems, Information, Learning and Optimization Seminar.
8. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. University of Chicago Booth School of Business, Operations Seminar.
9. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. University of Massachusetts Amherst, CS Theory Seminar.
10. (2023) Leveraging Reviews: Learning to Price with Buyer and Seller Uncertainty. Stanford University, Statistics Seminar.
11. (2022) How Much Data is Sufficient to Learn High-Performing Algorithms? University of Massachusetts Amherst, Algorithms with Predictions Seminar.
12. (2021) How Much Data is Sufficient to Learn High-Performing Algorithms? Worcester Polytechnic Institute, Computer Science Colloquium.
13. (2021) How Much Data is Sufficient to Learn High-Performing Algorithms? Purdue University, Theory Seminar.
14. (2021) Integrating Machine Learning into Algorithm Design. University of Texas at Austin, Computer Science Seminar.
15. (2021) Integrating Machine Learning into Algorithm Design. New York University, Computer Science Colloquium.
16. (2021) Integrating Machine Learning into Algorithm Design. Columbia University, Computer Science Colloquium.

17. (2021) Integrating Machine Learning into Algorithm Design. University of British Columbia, Computer Science Seminar.

18. (2021) Integrating Machine Learning into Algorithm Design. University of Waterloo, Computer Science Seminar.

19. (2021) Integrating Machine Learning into Algorithm Design. Harvard University, Computer Science Colloquium.

20. (2021) Integrating Machine Learning into Algorithm Design. Princeton University, Computer Science Colloquium.

21. (2021) Integrating Machine Learning into Algorithm Design. University of California, Los Angeles, Computer Science Seminar.

22. (2021) Integrating Machine Learning into Algorithm Design. California Institute of Technology, Frontiers in Computing and Mathematical Sciences Symposium.

23. (2021) Integrating Machine Learning into Algorithm Design. Massachusetts Institute of Technology, Sloan Operations Research and Statistics Seminar.

24. (2021) Integrating Machine Learning into Algorithm Design. Stanford University, Management Science & Engineering Seminar.

25. (2021) Integrating Machine Learning into Algorithm Design. Georgia Institute of Technology, School of Computer Science Seminar.

26. (2021) Integrating Machine Learning into Algorithm Design. Microsoft Research New England, Seminar.

27. (2020) Integrating Machine Learning into Algorithm Design. Columbia University, Industrial Engineering and Operations Research Seminar.

28. (2020) How Much Data is Sufficient to Learn High-Performing Algorithms? Stanford University, CS Theory Lunch.

29. (2020) How Much Data is Sufficient to Learn High-Performing Algorithms? Columbia University, Theory Seminar.

30. (2017) Sample Complexity of Multi-Item Profit Maximization. Harvard University, Economics and CS Research Seminar.

31. (2016) Sample Complexity of Automated Mechanism Design. University of Pennsylvania, Theory Lunch.

Students and Postdoctoral Researchers Supervised

Ph.D. Students

Current

- Yu He; advised by Ellen Vitercik.

- Mika Jain; Ellen Vitercik and Greg Valiant, Associate Professor of Computer Science, serve equally as co-advisors.
- Nikil Selvam; Ellen Vitercik and Sanmi Koyejo, Assistant Professor of Computer Science, serve equally as co-advisors.
- Yingxi Li; advised by Ellen Vitercik.
- Anders Wikum; advised by Ellen Vitercik.
- Ishani Karmarkar; primary advisor is Aaron Sidford, Associate Professor of Management Science and Engineering; Ellen Vitercik serves as secondary advisor.

Postdoctoral Researchers

Current

- Nico Christianson; Ellen Vitercik and Ram Rajagopal, Associate Professor of Civil and Environmental Engineering, serve equally as co-advisors.
- Xizhi Tan; Ellen Vitercik, Aviad Rubenstein, Associate Professor of Computer Science, and Amin Saberi, Professor of Management Science and Engineering, serve equally as co-advisors.
- Connor Lawless; Ellen Vitercik and Madeleine Udell, Assistant Professor of Management Science and Engineering, serve equally as co-advisors.

Masters Students (with refereed publications)

Former

- Jingruo Sun. Management Science & Engineering. Graduation: 2025.
- Alexandre Hayderi. Computer Science. Graduation: 2024.

Professional Activities

Journal Editing

- Associate Editor, *INFORMS Journal on Computing* (2024–present)
- Action Editor, *Transactions on Machine Learning Research* (*TMLR*) (2024–present)

Workshop and Tutorial Organization

- Tutorial Co-Organizer & Presenter, "LLMs for Optimization: Modeling, Solving, and Validating with Generative AI," AAAI Conference on Artificial Intelligence (2026).
- Tutorial Organizer & Presenter, "Machine Learning for Discrete Optimization: Theoretical Guarantees and Applied Frontiers," AAAI Conference on Artificial Intelligence (2024)
- Workshop Co-organizer, "New Directions in Machine Learning Theory," Banff International Research Station (2024)

- Tutorial Organizer & Presenter, "Machine Learning for Algorithm Design: Theoretical Guarantees and Applied Frontiers," Cargese–Porquerolles Workshop on Combinatorial Optimization (2023)
- Workshop Co-organizer, "Sampling and Optimization in Discrete Space," ICML (2023)
- Tutorial Co-Organizer & Presenter, "Automated Mechanism Design for Pricing and Auctions," AAAI, ACM Symposium on Theory of Computing (STOC), and ACM Conference on Economics and Computation (EC) (2018–2021)

Conference Leadership Roles

- Program Committee Chair, Learning on Graphs Conference (LoG) (2025)
- Workshop Chair, ACM Conference on Economics and Computation (EC) (2024–2025)

Program Committees Roles

- Senior Program Committee, Conference on Learning Theory (COLT) (2024, 2025)
- Area Chair, International Conference on Machine Learning (ICML) (2024)
- Session Chair, INFORMS Annual Meeting (2018, 2025)

Memberships & Affiliations

- Co-founder, Learning Theory Alliance (2021–present)

University and Departmental Service

- Co-organizer, RAIN (Research on Algorithms and Incentives in Networks) Seminar (2025-present)
- Rising Stars in Data Science Faculty Committee Member (2025)
- Ph.D. Admissions Committee Member Computer Science Department (2022, 2024)
- Faculty Search Committee Member, Management Science & Engineering Department (2023)