WEIJIE SU

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EDUCATION

9/2011–6/2016	Ph.D. in Statistics, Stanford University, CA Advisor: Emmanuel Candès
9/2008–7/2011	B.A. in Economics (minor), Peking University, Beijing
9/2007–7/2011	B.S. in Mathematics, Peking University, Beijing

APPOINTMENTS

All at the University of Pennsylvania

7/2022–present	Associate Professor, Department of Statistics and Data Science, The Wharton School
7/2022–present	Associate Professor (by courtesy), Department of Computer and Information Science
7/2019–present	Co-Director, Penn Research in Machine Learning (PRiML) Center
7/2021–present	Affiliated Faculty, Warren Center for Network and Data Sciences
9/2020–present	Affiliated Faculty, AI for Business at Wharton
1/2018–present	Affiliated Faculty, Program in Applied Mathematics and Computational Science
7/2016–6/2022	Assistant Professor, Department of Statistics and Data Science, The Wharton School
7/2020–6/2022	Assistant Professor (by courtesy), Department of Computer and Information Science

SELECTED AWARDS AND HONORS

Institute of Mathematical Statistics (IMS) Peter Gavin Hall Early Career Prize, 2022

Society for Industrial and Applied Mathematics (SIAM) Early Career Prize in Data Science, 2022 (inaugural)

Alfred P. Sloan Research Fellowship in Mathematics, 2020

Facebook Faculty Research Award, 2020

NSF CAREER Award, 2019

Stanford Theodore W. Anderson Dissertation Award, 2016 (inaugural)

Simons Graduate Research Assistantship, 2016

Stanford Graduate Fellowship, 2011–2015

Shing-Tung Yau College Student Mathematics Contests in China, 2010 (inaugural):

- All-Around Gold Medal
- Gold Medal (Pao-Lu Hsu Prize) in Applied Mathematics, Probability and Statistics
- Bronze Medal in Analysis and Differential Equations
- Bronze Medal in Algebra, Number Theory, Representation Theory, and Combinatorics

Gold Medal at the Chinese National Mathematical Olympiad (2^{nd} nationally, receiving admission to Peking University), 2007

Silver Medal at the Chinese National Mathematical Olympiad (receiving early admission to Tsinghua University as a 10^{th} grade sophomore), 2005

PUBLICATIONS

Click for Google Scholar profile

Published or Forthcoming

37. L. Wu, M. Wang, W. Su. When Does SGD Favor Flat Minima? A Quantitative Characterization via Linear Stability. *Neural Information Processing Systems (NeurIPS)*, 2022

36. J. Zhang, H. Zhang, W. Su, and D. Roth. ROCK: Causal Inference Principles for Reasoning about Commonsense Causality. *International Conference on Machine Learning (ICML)*, 140, 26750–26771, 2022

35. W. Ji, Y. Lu, Y. Zhang, Z. Deng, and W. Su. An Unconstrained Layer-Peeled Perspective on Neural Collapse. *International Conference on Learning Representations (ICLR)*, 2022

34. S. Chen, K. Crammer, H. He, D. Roth, and W. Su. Weighted Training for Cross-Task Learning. *International Conference on Learning Representations (ICLR)* (Oral), 2022

33. Z. Li, W. Su, and D. Sejdinovic. Benign Overfitting and Noisy Features. *Journal of the American Statistical Association (Theory and Methods)*, forthcoming

32. Z. Bu, J. Klusowski, C. Rush, and W. Su. Characterizing the SLOPE Trade-off: A Variational Perspective and the Donoho–Tanner Limit. *The Annals of Statistics*, forthcoming

31. J. Wang, L. Gui, W. Su, C. Sabatti, and A. Owen. Detecting Multiple Replicating Signals Using Adaptive Filtering Procedures. *The Annals of Statistics*, forthcoming

30. H. Wang, Y. Yang, and W. Su. The Price of Competition: Effect Size Heterogeneity Matters in High Dimensions. *IEEE Transactions on Information Theory*, 68(8), 5268–5294, 2022

29. J. Zhang, H. Wang, W. Su. Imitating Deep Learning Dynamics via Locally Elastic Stochastic Differential Equations. *Neural Information Processing Systems (NeurIPS)*, 34, 2021

28. W. Su. You Are the Best Reviewer of Your Own Papers: An Owner-Assisted Scoring Mechanism. *Neural Information Processing Systems (NeurIPS)*, 34, 27929–27939, 2021

27. J. Dong, W. Su, and L. Zhang. A Central Limit Theorem for Differentially Private Query Answering. *Neural Information Processing Systems (NeurIPS)* (Spotlight), 34, 2021

26. C. Fang, H. He, Q. Long, and W. Su. Exploring Deep Neural Networks via Layer-Peeled Model: Minority Collapse in Imbalanced Training. *Proceedings of the National Academy of Sciences* (direct submission), 118(43), 2021

25. B. Shi, S. Du, M. Jordan, and W. Su. Understanding the Acceleration Phenomenon via High-Resolution Differential Equations. *Mathematical Programming*, 195(1), 79–148, 2022

24. J. Dong, A. Roth, and W. Su. Rejoinder: Gaussian Differential Privacy. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* (invited, non-refereed article), 84(1), 50–54, 2022

23. J. Dong, A. Roth, and W. Su. Gaussian Differential Privacy. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* (***Discussion Paper***), 84(1), 3–37, 2022

    This paper was read to the Royal Statistical Society in the UK in December 2020

22. C. Dwork, W. Su, and L. Zhang. Differentially Private False Discovery Rate Control. *Journal of Privacy and Confidentiality*, 11(2), 2021

21. Z. Deng, H. He, and W. Su. Toward Better Generalization Bounds with Locally Elastic Stability. *International Conference on Machine Learning (ICML)*, 139, 2590–2600, 2021

20. G. Qiao, W. Su, and L. Zhang. Oneshot Differentially Private Top-k Selection. *International Conference on Machine Learning (ICML)*, 139, 8672–8681, 2021

19. Q. Zheng, S. Chen, Q. Long, and W. Su. Federated f-Differential Privacy. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 130, 2251–2259, 2021

18. R. Berk, A. Buja, L. Brown, E. George, A. Kuchibhotla, W. Su, and L. Zhao. Assumption Lean Regression. *The American Statistician*, 75(1), 76–84, 2021

17. Z. Bu, J. Klusowski, C. Rush, and W. Su. Algorithmic Analysis and Statistical Estimation of SLOPE via Approximate Message Passing. *IEEE Transactions on Information Theory*, 67(1), 506–537, 2020

16. S. Chen, H. He, and W. Su. Label-Aware Neural Tangent Kernel: Toward Better Generalization and Local Elasticity. *Neural Information Processing Systems (NeurIPS)*, 33, 15847–15858, 2020

15. H. Wang, Y. Yang, Z. Bu, and W. Su. The Complete Lasso Tradeoff Diagram. *Neural Information Processing Systems (NeurIPS)* (Spotlight), 33, 20051–20060, 2020

14. Z. Bu, J. Dong, Q. Long, and W. Su. Deep Learning with Gaussian Differential Privacy. *Harvard Data Science Review*, 2020(23), 2020

13. Z. Deng, H. He, J. Huang, and W. Su. Towards Understanding the Dynamics of the First-Order Adversaries. *International Conference on Machine Learning (ICML)*, 119, 2484–2493, 2020

12. Q. Zheng, J. Dong, Q. Long, and W. Su. Sharp Composition Bounds for Gaussian Differential Privacy via Edgeworth Expansion. *International Conference on Machine Learning (ICML)*, 119, 11420–11435, 2020

11. H. He and W. Su. The Local Elasticity of Neural Networks. *International Conference on Learning Representations (ICLR)*, 2020

10. B. Shi, S. Du, W. Su, and M. Jordan. Acceleration via Symplectic Discretization of High-Resolution Differential Equations. *Neural Information Processing Systems (NeurIPS)*, 32, 5744–5752, 2019

9. Q. Zhao, D. Small, and W. Su. Multiple Testing When Many p-values Are Uniformly Conservative, with Application to Testing Qualitative Interaction in Educational Interventions. *Journal of the American Statistical Association (Theory and Methods)*, 114(527), 1291–1304, 2019

8. T. Liang and W. Su. Statistical Inference for the Population Landscape via Moment Adjusted Stochastic Gradients. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 81(2), 431–456, 2019

7. D. Brzyski, A. Gossmann, W. Su, and M. Bogdan. Group SLOPE—Adaptive Selection of Groups of Predictors. *Journal of the American Statistical Association (Theory and Methods)*, 114(525), 419–433, 2019

6. W. Su. When Is the First Spurious Variable Selected by Sequential Regression Procedures? *Biometrika*, 105(3), 517–527, 2018

5. W. Su, M. Bogdan, and E. Candès. False Discoveries Occur Early on the Lasso Path. *The Annals of Statistics*, 45(5), 2133–2150, 2017

4. W. Su, S. Boyd, and E. Candès. A Differential Equation for Modeling Nesterov's Accelerated Gradient Method: Theory and Insights. *Journal of Machine Learning Research*, 17(1), 5312–5354, 2016

3. L. Janson and W. Su. Familywise Error Rate Control via Knockoffs. *Electronic Journal of Statistics*, 10(1), 960–975, 2016

2. W. Su and E. Candès. SLOPE is Adaptive to Unknown Sparsity and Asymptotically Minimax. *The Annals of Statistics*, 44(3), 1038–1068, 2016

1. M. Bogdan, E. van den Berg, C. Sabatti, W. Su, and E. Candès. SLOPE—Adaptive Variable Selection via Convex Optimization. *The Annals of Applied Statistics*, 9(3), 1103–1140, 2015

Submitted

49. W. Su. A Truthful Owner-Assisted Scoring Mechanism. arXiv:2206.08149

48. H. Wang, S. Gao, H. Zhang, M. Shen, and W. Su. Analytical Composition of Differential Privacy via the Edgeworth Accountant. arXiv:2206.04236

47. Z. Deng, J. Zhang, L. Zhang, T. Ye, Y. Coley, W. Su, and J. Zou. FIFA: Making Fairness More Generalizable in Classifiers Trained on Imbalanced Data. arXiv:2206.02792

46. W. Su. Neurashed: A Phenomenological Model for Imitating Deep Learning Training. arXiv:2112.09741

45. S. Chen, Q. Zheng, Q. Long, and W. Su. A Theorem of the Alternative for Personalized Federated Learning. arXiv:2103.01901

44. B. Shi, W. Su, and M. Jordan. On Learning Rates and Schrd̈inger Operators. arXiv:2004.06977

43. F. Yang, H. Zhang, S. Wu, W. Su, and C. Ré. Analysis of Information Transfer from Heterogeneous Sources via Precise High-Dimensional Asymptotics. arXiv:2010.11750

42. M. Sordello, H. He, and W. Su. Robust Learning Rate Selection for Stochastic Optimization via Splitting Diagnostic. arXiv:1910.08597

41. W. Su and Y. Zhu. HiGrad: Uncertainty Quantification for Online Learning and Stochastic Approximation. arXiv:1802.04876

40. W. Su. The FDR-Linking Theorem. arXiv:1812.08965

39. E. Dobriban and W. Su. Robust Inference Under Heteroskedasticity via the Hadamard Estimator. arXiv:1807.00347

38. A. Weinstein, W. Su, M. Bogdan, R. Barber, and E. Candès. A Power Analysis for Knockoffs with the Lasso Coefficient-Difference Statistic. arXiv:2007.15346

Professional Activities and Service

Committee Member

AMCS Executive Committee, 10/2020–present

Program Committee of the Workshop on the Theory and Practice of Differential Privacy (online), 7/2021

ICSA Student Paper Award Committee, Spring 2021

Student Paper Award Committee of ASA Section on Statistical Learning and Data Science, Fall 2019

Wharton Statistics Ph.D. Admissions Committee, 9/2018–4/2019

Wharton Statistics Department Machine Learning Faculty Search Committee, Spring 2018

Seminar Organizer

AMCS Colloquium, Spring 2021

Penn Research in Machine Learning (PRiML) Seminar, Spring 2021

AMCS Colloquium, Fall 2020

Penn Research in Machine Learning (PRiML) Seminar, Fall 2020

Wharton Statistics Seminar, Fall 2017

Wharton Statistics Seminar, Fall 2016

Workshop Organizer

Workshop on Analyzing the US Census Bureau's Noisy Measurement Files, 8/2021–present

Meeting of New Researchers in Statistics and Probability, Philadelphia, Spring 2020

Workshop on Adaptive Data Analysis, the Simons Institute at Berkeley, 7/2018

Conference Session Organizer

Invited Session: *Statistical Inference with Deep Learning*, CMStatistics (online), London, UK, 12/2020

Invited Session: *Frontiers of Privacy-Preserving Data Analysis*, INFORMS Annual Meeting (online), National Harbor, 11/2020

Topic-Contributed Session: *Emerging Topics in Private Data Analysis* (online), Joint Statistical Meetings, Philadelphia, 8/2020

Invited Session: *Recent Developments in Privacy-Preserving Data Analysis*, CMStatistics, London, UK, 12/2019

Invited Session: *Uncertainty Quantification for Stochastic Optimization Methods in Machine Learning*, Joint Statistical Meetings, Denver, 7/2019

Editorial Service

Editorial Appointments	Associate Editor, *Journal of the American Statistical Association (Theory and Methods)*, 2023–present
	Area Chair, *Neural Information Processing Systems (NeurIPS)*, 2022
	Area Chair, *Neural Information Processing Systems (NeurIPS)*, 2021

Teaching

New Course Developed

STAT 991: Optimization Methods in Machine Learning

Regular Teaching

Fall 2020	STAT 405/705: Statistical Computing with R
Fall 2020	STAT 991: Optimization Methods in Machine Learning
Spring 2019	STAT 991: Optimization Methods in Machine Learning
Spring 2019	STAT 431: Statistical Inference

Spring 2018	STAT 431: Statistical Inference
Fall 2017	STAT 991-302: Seminar in Advanced Applications in Statistics
Spring 2017	STAT 431: Statistical Inference
Fall 2016	STAT 991-301: Seminar in Advanced Applications in Statistics

Independent Study

Fall 2021	STAT-999 (Hua Wang): Topics in Operations Research with Differential Privacy
Spring 2021	STAT-999 (Hua Wang): Topics in Differential Privacy
Spring 2021	STAT-999 (Yachong Elsa Yang): Cutting-Edge Problems in Modern Time Series
Fall 2020	STAT-999 (Hua Wang): Topics in High-Dimensional Statistics
Fall 2020	STAT-999 (Shuxiao Chen): Topics in Reinforcement Learning
Spring 2020	STAT-999 (Hua Wang): Topics in High-Dimensional Statistics
Fall 2018	STAT-999 (Matteo Sordello): Tuning-Free Strategies in Online Learning
Spring 2018	STAT-999 (Matteo Sordello): Advanced Topics in Statistical Inference for Online Learning

Invited Talks

Seminars

Zhejiang University, Statistics Seminar (online), 12/2022

ETH, Mathematics Seminar, 12/2022

UW-Madison, IFDS Seminar (online), 11/2022

Princeton University, ORFE Wilks Memorial Seminar, 11/2022

International Seminar on Selective Inference (online), 10/2022

Southwestern University of Finance and Economics, Statistics Seminar (online), 10/2022

CMU, Theory Lunch Seminar, 10/2022

University of Georgia, Statistics Seminar (online), 10/2022

One World MINDS Talk (online), 10/2022

Stanford University, Applied Math Seminar, 9/2022

Stanford University, Statistics Seminar, 9/2022

University of Pennsylvania, CIS Asset Seminar, 9/2022

University of Pennsylvania, Department of Economics, 9/2022

UC Berkeley, BLISS Seminar, 8/2022

University College London, Gatsby Computational Neuroscience Unit (online), 8/2022

East China Normal University, School of Statistics (online), 7/2022(b)

East China Normal University, School of Statistics (online), 7/2022(a)

Chinese Academy of Sciences, Laboratory for Quantum Computation and Theoretical Computer Science (online), 7/2022

Peking University, Center on Frontiers of Computing Studies (online), 5/2022

Chinese Academy of Sciences, Institute of Computational Mathematics and Scientific/Engineering Computing (online), 4/2022

Hong Kong University of Science and Technology, Department of Mathematics (online), 4/2022

Xiamen University, Department of Statistics (online), 4/2022

Peking University, Center for Statistical Science (online), 3/2022

Université de Montpellier, Machine Learning Seminar (online), 2/2022

University of North Carolina at Chapel Hil, Department of Biostatistics (online), 2/2022

Otaru University of Commerce, Transdisciplinary Econometrics & Data Science Seminar (online), 11/2021

Harvard University, Random Matrix & Probability Theory Seminar (online), 10/2021

Renmin University, School of Statistics (online), 10/2021

University of Toronto, Department of Statistical Sciences (online), 10/2021

Carnegie Mellon University, Department of Statistics and Data Science (online), 10/2021

Temple University, Department of Statistical Science (online), 10/2021

Purdue University, Department of Statistics (online), 10/2021

Duke University, Fuqua School of Business (online), 9/2021

University of North Carolina at Greensboro, Department of Mathematics and Statistics (online), 9/2021

University of Delaware, Department of Applied Economics and Statistics (online), 9/2021

National University of Singapore, Machine Learning Seminar (online), 9/2021

Columbia University, Mailman School of Public Health (online), 9/2021

Wuhan University, School of Mathematics and Statistics (online), 6/2021

University of Minnesota, Twin Cities, Machine Learning Seminar (online), 6/2021

Shanghai Jiao Tong University, School of Mathematical Sciences (online), 5/2021

Peking University, School of Mathematical Sciences (online), 4/2021

Chinese University of Hong Kong, Department of Statistics (online), 3/2021

Michigan State University, Department of Statistics and Probability (online), 3/2021

London School of Economics, Department of Statistics (online), 3/2021

Pennsylvania State University, Department of Statistics (online), 2/2021

University of Michigan, Department of Statistics (online), 1/2021

University of Wisconsin-Madison, Systems, Information, Learning and Optimization Seminar (online), 1/2021

University of California, Berkeley, Berkeley–Wharton Joint Statistics Seminar (online), 9/2020

University of Arizona, Department of Mathematics (online), 9/2020

Shanghai University of Finance and Economics, Optimization Seminar (online), 8/2020

Tsinghua University, Department of Mathematical Sciences (online), 7/2020

Southwestern University of Finance and Economics, School of Statistics (online), 6/2020

Peking University, Applied Mathematics Seminar (online), 5/2020

Hong Kong University of Science and Technology, Department of Mathematics (online), 4/2020

Harvard University, Machine Learning Seminar, 2/2020

MIT, Stochastics and Statistics Seminar, 2/2020

University of Pennsylvania, Wharton Statistics Department, 11/2019

University of Miami, Herbert Business School, 11/2019

Yale University, Department of Statistics and Data Science, 10/2019

University of Virginia, Department of Statistics, 9/2019

Columbia University, IEOR–DRO Seminar (*joint offering from Industrial Engineering & Operations Research (IEOR) and the Decision, Risk and Operations (DRO) Division of the Columbia Business School*), 9/2019

Xiamen University, Department of Statistics, 7/2019

Renmin University, School of Statistics, 6/2019

Peking University, Applied Mathematics Seminar, 6/2019

Columbia University, Department of Statistics, 4/2019

Stanford University, Joint EE and OR Seminar (*joint offering from Electrical Engineering and Management Science and Engineering*), 11/2018

Northwestern University, Department of Industrial Engineering and Management Sciences, 11/2018

Duke University, Department of Mathematics, 11/2018

University of Chicago, Department of Statistics, 11/2018

University of Wisconsin-Madison, Department of Statistics, 11/2018

North Carolina State University, Department of Statistics, 11/2018

University of North Carolina at Chapel Hill, Department of Statistics, 11/2018

University of Pennsylvania, AMCS Colloquium, 10/2018

University of Minnesota, Twin Cities, Department of Statistics, 10/2018

University of Illinois at Urbana-Champaign, Department of Statistics, 9/2018

Harvard University, Department of Statistics, 9/2018

East China Normal University, School of Statistics, 6/2018

Shanghai University of Finance and Economics, Department of Statistics, 6/2018

University of Pennsylvania, Penn Research in Machine Learning Seminar, 1/2018

Stanford University, Department of Statistics, 12/2017

University of California, Berkeley, Neyman Statistics Seminar, 12/2017

Fudan University, Department of Economics, 12/2017

Tsinghua University, Institute for Interdisciplinary Information Sciences, 12/2017

Binghamton University, Department of Statistics, 11/2017

New Jersey Institute of Technology, Department of Mathematical Sciences, 11/2017

Rutgers University, Department of Statistics, 10/2017

University of Pennsylvania, Department of Electrical and Systems Engineering, 10/2017

Peking University, Statistics Seminar, 7/2017

Tsinghua University, Center for Statistical Science, 7/2017

Chinese University of Hong Kong in Shenzhen, Statistics Seminar, 7/2017

East China Normal University, School of Statistics, 7/2017

Fudan University, School of Data Science, 7/2017

Purdue University, Department of Statistics, 3/2017

Princeton University, ORFE Wilks Memorial Seminar in Statistics, 2/2017

Temple University, Department of Statistical Science, 11/2016

Yale University, Department of Statistics, 2/2016

New York University, Stern School of Business, 2/2016

Georgia Institute of Technology, ISyE Seminar, 2/2016

University of California, Berkeley, Department of Biostatistics, 2/2016

Cornell University, Joint Statistics and ORIE Seminar (*joint offering from Statistics and Operations Research and Information Engineering*), 2/2016

University of Southern California, Marshall Business School, 2/2016

University of Washington, Department of Statistics, 2/2016

Carnegie Mellon University, Department of Statistics, 2/2016

University of California, Davis, Department of Statistics, 1/2016

University of California, San Diego, Department of Mathematics, 1/2016

MIT, Sloan School of Management, 1/2016

Rutgers University, Department of Statistics, 1/2016

University of Pennsylvania, Wharton Statistics Department, 1/2016

Columbia University, Department of Statistics, 1/2016

Conference and Workshop Presentations

SlowDNN, Abu Dhabi, 1/2023

IMS ICSDS, Florence, 12/2022

INFORMS, Indianapolis, 10/2022

Elicitation and Evaluation Workshop, IDEAL, Northwestern University, 10/2022

SIAM Conference on Mathematics of Data Science (plenary, Data Science Early Career Prize), San Diego, 9/2022

SIAM Conference on Mathematics of Data Science, San Diego, 9/2022

International Conference on Continuous Optimization (ICCOPT), Lehigh, 7/2022

International Chinese Statistical Association (online), Xi'an, 7/2022

Mathematical Methods of Modern Statistics, Luminy, France, 6/2022

New Advances in Statistics and Data Science Conference, Hawaii, 5/2022

INFORMS Optimization Society Meeting, Greenville, 3/2022

Conference on Neural Information Processing Systems (online), 12/2021

International Workshop on Statistical Theory and Related Fields (online), East China Normal University, 12/2021

INFORMS Annual Meeting (online), Anaheim, 10/2021

Workshop on Mean Field Asymptotics in High-Dimensional Statistics (online), University of Bremen, 9/2021

ICSA Applied Statistics Symposium (online), 9/2021

Bernoulli-IMS 10th World Congress in Probability and Statistics (online), Seoul, South Korea, 7/2021

Beijing Academy of Artificial Intelligence Annual Conference (online), Beijing, China, 6/2021

Conference on Statistical Learning Methods in Modern AI (online), Xi'an Jiaotong University, 6/2021

Conference on Robustness and Privacy (online), Laboratoire de Statistiques at CREST, 3/2021

Young Statisticians' Meet: Data Science in Action (online), Indian Statistical Institute, 3/2021

European Conference on Computational and Methodological Statistics (online), London, UK, 12/2020

Discussion Meeting for *Gaussian Differential Privacy* (online), Royal Statistical Society, London, UK, 12/2020

INFORMS Annual Meeting (online), National Harbor, 11/2020

Joint Statistical Meetings (online), Philadelphia, 8/2020

International Seminar on Selective Inference, Joint with Conference on Mathematical Methods of Modern Statistics (online), 6/2020

Young Scientists Forum on Machine Learning Frontiers (online), Beijing Academy of Artificial Intelligence, 6/2020

Workshop on Theory of Deep Learning, Institute for Advanced Study, Princeton, 10/2019

INFORMS Annual Meeting, Seattle, 10/2019

The 4th Workshop on Higher-Order Asymptotics and Post-Selection Inference, St. Louis, 8/2019

Joint Statistical Meetings, Denver, 7/2019

Workshop on Data Science, Southwestern University of Finance and Economics, Chengdu, China, 7/2019

Simons Workshop on Operator Splitting Methods in Data Analysis, New York, 3/2019

Simons Workshop on Robust and High-Dimensional Statistics, Berkeley, 10/2018

Joint Statistical Meetings, Vancouver, 8/2018

Simons Workshop on Adaptive Data Analysis, Berkeley, 7/2018

ICSA Applied Statistics Symposium, New Brunswick, 6/2018

IMS Asia Pacific Rim Meeting, Singapore, 6/2018

Princeton Data Science Workshop, Princeton, 5/2018

Statistical Scalability Workshop, Isaac Newton Institute, UK, 4/2018

Annual Conference on Information Sciences and Systems, Princeton, 3/2018

Young Mathematician Forum, Peking University, 12/2017

International Conference on Data Science, Shanghai, China, 12/2017

The 2nd Workshop on Higher-Order Asymptotics and Post-Selection Inference, St. Louis, 8/2017

ICSA Applied Statistics Symposium, Chicago, 6/2017

International Conference on Multiple Comparison Procedures, University of California, Riverside, 6/2017

European Conference on Computational and Methodological Statistics, Seville, Spain, 12/2016

International Conference on Data Science, Shanghai, China, 12/2016

NIPS Workshop on Adaptive Data Analysis, Barcelona, Spain, 12/2016

World Congress in Probability and Statistics, Toronto, 7/2016

IAS/Park City Mathematics Program (PCMI), Park City, 7/2016

ICSA Conference on Data Science, Dali, China, 7/2016

Conference on Statistical Learning and Data Science, Chapel Hill, 6/2016

Stanford Industrial Affiliates Conference, Stanford, 2/2016

Stanford Electrical Engineering IT-Forum, Stanford, 1/2016

Joint Statistical Meetings, Seattle (8/2015);

IMS-China International Conference on Statistics and Probability, Kunming, China, 7/2015

Conference on Neural Information Processing Systems (Spotlight), Montreal, 12/2014

Stanford Industrial Affiliates Conference, Stanford, 2/2014

Talks at Tech Companies

Microsoft Research Asia, Theory Seminar (online), Beijing, 10/2022

Zhejiang Lab (online), Hangzhou, 8/2022

Beijing Academy of Artificial Intelligence, Qingyuan AI Talk Series (online), 5/2022

Microsoft (online), Talk Series in Microsoft Cognitive Services Research Group, Redmond, 4/2022

DeepMind (online), London, 3/2022

Google Research, Brain Team (online), Mountain View, 10/2021

Baidu Research (online), Bellevue, 8/2021

Facebook, Core Data Science (online), Menlo Park, 8/2020

Two Sigma Investments, New York, 9/2019

AIG, New York, 9/2019

Ant Financial, Hangzhou, China, 7/2019

Two Sigma Investments, New York, 1/2018

Microsoft Research, Redmond, 8/2013

Courses Integrating My Research[¶]

$*$ Paper #4 and related Papers #25, #10
† Papers #1, #2 and related Papers #7, #17, #32

University of Pennsylvania (SEAS) *ESE 546: Principles of Deep Learning

[¶]Including only those with course materials available online. Click on the titles for the hyperlinks.

Stanford University	†STATS 300C: Theory of Statistics
MIT	†18.S998: Mathematical Statistics: A Non-Asymptotic Approach
Yale University	†ECE 598: Information-Theoretic Methods in High-Dimensional Statistics
Princeton University	*ELE 522: Large-Scale Optimization for Data Science
Princeton University	†ELE 520: Mathematics of Data Science
University of California, Berkeley	*STAT 212b: Topics in Deep Learning
New York University	*CSCI-GA.3033: Mathematics of Deep Learning
Dartmouth College	*MATH 126: Convex Optimization
UCSD	*CSE 291: Topics on Scientific Computation
UIUC	*ECE 543: Statistical Learning Theory
UIUC	*IE 598: Big Data Optimization
Peking University	*Math 00136660: Convex Optimization

Industry Experience

6/2021–12/2022	Visiting Research Scientist, Core Data Science, Meta (Facebook) Research
Summer 2014	Research Intern, Microsoft Research, Mountain View
Summer 2013	Research Intern, Microsoft Research, Redmond
Winter 2012	Software Engineer, Victrio Inc., Menlo Park
Summer 2010	Research Intern, Microsoft Research Asia, Beijing

Software

gdp_accountant	`TensorFlow` implementation of privacy analysis of deep learning in the Gaussian differential privacy framework. Paper #14. Maintainer: Zhiqi Bu
higrad	R package for implementing the HiGrad algorithm for uncertainty quantification with stochastic gradient descent. Paper #41. Maintainer: Yuancheng Zhu
grpSLOPE	R package for selecting groups of variables via the sorted ℓ_1-penalized estimation (SLOPE). Paper #7. Maintainer: Alexej Gossmann
SLOPE	R package for fitting the sorted ℓ_1-penalized estimation (SLOPE) for false discovery rate control in high-dimensional linear regression. Paper #1. Maintainer: Johan Larsson

Grants

Facebook Faculty Research Award, PI, 2020–2021

NIH RF1-AG063481-01S1, co-PI (with Qi Long): "Advancing Analysis of Multi-omics Data in Alzheimer's Disease Research," 2020–2021

Alfred P. Sloan Research Fellowship, PI, 2020–2022

NSF CCF-1934876 (HDR TRIPODS), co-PI (with Shivani Agarwal): "Penn Institute for Foundations of Data Science," 2019–2022

Wharton Dean's Research Fund, PI, 2019–2021

Wharton Dean's Fund for Post-Doctoral Research, PI, 2019–2021

NSF CAREER DMS-1847415, PI: "A Statistical Inferential Framework for Online Learning Algorithms," 2019–2024

NSF CCF-1763314, co-PI (with Aaron Roth): "Foundations of Adaptive Data Analysis," 2018—2021