

**Madeleine Udell**  
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<b>Academic Employment</b>	<b>Stanford University</b>	Stanford, CA
	Assistant Professor	July 2022 –
	Management Science and Engineering and, by courtesy, Electrical Engineering Gabilan Fellow Affiliated with the Institute of Computational and Mathematical Engineering, Stanford Data Science, Human Centered AI, and BioX	
	<b>Cornell University</b>	Ithaca, NY
	Associate Professor with tenure	July 2022
	Assistant Professor	July 2016 – June 2022
	Department of Operations Research and Information Engineering Richard and Sybil Smith Sesquicentennial Fellow Graduate field member in Operations Research, Computer Science, Applied Mathematics, Data Science, Statistics, Electrical and Computer Engineering, and Systems Engineering	
	<b>California Institute of Technology</b>	Pasadena, CA
	Postdoctoral Fellow, Center for the Mathematics of Information	June 2015 – June 2016
<b>Education</b>	<b>Stanford University</b>	Stanford, CA
	Ph.D. in Computational and Mathematical Engineering	June 2015
	GPA: 4.0. Thesis: <i>Generalized Low Rank Models</i> . Advisor: Stephen P. Boyd.	
	<b>Yale University</b>	New Haven, CT
	B.S. in Mathematics and Physics	June 2009
	<i>Summa cum laude</i> , with honors in mathematics and honors in physics. GPA: 3.95. Thesis: <i>Local Parametrizations via Laplacian Eigenfunctions</i> . Advisor: Peter W. Jones.	
<b>Papers</b>	<b>In the pipeline</b>	
	11. T. Diamandis, Z. Frangella, S. Zhao, B. Stellato, and M. Udell. GeNIOS: an (almost) second-order operator-splitting solver for large-scale convex optimization. <i>Submitted to Math Programming Computation</i> , 2023, 2310.08333	
	10. A. AhmadiTeshnizi, W. Gao, and M. Udell. OptiMUS: Optimization modeling using MIP solvers and large language models. <i>Submitted to ICLR</i> , 2023, 2310.06116	
	9. P. Rathore, Z. Frangella, and M. Udell. PROMISE: Preconditioned stochastic optimization methods by incorporating scalable curvature estimates. <i>Submitted to JMLR</i> , 2023, 2309.02014	
	8. M. Van Ness, T. Bosschieter, N. Din, A. Ambrosy, A. S. Singh, and M. Udell. Interpretable survival analysis for heart failure risk prediction. In <i>Machine Learning for Health (ML4H)</i> , 2023, 2310.15472	

7. K. Tyser, J. Lee, A. Shporer, M. Udell, D. Te'eni, and I. Drori. OpenReviewer: Mitigating challenges in LLM reviewing. *Submitted to ICLR*, 2023
6. Z. Frangella, S. Zhao, T. Diamandis, B. Stellato, and M. Udell. On the (linear) convergence of generalized newton inexact ADMM, 2023, 2302.03863
5. Z. Frangella, P. Rathore, S. Zhao, and M. Udell. SketchySGD: Reliable stochastic optimization via robust curvature estimates. *In revision at SIMODS*, 2022, 2211.08597
4. Y. Zhao and M. Udell. gcimpute: A package for missing data imputation. *Accepted at Journal of Statistical Software*, 2023, 2203.05089
3. B. Liu, M. Xie, H. Yang, and M. Udell. ControlBurn: Nonlinear feature selection with sparse tree ensembles, 2022
2. S. Zhao, L. Lessard, and M. Udell. An automatic system to detect equivalence between iterative algorithms. *Submitted to Mathematical Programming*, 2021, 2105.04684
1. L. Ding, J. Fan, and M. Udell.  $k$ FW: A Frank-Wolfe style algorithm with stronger subproblem oracles. *In revision at Computational Optimization and Applications*, 2020, 2006.16142

## Refereed Journal Articles

19. D. Kouri, Z. Hua, and M. Udell. A greedy galerkin method to efficiently select sensors for linear dynamical systems. *Linear Algebra and its Applications*, 2023
18. Z. Frangella, J. A. Tropp, and M. Udell. Randomized Nyström preconditioning. *SIAM Journal on Matrix Analysis and Applications*, 2022, 2110.02820
17. L. Ding and M. Udell. A strict complementarity approach to error bound and sensitivity of solution of conic programs. *Optimization Letters*, 2022, 2012.00183
16. J. Fan, L. Ding, C. Yang, and M. Udell. Low-rank tensor recovery with Euclidean-norm-induced Schatten-p quasi-norm regularization. *Transactions on Machine Learning Research*, 2023, 2012.03436
15. N. Sengupta, M. Udell, N. Srebro, and J. Evans. Sparse data reconstruction, missing value and multiple imputation through matrix factorization. *Sociological Methodology*, 2022
14. L. Ding and M. Udell. On the simplicity and conditioning of low rank semidefinite programs. *SIAM Journal on Optimization (SIOPT)*, 2021, 2002.10673
13. L. Ding, A. Yurtsever, V. Cevher, J. A. Tropp, and M. Udell. An optimal-storage approach to semidefinite programming using approximate complementarity. *SIAM Journal on Optimization (SIOPT)*, 2021, 1902.03373
12. J. Fan, C. Yang, and M. Udell. Robust non-linear matrix factorization for dictionary learning, denoising, and clustering. *IEEE Trans. Signal Processing (TSP)*, 69:1755–1770, 2021, 2005.01317

11. R. Muthukumar, D. P. Kouri, and M. Udell. Randomized sketching algorithms for low-memory dynamic optimization. *SIAM Journal on Optimization (SIOPT)*, 31(2):1242–1275, 2021
10. A. Yurtsever, J. A. Tropp, O. Fercoq, M. Udell, and V. Cevher. Scalable semidefinite programming. *SIAM Journal on Mathematics of Data Science (SIMODS)*, 3(1):171–200, 2021, 1912.02949
9. Y. Sun, Y. Guo, C. Luo, J. A. Tropp, and M. Udell. Low-rank Tucker approximation of a tensor from streaming data. *SIAM Journal on Mathematics of Data Science (SIMODS)*, 2(4):1123–1150, 2020, 1904.10951
8. J. A. Tropp, A. Yurtsever, M. Udell, and V. Cevher. Streaming low-rank matrix approximation with an application to scientific simulation. *SIAM Scientific Computing (SISC)*, 41(4):A2430–A2463, 2019, 1902.08651
7. M. Udell and O. Toole. Optimal design of efficient rooftop photovoltaic arrays. *INFORMS Journal on Applied Analytics (Interfaces)*, 49(4):281–294, 2019
6. M. Udell and A. Townsend. Why are big data matrices approximately low rank? *SIAM Journal on Mathematics of Data Science (SIMODS)*, 1(1):144–160, 2019, 1705.07474
5. N. Kallus and M. Udell. Dynamic assortment personalization in high dimensions. *Operations Research*, 2019, 1610.05604
4. J. A. Tropp, A. Yurtsever, M. Udell, and V. Cevher. Practical sketching algorithms for low-rank matrix approximation. *SIAM Journal of Matrix Analysis and Applications (SIMAX)*, 38(4):1454–1485, 2017, 1609.00048
3. M. Udell, C. Horn, R. Zadeh, and S. Boyd. Generalized low rank models. *Foundations and Trends in Machine Learning*, 9(1), 2016, 1410.0342
2. M. Udell and S. Boyd. Bounding duality gap for separable problems with linear constraints. *Computational Optimization and Applications*, 64(2):355–378, 2016, 1410.4158
1. E. Birch, M. Udell, and M. Covert. Incorporation of flexible objectives and time-linked simulation with flux balance analysis. *Journal of Theoretical Biology*, 345:12–21, 2014

## Refereed Conference Proceedings

33. M. Van Ness, T. Bosschieter, R. Halpin-Gregorio, and M. Udell. The missing indicator method: From low to high dimensions. In *29th SIGKDD Conference on Knowledge Discovery and Data Mining - Applied Data Science Track*, 2023, 2211.09259
32. C.-H. Chang, J. Yoon, S. Arik, M. Udell, and T. Pfister. Data-efficient and interpretable tabular anomaly detection. In *SIGKDD Conference on Knowledge Discovery and Data Mining - Applied Data Science Track*, 2023
31. I. Drori, S. J. Zhang, R. S. Shuttleworth, S. Zhang, K. Tyser, Z. Chin, P. Langtigua, S. Surbehera, G. Hunter, D. Austin, L. Tang, Y. Hicke, S. Simhon, S. Karnik, D. Granberry, and M. Udell. From human days to machine seconds: Automatically answering and generating machine learning final exams. In *SIGKDD Conference on Knowledge Discovery and Data Mining - Applied Data Science Track*, 2023

30. Y. Zhao, A. Townsend, and M. Udell. Probabilistic missing value imputation for mixed categorical and ordered data. In *NeurIPS*, 2022, 2210.06673
29. C. Yang, G. Bender, H. Liu, P.-J. Kindermans, M. Udell, Y. Lu, Q. Le, and D. Huang. Resource-constrained neural architecture search on tabular datasets. In *NeurIPS*, 2022, 2204.07615
28. S. Zhao, Z. Frangella, and M. Udell. NysADMM: faster composite convex optimization via low-rank approximation. In *International Conference on Machine Learning (ICML)*, 2022, 2202.11599
27. C. Yang, Z. Wu, J. Chee, C. D. Sa, and M. Udell. How low can we go: Trading memory for error in low-precision training. In *International Conference on Learning Representations (ICLR)*, 2022, 2106.09686
26. Y. Zhao, E. Landgrebe, E. Shekhtman, and M. Udell. Online missing value imputation and correlation change detection for mixed-type data via gaussian copula. In *AAAI*, 2021, 2009.12326
25. W. T. Stephenson, Z. Frangella, M. Udell, and T. Broderick. Can we globally optimize cross-validation loss? Quasiconvexity in ridge regression. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2021, 2107.09194
24. B. Liu, M. Xie, and M. Udell. ControlBurn: Feature selection by sparse forests. In *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2021, 2107.00219
23. C. Yang, L. Ding, Z. Wu, and M. Udell. TenIPS: Inverse propensity sampling for tensor completion. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2021, 2101.00323
22. I. Drori, B. Kates, W. Sickinger, A. Kharkar, B. Dietrich, A. Shporer, and M. Udell. Galaxy TSP: A new billion-node benchmark for TSP. In *NeurIPS Workshop on Learning Meets Combinatorial Algorithms*, 2020
21. I. Drori, A. Kharkar, W. R. Sickinger, B. Kates, Q. Ma, S. Ge, E. Dolev, B. Dietrich, D. P. Williamson, and M. Udell. Learning to solve combinatorial optimization problems on real-world graphs in linear time. In *IEEE International Conference on Machine Learning and Applications (IEEE ICMLA)*, 2020, 2006.03750
20. W. Stephenson, M. Udell, and T. Broderick. Approximate cross-validation with low-rank data in high dimensions. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2020, 2008.10547
19. Y. Zhao and M. Udell. Matrix completion with quantified uncertainty through low rank gaussian copula. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2020, 2006.10829
18. C. Yang, J. Fan, Z. Wu, and M. Udell. AutoML pipeline selection: Efficiently navigating the combinatorial space. In *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2020, 2006.04216

17. Y. Zhao and M. Udell. Missing value imputation for mixed data through gaussian copula. In *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2020, 1910.12845
16. J. Fan, Y. Zhang, and M. Udell. Polynomial matrix completion for missing data imputation and transductive learning. In *Thirty-Fourth AAAI Conference on Artificial Intelligence*, pages 3842–3849, 2020, 1912.06989
15. J. Fan, L. Ding, Y. Chen, and M. Udell. Factor group-sparse regularization for efficient low-rank matrix recovery. In *Advances in Neural Information Processing Systems (NeurIPS)*, volume 32, pages 5105–5115, 2019, 1911.05774
14. C. Yang, Y. Akimoto, D. W. Kim, and M. Udell. OBOE: Collaborative filtering for AutoML model selection. In *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, volume 25, pages 1173–1183. ACM, 2019, 1808.03233
13. J. Fan and M. Udell. Online high-rank matrix completion. In *Computer Vision and Pattern Recognition (CVPR)*, pages 8690–8698, 2019
12. J. Chen, N. Kallus, X. Mao, G. Svacha, and M. Udell. Fairness under unawareness: Assessing disparity when protected class is unobserved. In *FAT\*: Conference on Fairness, Accountability, and Transparency*, pages 339–348, 2019, 1811.11154
11. S. Zhou, S. Gupta, and M. Udell. Limited memory Kelley’s method converges for composite convex and submodular objectives. In *Advances in Neural Information Processing Systems*, 2018, 1807.07531
10. N. Kallus, X. Mao, and M. Udell. Causal inference with noisy and missing covariates via matrix factorization. In *Advances in Neural Information Processing Systems*, 2018, 1806.00811
9. J. A. Tropp, A. Yurtsever, M. Udell, and V. Cevher. Fixed-rank approximation of a positive-semidefinite matrix from streaming data. In *Advances in Neural Information Processing Systems*, 2017, 1706.05736
8. A. Yurtsever, M. Udell, J. A. Tropp, and V. Cevher. Sketchy decisions: Convex low-rank matrix optimization with optimal storage. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, pages 1188–1196, 2017, 1702.06838
7. X. Shen, S. Diamond, M. Udell, Y. Gu, and S. Boyd. Disciplined multi-convex programming. In *Chinese Control and Decision Conference (CCDC)*, 2017, 1609.03285
6. D. Davis, B. Edmunds, and M. Udell. The sound of APALM clapping: Faster nonsmooth nonconvex optimization with stochastic asynchronous PALM. In *Advances in Neural Information Processing Systems*, 2016, 1606.02338
5. A. Schuler, V. Liu, J. Wan, A. Callahan, M. Udell, D. Stark, and N. Shah. Discovering patient phenotypes using generalized low rank models. In *Pacific Symposium on Biocomputing (PSB)*, 2016
4. N. Kallus and M. Udell. Revealed preference at scale: Learning personalized preferences from assortment choices. In *The 2016 ACM Conference on Economics and Computation*, New York, NY, USA, 2016. ACM

3. H. Mehmood, M. Udell, and J. Cioffi. Revenue maximization for broadband service providers using revenue capacity. In *IEEE Global Communications Conference*, 2015
2. E. Lee, M. Udell, and S. Wong. Factorization for analog-to-digital matrix multiplication. In *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2015
1. P. LePendou, Y. Liu, S. Iyer, M. Udell, and N. Shah. Analyzing patterns of drug use in clinical notes for patient safety. *Proceedings of the AMIA Summits on Translational Science*, 2012:63, 2012

## Refereed Workshops

14. V. S. Lokhande, K. Sohn, J. Yoon, M. Udell, C. Lee, and T. Pfister. Towards group robustness in the presence of partial group labels. In *ICML 2022: Workshop on Spurious Correlations, Invariance and Stability*, volume abs/2201.03668, 2022, 2201.03668
13. M. Van Ness and M. Udell. CDF normalization for controlling the distribution of hidden layer activations. In *I (Still) Can't Believe It's Not Better! NeurIPS 2021 Workshop*, 2021
12. I. Drori, L. Liu, Q. Ma, B. Kates, and M. Udell. Zero-shot AutoML. In N. Y. A. of Sciences, editor, *Annual Machine Learning Symposium*, 2020
11. C. Yang, L. Ding, Z. Wu, and M. Udell. TenIPS: Inverse propensity sampling for tensor completion (workshop). In *OPT2020: 12th Annual Workshop on Optimization for Machine Learning*, 2020
10. E. Landgrebe, Y. Zhao, and M. Udell. Online mixed missing value imputation using gaussian copula. In *ICML Workshop on the Art of Learning with Missing Values (Artemiss)*, 2020
9. I. Drori, L. Liu, S. Koorathota, N. Yi, J. Li, A. Moretti, J. Freire, and M. Udell. AutoML using metadata language embeddings. In *NeurIPS Workshop on Meta-Learning*, 2019, 1910.03698
8. Y. Zhang, K. Song, Y. Sun, S. Tan, and M. Udell. “Why should you trust my explanation?” understanding uncertainty in LIME explanations. In *ICML Workshop AI for Social Good*, 2019, 1904.12991
7. Y. Sun, Y. Guo, J. A. Tropp, and M. Udell. Tensor random projection for low memory dimension reduction. In *NeurIPS Workshop on Relational Representation Learning*, 2018, 2012.03436
6. C. Yang, Y. Akimoto, D. W. Kim, and M. Udell. OBOE: Collaborative filtering for AutoML initialization (workshop version). *NeurIPS Workshop on Automated Machine Learning*, 2018, 1808.03233
5. M. Paradkar and M. Udell. Graph-regularized generalized low rank models. In *CVPR Workshop on Tensor Methods in Computer Vision*, 2017

4. N. Kallus and M. Udell. Learning preferences from assortment choices in a heterogeneous population. In *ICML Workshop on Computational Frameworks for Personalization*, 2016, 1509.05113
3. M. Udell, K. Mohan, D. Zeng, J. Hong, S. Diamond, and S. Boyd. Convex optimization in Julia. In *SC14 Workshop on High Performance Technical Computing in Dynamic Languages*, 2014, 1410.4821
2. M. Udell, C. Horn, R. Zadeh, and S. Boyd. Generalized low rank models. *NeurIPS Workshop on Distributed Machine Learning and Matrix Computations*, 2014
1. M. Udell and R. Takapoui. Linear bandits, matrix completion, and recommendation systems. *NeurIPS Workshop on Large Scale Matrix Analysis and Inference*, 2013

**Miscellaneous: theses, technical reports, book chapters, newsletters, etc.**

14. M. Udell and Z. Frangella. Randomized numerical linear algebra for optimization. *SIAG/OPT Views and News*, 2022
13. N. Singh, B. Kates, J. Mentch, A. Kharkar, M. Udell, and I. Drori. Privileged zero-shot AutoML, 2021, 2106.13743
12. C. Yang, J. Fan, Z. Wu, and M. Udell. Efficient AutoML pipeline search with matrix and tensor factorization, 2020, 2006.04216
11. I. Drori, L. Liu, Q. Ma, J. Deykin, B. Kates, and M. Udell. Real-time AutoML, 2020
10. B. Liu and M. Udell. Impact of accuracy on model interpretations. 2020, 2011.09903
9. E. A. Ricci, M. Udell, and R. A. Knepper. An information-theoretic approach to persistent environment monitoring through low rank model based planning and prediction. 2020, 2009.01168
8. M. Udell. Big data is low rank. *SIAG/OPT Views and News*, 2019
7. A. Ratner, D. Alistarh, G. Alonso, D. G. Andersen, P. Bailis, S. Bird, N. Carlini, B. Catanzaro, E. Chung, B. Dally, J. Dean, I. S. Dhillon, A. G. Dimakis, P. Dubey, C. Elkan, G. Fursin, G. R. Ganger, L. Getoor, P. B. Gibbons, G. A. Gibson, J. E. Gonzalez, J. Gottschlich, S. Han, K. M. Hazelwood, F. Huang, M. Jaggi, K. G. Jamieson, M. I. Jordan, G. Joshi, R. Khalaf, J. Knight, J. Konecný, T. Kraska, A. Kumar, A. Kyrillidis, J. Li, S. Madden, H. B. McMahan, E. Meijer, I. Mitliagkas, R. Monga, D. G. Murray, D. S. Papailiopoulous, G. Pekhimenko, T. Rekatsinas, A. Rostamizadeh, C. Ré, C. D. Sa, H. Sedghi, S. Sen, V. Smith, A. Smola, D. Song, E. R. Sparks, I. Stoica, V. Sze, M. Udell, J. Vanschoren, S. Venkataraman, R. Vinayak, M. Weimer, A. G. Wilson, E. P. Xing, M. Zaharia, C. Zhang, and A. Talwalkar. SysML: The new frontier of machine learning systems. *CoRR*, abs/1904.03257, 2019, 1904.03257
6. J. A. Tropp, A. Yurtsever, M. Udell, and V. Cevher. More practical sketching algorithms for low-rank matrix approximation. Technical Report 2018-01, California Institute of Technology, Pasadena, California, 2018

5. L. Ding and M. Udell. Frank-Wolfe style algorithms for large scale optimization. In *Large-Scale and Distributed Optimization*. Springer, 2018
4. M. Udell. *Generalized Low Rank Models*. PhD thesis, Stanford University, 2015
3. M. Udell and S. Boyd. PCA on a data frame. 2015
2. M. Udell and S. Boyd. Beyond principal component analysis (PCA). *Biomedical Computation Review*, 2014
1. M. Udell and S. Boyd. Maximizing a sum of sigmoids. 2013

## Grants

### Current

**ONR (PI):** *Fast Re-routing using Machine Learning*, \$350,000, July 2022 to June 2025.

**Alfred P. Sloan Foundation Fellowship:**, \$75,000, September 2021 to August 2023.

**ONR (PI):** *Young Investigator Award: DREAMI: Dimension Reduction for Efficient Automated Machine Intelligence*, \$528,890, June 2020 to January 2024.

**NSF IIS-1943131 (PI):** *CAREER: Accelerating Machine Learning with Low Dimensional Structure*, \$550,000, October 2020 to September 2025.

**Canadian Institutes of Health Research (Senior Personnel):** *Using data to guide population health management: A comprehensive evaluation of analytic approaches for population segmentation*. PI: Laura Rosella. \$291,082, March 2020 to March 2023. (Provides some student funding.)

### Pending

### Past

**NSF CCF-1740822 (Senior Personnel):** *TRIPODS: Data Science for Improved Decision-Making: Learning in the Context of Uncertainty, Causality, Privacy, and Network Structures*, \$1,496,655, October 1, 2017 to September 30, 2020. (.09 calendar [ie, nominal level] effort.) This grant establishes a major data science center at Cornell.

**Cornell: Digital Agriculture (co-PI):** *Development of a High-Resolution Weather Forecast Database for Digital Agricultural Research and Outreach Applications*. Co-PI: Art Degaetano. \$214,000, 2017–2020.

**DARPA FA8750-17-2-0101 (PI):** *Composable Robust Structured Data Inference*, \$1,411,602, March 27, 2017 to February 24, 2020. (2 summer months, 1 academic month effort.) The goal of this project is to develop robust tools for imputing missing data in large scale, heterogeneous data tables by using side information about which rows or columns are similar.

**Capital One (co-PI).** Co-PI: Nathan Kallus. \$60,000, August 1 2018.

**Cornell Tech Faculty Exchange Grant (co-PI).** Co-PI: Nathan Kallus. \$3,000, 2016–2017.

## Awards

**US National Academy of Sciences Kavli Fellow,** 2023

**Microsoft Research Faculty Fellowship Finalist,** 2021

**Alfred P. Sloan Foundation Research Fellowship,** 2021

**Cornell Engineering Research Excellence Award,** Cornell University 2020

**INFORMS Optimization Society Student Research Prize,** INFORMS 2019  
*First place for student Lijun Ding's paper on Storage-Optimal Semidefinite Programming*



**INFORMS Undergraduate Operations Research Prize, INFORMS** 2018  
*Honorable mention for student Song Zhou's paper on Limited Memory Kelley's Method*

**Douglas Whitney '61 Engineering Teaching Excellence Award, Cornell University** 2018

**Doing Good with Good OR Student Paper Competition, INFORMS** 2017  
*Second place, for Optimal design of efficient rooftop photovoltaic arrays.*

**Center for the Mathematics of Information Postdoctoral Fellowship** 2015  
 California Institute of Technology

**Gerald J. Lieberman Fellowship, Stanford University** 2014  
*Awarded to doctoral students demonstrating the potential to become academic leaders.  
 (12 Lieberman Fellows are selected among all doctoral candidates at Stanford each year.)*

**Best Force Multiplier, DARPA PlanX** 2013

**Graduate Research Fellowship, National Science Foundation** 2010

**Gabilan Graduate Fellowship, Stanford University** 2009

**Phi Beta Kappa, Yale University** 2009

**Henry Edwards Ellsworth Prize, Yale University** 2009  
*Awarded for the best senior thesis research paper in the sciences.*

**US Physics Olympics Team Member** 2005

## Advising

Below I list my Stanford PhD advisees. See my webpage for details.

- |  |  |
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| 5. <b>Ya-Chi Chu, Math</b>             | <i>expected graduation June 2026</i>   |
| 4. <b>Pratik Rathore, EE</b>           | <i>expected graduation June 2026</i>   |
| 3. <b>Ali Ahmaditeshnizi, MS&amp;E</b> | <i>expected graduation June 2026</i>   |
| 2. <b>Mike Van Ness, MS&amp;E</b>      | <i>expected graduation June 2025</i>   |
| 1. <b>Zachary Frangella, MS&amp;E</b>  | <i>expected graduation August 2024</i> |

## PhD committee member

- |   |                                      |
|---|--------------------------------------|
| 10. <b>Akshay Rao (CEE)</b>                   | <i>expected graduation June 2026</i> |
| 9. <b>Sam Liu (MS&amp;E)</b>                  | <i>expected graduation June 2026</i> |
| 8. <b>Izabel Aguilar (MS&amp;E)</b>           | <i>expected graduation June 2025</i> |
| 7. <b>Chunlin Sun (ICME)</b>                  | <i>expected graduation June 2024</i> |
| 6. <b>Robin Alexandra Brown (ICME)</b>        | <i>expected graduation June 2024</i> |
| 5. <b>Ethan Steinberg (BDS)</b>               | <i>September 2023</i>                |
| 4. <b>Yujia Jin (MS&amp;E)</b>                | <i>September 2023</i>                |
| 3. <b>Yiping Lu (MS&amp;E)</b>                | <i>September 2023</i>                |
| 2. <b>Aldo Carranzo (ICME)</b>                | <i>June 2023</i>                     |
| 1. <b>Grade Wang (Mechanical Engineering)</b> | <i>March 2023</i>                    |

**Cornell advising** At Cornell, I advised 3 postdoctoral researchers; 6 PhDs (5 graduated as of June 2022); 16 undergraduates; and 26 Masters students. I served on several other PhD committees and was a member of seven graduate fields: ORIE, CS, CAM, Statistics, ECE, Systems, and Data Science.

Below I list my Cornell PhD advisees. See my webpage for details.

6. **Shipu Zhao, Systems Engineering** May 2023  
*New perspectives in continuous optimization: theory and methodology*
5. **Yuxuan Zhao, Statistics** May 2022  
*Gaussian copula for mixed data with missing values: model estimation and imputation*
4. **Chengrun Yang, Electrical and Computer Engineering** May 2022  
*Automated machine learning under resource constraints*
3. **Lijun Ding, ORIE (co-advised by Yudong Chen)** August 2021  
*Large scale semidefinite programming: simplicity, conditioning, and an efficient algorithm.*
2. **Xiaojie Mao, Statistics (co-advised by Nathan Kallus)** May 2021  
*Machine Learning Methods for Data-driven Decision Making: Contextual Optimization, Causal Inference, and Algorithmic Fairness.*
1. **Yiming Sun, Statistics (co-advised by Sumanta Basu)** October 2019  
*High Dimensional Data Analysis with Dependency and Under Limited Memory.*

#### Cornell PhD committee member

3. **Tianyi Shi (Applied Math)** graduated May 2022
2. **Zhengze Zhou (Statistics)** graduated May 2021
1. **Yingjie Bi (Electrical and Computer Engineering)** graduated January 2020

#### Teaching

**CME 307 / MS&E 311** Stanford University  
*Instructor* Spring 2023  
PhD level required course; 46 students.

**MS&E 125** Stanford University  
*Instructor* Spring 2023  
sophomore level required course; 71 students.

**ORIE 7391: Faster: Algorithmic Ideas for Speeding Up Optimization** Cornell University  
*Instructor* Spring 2022  
PhD level elective course; 13 students.

**ORIE 4741: Learning with Big Messy Data** Cornell University  
*Instructor* Fall 2016, 2017, 2019, 2020, 2021  
Undergraduate level elective course in data analysis; 2016: 85 students. 2017: 117 students. 2019: 147 students. 2020: 117 students. 2021: 155 students.

**ORIE 3120: Practical Tools for Operations Research, Data Science, and Machine Learning** Cornell University  
*Instructor* Spring 2020  
Undergraduate level required course; 222 students

**ORIE 7191: Optimization for Machine Learning** Cornell University  
*Instructor* Spring 2019  
PhD level elective course; 15 students.

**CS+ORIE+STSCI 1380: Data Science for All** Cornell University

<i>Co-instructor</i>	<i>Spring 2018</i>
Undergraduate level elective course in data analysis; 30 students.	
<b>ORIE 6326: Convex Optimization</b>	Cornell University
<i>Instructor</i>	<i>Spring 2017</i>
PhD level elective course; 47 students.	
<b>EE 364b: Convex Optimization II</b>	Stanford University
<i>Teaching assistant</i>	<i>Spring 2014</i>
<b>CVX 101: Convex Optimization</b>	EdX Stanford
<i>Head teaching assistant</i>	<i>Winter 2014</i>
Taught 10,000 students worldwide.	
<b>EE 364a: Convex Optimization I</b>	Stanford University
<i>Instructor</i>	<i>Summer 2013</i>
<b>EE 364a: Convex Optimization I</b>	Stanford University
<i>Teaching Assistant</i>	<i>Winter 2012</i>
<b>CME Refresher Course: Discrete Math and Algorithms</b>	Stanford University
<i>Instructor</i>	<i>September 2011, September 2012</i>
<b>CME 305: Discrete Mathematics and Algorithms</b>	Stanford University
<i>Teaching Assistant</i>	<i>Winter 2011</i>

## Academic Service

<b>Conference on AI for Operations and Operations for AI: Charting the Future</b>	
Stanford University	
<i>Co-organizer (with Mohsen Bayati, Ramesh Johari, Arvind Karunakaran, Vasilis Syrgkanis, Ben Van Roy, Gabriel Weintraub)</i>	<i>2023</i>
<b>Generative AI Public Working Group</b>	NIST
<i>Committee Member</i>	<i>2023–</i>
<b>SciML Scientific Machine Learning Advisory Committee</b>	NumFocus
<i>Committee Member</i>	<i>2020–</i>
<b>JuliaOpt</b>	Github
<i>Co-owner</i>	<i>Fall 2014 –</i>
The JuliaOpt organization curates high quality optimization software in the Julia language.	
<b>INFORMS AI Strategy Advisory Committee</b>	INFORMS
<i>Committee Member</i>	<i>2019</i>
<i>Advise the INFORMS board to develop synergies and opportunities in artificial intelligence</i>	
<b>INFORMS Session: Large Scale Semidefinite Programming</b>	Seattle
<i>Co-organizer (with Lijun Ding)</i>	<i>2019</i>
<b>BoydFest: Stephen Boyd's 60th Birthday Conference</b>	Stanford University
<i>Co-organizer (with Maryam Fazel and Mung Chiang)</i>	<i>2018</i>
<b>ICDM Workshop: Data Driven Discovery of Models</b>	New Orleans
<i>Co-organizer (with Christophe Giraud-Carrier and Ishanu Chattopadhyay)</i>	<i>2017</i>

**SIAM Annual: mini-symposium on Robust Low-Rank Models and Applications**

New Orleans

*Co-organizer (with Tamara Kolda)*

2016

**MOPTA: session on Large-scale Distributed Convex Optimization**

Lehigh

*Organizer*

2015

**University  
Service****ICME Xpo**

Stanford University

*Co-organized workshop for affiliates*

2022–2023

**MS&E Teaching Committee**

Stanford University

*Committee Member*

2022–2023

**ORIE Curriculum Committee**

Cornell University

*Committee Member*

2020–2021

**CAM Colloquium Committee**

Cornell University

*Committee Member*

2018–2019

**CAM PhD Admissions Committee**

Cornell University

*Committee Member*

2018, 2021

**ORIE Curriculum Review Committee**

Cornell University

*Committee Member*

2017–2018

**ORIE PhD Admissions Committee**

Cornell University

*Committee Member*

2016, 2017

**Committee on the Future of the School of Engineering**

Stanford University

*Committee Member*

Fall 2014 – Spring 2015

Represented all engineering doctoral students on faculty committee.

Collaborated on proposal addressing faculty hiring and development, research themes and centers, space and facilities, education and outreach, and interdisciplinary research.

**C<sup>2</sup> Computational Consulting**

Stanford University

*Consultant*

Fall 2011 – Spring 2015

Helped researchers across the university (in physics, computer science, neuroscience, law, immunology, ...) formulate and solve numerical problems.

**EE Faculty Search Committee**

Stanford University

*Committee Member*

Fall 2014 – Spring 2015

Student member on Electrical Engineering broad area search committee.

**Information Systems Laboratory Colloquium**

Stanford University

*Coordinator*

Winter 2012 – Spring 2013

Invited and hosted academic speakers for weekly seminar series.

**Committee on Graduate Studies**

Stanford University

*Committee Member*

Fall 2011 – Spring 2013

Debated and decided policies for all graduate students at Stanford.

Approved and reauthorized interdisciplinary graduate programs.

**Graduate Student Housing**

Stanford University

*Community Associate*

Winter 2011 – Spring 2013

Planned and led events for 800 graduate students.

**Judicial Affairs***Juror*

Stanford University

*Fall 2009 – Spring 2010***Editorial****Associate Editor**

Operations Research (OR)

*2024–***Associate Editor**

SIAM Journal on Mathematics of Data Science (SIMODS)

*2023–***Technical Editor**

Mathematical Programming Computation (MPC)

*2021–*

**2022:** Math of OR (2); Operations Research; IEEE transactions on signal processing; IEEE transactions on automatic control; NeurIPS Area Chair; technical editor for three papers at MPC.

**2021:** Linear Algebra and Applications (LAA); Proceedings of the National Academy of Sciences (PNAS); Mathematics of Operations Research (MOR); SIAM Journal on the Mathematics of Data Science (SIMODS) (2); NeurIPS area chair; Statistics and Computing; SIAM Journal on Matrix Analysis (SIMAX).

**2020:** SIAM Journal on Optimization (SIOPT); Journal of the American Statistical Society (JASA); Annals of Applied Statistics (AOAS); Linear Algebra and Applications (LAA); SIAM Journal on the Mathematics of Data Science (SIMODS); Science Advances; TPAMI Special Issue on AutoML (2); Proceedings of the National Academy of Sciences (PNAS). Conferences: Learning for Dynamics and Control (6); NeurIPS (6). Grants: NSF RI, ONR.

**2019:** Journal of the American Statistical Society (JASA); Annals of Applied Statistics (AOAS); SIAM Journal on the Mathematics of Data Science (SIMODS) (2); Journal of Statistical Software (JSS); Optimization Letters (OPTL); SIAM Journal on Matrix Analysis and Applications (SIMAX) (2); SIAM Journal on Optimization (SIOPT). Conferences: Learning for Dynamics and Control (5); ICML (3); NeurIPS (6); AAAI (3). Grants: NSF RI.

**2018:** SIAM Review; SIAM Journal on Scientific Computing; Linear Algebra and Applications; Stochastic Systems; NeurIPS (6); AAAI meta-reviewer (23); SysML (now ML Sys).

**2017:** Mathematical Programming; NIPS (6); SIAM Journal on Matrix Analysis; AAAI metareviewer (26); ICDM Workshop on Data Driven Discovery of Models (2); Journal of Statistical Software; Automatica; Springer book chapters (2);

**Patents****M. Udell and O. Toole. Optimal Design of Residential Photovoltaic Arrays.***Application No. 62/400,542, filed on September 27, 2016.***Industry  
Experience****Technical Advisor**

Oakland, CA

*Orchestrated Intelligence**2022 –*

Advised on data-driven and robust solutions for supply chain modeling and optimization.

**Technical Consultant**

Stanford, CA

*Two Sigma**2021 –*

Developed and advised on algorithms for risk management and portfolio optimization.

**Visiting Researcher**

Ithaca, NY and Mountain View, CA

*Google Cloud AI Research**2021*

Research ideas to accelerate and improve deep learning for tabular and time-series data to solve high-impact business problems in finance, manufacturing, retail, and beyond.

**Technical Advisor** Santa Monica, CA  
*Retina AI* 2017 – 2022  
 Advised on technical solutions for problems in e-commerce, including rapid assessment of long term value, retention analysis, and customer segmentation.

**Technical Advisor** Palo Alto, CA  
*Aurora Solar* 2014 – 2019  
 Designed optimization algorithms tailored for problems in the solar industry, including design of efficient rooftop photovoltaic array configurations. Compared to designs produced by solar installation experts, the resulting optimized designs deliver the same energy output at lower cost for more than 70% of homes.

**Senior Research Scientist** San Francisco, CA  
*Qadium (renamed Expanse, acquired by Palo Alto Networks)* 2012 – 2015  
 Won grants exceeding \$6.5M from DARPA for research in data analytics and cybersecurity.

**Lead Data Scientist** Arlington, VA  
*DARPA (via Data Tactics)* 2012 – 2013  
 Wrote 3 white papers to define mission for \$100M DARPA cybersecurity program.

**Data Scientist** Chicago, IL  
*Obama for America* Fall 2011  
 Analyzed graph of 70M Facebook users to identify potential donors and target voter registration campaign.

**Research Scientist** San Mateo, CA  
*Apixio (acquired by Centene)* Summer 2011  
 Developed a tool to extract structured information about diseases from the unstructured text of doctors' notes.

**Sales and Trading Strategist** New York, NY  
*Goldman Sachs* Summer 2009  
 Corrected model of commodities derivatives risk using multiple parameter estimation.

**Market Risk Management Analyst** New York, NY  
*Goldman Sachs* Summer 2008  
 Designed and automated a system to evaluate and graph mutual fund risk.

<b>Talks and posters</b>	<b>Applied Math Seminar</b> , UC Santa Cruz	2023
	<i>Low rank approximation for faster convex optimization</i>	
	<b>Applied Math Seminar</b> , UC Boulder	2023
	<i>Detecting equivalence between iterative algorithms for optimization</i>	
	<b>SILO Seminar</b> , UW Madison	2023
	<i>Detecting equivalence between iterative algorithms for optimization</i>	
	<b>AutoML Conference</b> , Berlin	2023
	<i>Plenary: Recommending Learners</i>	
<b>Knowledge Discovery and Data Mining (KDD)</b> , Long Beach	2023	
<i>Panel on AI in Education</i>		
<b>International Conference on Stochastic Programming</b> , UC Davis	2023	
<i>Low rank approximation for faster convex optimization</i>		
<b>SIAM optimization conference</b> , Seattle	2023	

<i>Detecting equivalence between iterative algorithms for optimization</i>	
<b>ISL seminar</b> , Stanford University	2023
<i>Low rank approximation for faster convex optimization</i>	
<b>Kavli frontiers of science symposium</b> , Irvine	2023
<i>Low rank approximation for faster convex optimization</i>	
<b>One World MINDS seminar</b> , online	2023
<i>Low rank approximation for faster convex optimization</i>	
<b>SIAM Math of Data Science</b> , San Diego (online)	2022
<i>Low rank approximation for faster convex optimization</i>	
<b>Two Sigma Academic Seminar</b> (online)	2022
<i>Low rank approximation for faster convex optimization</i>	
<b>Aspects of Logic and Machine Learning</b> , ASL, Cornell University,	2022
<i>Automating Machine Learning</i>	
<b>ICME XPO</b> , Stanford University	2022
<i>Automating Machine Learning</i>	
<b>Statistics Seminar</b> , University of Chicago (online)	2022
<i>Low rank approximation for faster convex optimization</i>	
<b>ORC Seminar</b> , MIT Sloan (online)	2022
<i>Big Data is Low Rank</i>	
<b>ORFE Seminar</b> , Princeton (online)	2022
<i>Big Data is Low Rank</i>	
<b>MS&amp;E Seminar</b> , Stanford (online)	2022
<i>Big Data is Low Rank</i>	
<b>Ocurate / PredictWise Seminar</b> , online	2021
<i>Imputing Missing Data with the Gaussian Copula</i>	
<b>Intel Site Visit</b> , Cornell University	2021
<i>Pareto optimization to pick the perfect precision</i>	
<b>Data Science Seminar</b> , Johns Hopkins (online)	2021
<i>Detecting equivalence between iterative algorithms for optimization</i>	
<b>IEOR-DRO Seminar</b> , Columbia (online)	2021
<i>Detecting equivalence between iterative algorithms for optimization</i>	
<b>IOE Seminar</b> , Michigan (online)	2021
<i>Detecting equivalence between iterative algorithms for optimization</i>	
<b>Workshop on Automated Data Science</b> , ECML (online),	2021
<i>Structured Models for Automated Machine Learning</i>	
<b>AI seminar</b> , Microsoft Research (online)	2021
<i>Structured Models for Automated Machine Learning</i>	
<b>Industrial Engineering Seminar</b> , Sharif University of Technology (online)	2021
<i>Big Data is Low Rank</i>	
<b>Workshop on Low Rank models and Applications</b> , Fields Institute (online)	2021
<i>Imputing Missing Data with the Gaussian Copula</i>	
<b>Complexity of Matrix Computation Seminar</b> , (online)	2021
<i>Panelist: What does it mean to compute a low rank approximation of a matrix?</i>	
<b>Optimization and Statistical Learning Seminar</b> , Northwestern (online)	2021

*Detecting equivalence between iterative algorithms for optimization*

**E-NLA Numerical Linear Algebra Seminar**, (online) 2021  
*Scalable Semidefinite Programming*

**Mathematical Foundations and Algorithms for Tensor Computations** IPAM, UCLA (online) 2021  
*Low Rank Tucker Approximation of a Tensor from Streaming Data*

**Statistics Seminar**, University of California at Santa Barbara (online) 2021  
*Big Data is Low Rank*

**AI seminar**, Cornell University(online) 2021  
*Automating Machine Learning*

**Keynote**, East Coast Optimization Meeting (online) 2021  
*Scalable Semidefinite Programming*

**Women in Data Science Workshop**, WiDS Global Conference (online) 2021  
*Automating Machine Learning*

**Computational Science and Engineering Seminar**, Georgia Tech (online) 2021  
*Big Data is Low Rank*

**Computational Mathematics and Applications Seminar**, Oxford University (online) 2021  
*Big Data is Low Rank*

**Ezra Systems Seminar**, Cornell (online) 2020  
*Imputing Missing Data with the Gaussian Copula*

**OPTML++ Seminar**, MIT (online) 2020  
*Big Data is Low Rank*

**Scientific Computing Seminar**, Emory (online) 2020  
*Imputing Missing Data with the Gaussian Copula*

**QMnet Seminar**, Melbourne (online) 2020  
*Missing Data Imputation with Low Rank Models*

**The Art of Learning with Missing Values (ARTEMISS) Workshop**, ICML (online) 2020  
*Imputing Missing Data with the Gaussian Copula*

**SIAM Mathematics of Data Science**, (online) 2020  
*Imputing Missing Data with the Gaussian Copula*

**Mathematics of Data Science Math Seminar**, Tufts (online) 2020  
*Big Data is Low Rank*

**Applied Math Seminar**, Princeton 2020  
*Scalable Semidefinite Programming*

**Science on Tap**, Ithaca, NY 2020  
*Filling in Missing Data: Elections, \_\_\_\_\_, Healthcare.*

**Low-rank models winter school**, Villars-Sur-Ollon, Switzerland 2020  
*Low Rank Models for Missing Data and Optimization*

**Statistics and Computation**, Alan Turing Institute, London 2020  
*Big Data is Low Rank*

**Reunion Conference on Foundations of Data Science**, Simons Institute 2019  
*Missing Value Imputation for Mixed Data Through Gaussian Copula*



<b>NeurIPS</b> , Vancouver	2019
<i>Factor Group-Sparse Regularization for Efficient Low-Rank Matrix Recovery</i>	
<b>INFORMS</b> , Seattle	2019
<i>Low Rank Tucker Approximation of a Tensor from Streaming Data</i>	
<b>Knowledge Discovery and Data Mining (KDD)</b> , Anchorage	2019
<i>Oboe: Collaborative Filtering for AutoML Initialization</i>	
<b>JuliaCon</b> , Baltimore	2019
<i>Keynote: Big Data is Low Rank using LowRankModels</i>	
<b>Applied Math Seminar</b> , UC Boulder	2019
<i>Optimal-Storage Semidefinite Programming using Approximate Complementarity</i>	
<b>Learning for Dynamics and Control (L4DC)</b> , MIT	2019
<i>Oboe: Collaborative Filtering for AutoML Initialization (poster)</i>	
<b>Machine Learning for Health (ML4H)</b> , Vector Institute, Toronto	2019
<i>Representation Learning, Patient Similarity, and Subtyping</i>	
<b>Low Rank Optimization Workshop</b> , Leipzig MPI for Mathematics in the Sciences	2019
<i>Low Rank Tucker Approximation of a Tensor from Streaming Data</i>	
<b>Optimization and Statistical Learning</b> , Les Houches	2019
<i>Optimal-Storage Semidefinite Programming using Approximate Complementarity</i>	
<b>Women and Mathematics (WAM) Ambassador Program</b> , Cornell University	2019
<i>Filling in Missing Data: Elections, ———, Healthcare.</i>	
<b>CME 300</b> , Stanford	2019
<i>Big Data is Low Rank</i>	
<b>Women in Data Science</b> , Stanford	2019
<i>Plenary: Big Data is Low Rank</i>	
100,000 conference attendees worldwide!	
<b>Johns Hopkins AMS seminar</b> , Baltimore	2019
<i>Big Data is Low Rank</i>	
<b>CAM Colloquium</b> , Cornell University	2019
<i>Low Memory Convex Optimization</i>	
<b>NeurIPS workshop on AI in financial services</b> , Montreal	2018
<i>Moderated Industry Panel</i>	
<b>NeurIPS workshop on AI in financial services</b> , Montreal	2018
<i>Fairness under Unawareness</i>	
<b>NeurIPS spotlight talk</b> , Montreal	2018
<i>Limited Memory Kelley's Method Converges for Composite Convex and Submodular Optimization</i>	
<b>Rutgers Optimization Seminar</b> , New Brunswick	2018
<i>Low Memory Convex Optimization</i>	
<b>Princeton Optimization Seminar</b> , Princeton	2018
<i>Low Memory Convex Optimization</i>	
<b>UC Davis Mathematics of Data and Decisions Seminar</b> , Davis	2018
<i>Big Data is Low Rank</i>	
<b>Georgia Tech OR Colloquium</b> , Atlanta	2018
<i>Big Data is Low Rank</i>	

<b>Stanford Linear Algebra and Optimization Seminar</b> , Stanford <i>Low Memory Convex Optimization</i>	2018
<b>ISMP</b> , Bordeaux <i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	2018
<b>Ecole Polytechnique: Statistics Special Seminar</b> , Paris <i>Big Data is Low Rank</i>	2018
<b>DARPA D3M Workshop</b> , Arlington <i>Composable Robust Structured Data Inference: AutoML, Causal Inference, Big Data is Low Rank</i>	2018
<b>AI in advancement</b> , Cornell <i>Panel Discussion</i>	2018
<b>Penn State OR Colloquium</b> , State College, PA <i>Big Data is Low Rank</i>	2018
<b>Cornell Engineering College Council</b> , New York, <i>The New Educational Paradigm: Data Science</i>	2017
<b>INFORMS</b> , Houston <i>Optimal Design of Rooftop Photovoltaic Arrays</i>	2017
<b>SIMONS Institute</b> , Berkeley <i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	2017
<b>MIT ORC Seminar</b> , Cambridge, MA <i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	2017
<b>Capital One Tech Talk</b> , New York <i>Low Rank Models for Automatic Machine Learning and Interpretability</i>	2017
<b>Schonfeld Quantitative Conference</b> , New York <i>Convex Optimization Modeling</i>	2017
<b>STRATA</b> , New York <i>Generalized Low Rank Models</i>	2017
<b>Two Sigma Tech Talk</b> , New York <i>Generalized Low Rank Models</i>	2017
<b>CATALYST Academy Field Session: Operations Research</b> , Cornell <i>Outreach session to introduce URM high school students to the discipline of OR</i>	2017
<b>CURIE Academy Field Session: Operations Research</b> , Cornell <i>Outreach session to introduce female high school students to the discipline of OR</i>	2017
<b>JuliaCon</b> , Berkeley <i>Julia: the Type of Language for Mathematical Programming</i>	2017
<b>LCCC workshop on Distributed Optimization (Invited)</b> , Lund <i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	2017
<b>UW Optimization Seminar</b> , Seattle <i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	2017
<b>SIOPT</b> , Vancouver <i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	2017
<b>DARPA D3M Kickoff</b> , Arlington <i>Composable Robust Structured Data Inference</i>	2017
<b>Optimization Under Uncertainty Workshop</b> , Duke	2017

<i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	
<b>Yale Alumni in Science and Engineering Talk</b> , New York	2017
<i>Filling in Missing Data: Elections, ———, Healthcare.</i>	
<b>NYU Numerical Analysis Seminar</b> , New York	2017
<i>Sketchy Decisions: Convex Optimization with Optimal Storage</i>	
<b>Goldman Sachs Tech Talk</b> , New York	2017
<b>CS Brown-Bag Colloquium</b> , Cornell	2017
<b>MIIS (Tutorial and Invited Talk)</b> , Chinese University of Hong Kong, Shenzhen	2016
<b>NIPS</b> , Barcelona	2016
<b>INFORMS</b> , Nashville	2016
<b>SCAN Seminar</b> , Cornell	2016
<b>CAM Colloquium</b> , Cornell	2016
<b>ICCOPT</b> , Tokyo	2016
<b>SIAM Annual Meeting</b> , Boston	2016
<b>JPL Seminar</b> , Pasadena	2016
<b>DARPA ISAT Workshop on the Future of Storage</b> , New York	2016
<b>Kaiser Permanente</b> , Oakland	2016
<b>TDA 2016</b> , Leuven	2016
<b>CMI Seminar (I)</b> , California Institute of Technology	2015
<b>CMI Seminar (II)</b> , California Institute of Technology	2015
<b>DARPA SIMPLEX program meeting</b> , Stanford University	2015
<b>H2O World</b> , Santa Clara	2015
<b>Uber Tech Talk</b> , San Francisco	2015
<b>INFORMS</b> , Philadelphia	2015
<b>Applied Math Seminar</b> , UCLA	2015
<b>Sandia National Lab Seminar</b> , Livermore	2015
<b>ISMP</b> , Pittsburgh	2015
<b>Optimization in Julia</b> , JuliaCon, Cambridge	2015
<b>Google Tech Talk</b> , Mountain View	2015
<b>Biomedical Informatics Seminar</b> , Stanford University	2015
<b>Palantir Tech Talk</b> , Palo Alto	2015
<b>Twitter Tech Talk</b> , San Francisco	2015
<b>ICME PhD Oral Examination</b> , Stanford University	2015
<b>H2O Tech Talk</b> , Santa Clara	2015
<b>Civis Analytics Tech Talk</b> , Chicago	2015
<b>TTIC Seminar</b> , Toyota Technical Institute of Chicago	2015
<b>IBM T. J. Watson Research Seminar</b> , Yorktown Heights	2015
<b>Hutchin Hill Capital Seminar</b> , New York	2015

<b>ORIE Seminar</b> , Cornell University	2015
<b>IEOR Seminar</b> , UC Berkeley	2015
<b>CMS Seminar</b> , California Institute of Technology	2015
<b>Heinz College Seminar</b> , Carnegie Mellon University	2015
<b>Mobilize Seminar</b> , Stanford University	2014
<b>Distributed Machine Learning Workshop</b> , NIPS, Montreal	2014
<b>HPTCDL Workshop</b> , SC14, New Orleans	2014
<b>INFORMS</b> , San Francisco	2014
<b>ICME Seminar</b> , Stanford University	2014
<b>Bay Area Julia Users Meetup</b> , San Francisco	2014
<b>BlackRock SAE Tech Talk</b> , Stanford University	2014
<b>Modern Massive Data Sets (MMDS)</b> , UC Berkeley	2014
<b>JuliaCon</b> , Chicago	2014
<b>Verizon Labs Tech Talk</b> , Palo Alto	2014
<b>IPAM Workshop on Mathematics of Politics</b> , UCLA	2013
<b>Workshop on Large Matrices</b> , NIPS, Lake Tahoe	2013
<b>IPAM Workshop on Optimization</b> , UCLA	2013
<b>ICME Seminar</b> , Stanford University	2013
<b>Marin Software Tech Talk</b> , San Francisco	2013
<b>Political Psychology Research Seminar</b> , Stanford University	2013
<b>ICME Student Seminar</b> , Stanford University	2010

## Numbers

**Erdős number:** 3

**Bacon number:** 3

**Erdős-Bacon number:** 6

## Hobbies

Harp, backpacking, running, foraging, ergonomics, carbon sequestration.