Feng Ruan

University of California, Berkeley
Sutardja Dai Hall
2594 Hearst Ave
Berkeley, CA 94720

Phone: (650) 285-7163
Email: fengruan@berkeley.edu
Homepage: https://fengruan.github.io/

Education

Postdoctoral Researcher. University of California, Berkeley. 2019-now. Advisor: Michael I . Jordan.

Ph.D. Department of Statistics, Stanford, 2019. Advisor: John C. Duchi. GPA: 4.2/4.3.

B.S. (with distinction) Department of Mathematics, Peking University, 2014. GPA: 3.9/4.0.

B.A. (double degree) China Center for Economic Research, Peking University, 2014.

Publications

Journal Publications[1]

1. J. C. Duchi and F. Ruan. Asymptotic optimality in stochastic optimization. *Annals of Statistics*, 49(1):21–48, 2021.
2. I. Lemhadri, F. Ruan, and R. Tibshirani. Lassonet: A neural network with feature sparsity. *Journal of Machine Learning Research*, 22(127):1–29, 2021.
3. L. T. Liu, F. Ruan, H. Mania, and M. I. Jordan. Bandit learning in decentralized matching markets. *Journal of Machine Learning Research, to appear*, 2021.
4. K. Khamaru, A. Pananjady, F. Ruan, M. J. Wainwright, and M. I. Jordan. Is temporal difference learning optimal? An instance-dependent analysis. *SIAM Journal on Mathematics of Data Science, to appear*, 2021.
5. J. C. Duchi and F. Ruan. Stochastic methods for composite and weakly convex optimization problems. *SIAM Journal on Optimization*, 28:3229–3259, 2018.
6. J. C. Duchi and F. Ruan. Solving (most) of a set of quadratic equalities: Composite optimization for robust phase retrieval. *Information and Inference*, iay015, 2018.
7. J. C. Duchi, K. Khosravi, and F. Ruan. Multiclass classification, information, divergence, and surrogate risk. *Annals of Statistics*, 46:3246–3275, 2018.
8. B. Kaneshiro*, F. Ruan*, C. W. Baker, and J. Berger. Characterizing listener engagement with popular songs using large-scale music discovery data. *Frontiers in Psychology*, 8:416, 2017.
9. S. Osher, F. Ruan, J. Xiong, Y. Yao, and W. Yin. Sparse recovery via differential inclusions. *Applied and Computational Harmonic Analysis*, 41(2):436–469, 2016.

Conference Publications[2]

1. J. Duchi and F. Ruan. A constrained risk inequality for general losses. In *International Conference on Artificial Intelligence and Statistics*, pages 802–810. PMLR, 2021. (oral presentation)
2. I. Lemhadri, F. Ruan, and R. Tibshirani. Lassonet: Neural networks with feature sparsity. In *International Conference on Artificial Intelligence and Statistics*, pages 10–18. PMLR, 2021

[1] Default author ordering is alphabetical, and * denotes equal contribution.
[2] Default author ordering is alphabetical, and * denotes equal contribution.

3. J. C. Duchi, F. Ruan, and C. Yun. Minimax bounds on stochastic batched convex optimization. In *Proceedings of the Thirty First Annual Conference on Computational Learning Theory (COLT)*, 2018. (27.2% acceptance rate).

4. J. C. Duchi, K. Khosravi, and F. Ruan. Information measures, experiments, multi-category hypothesis tests, and surrogate losses. In *The 54th Allerton Conference on Communication, Control, and Computing*, 2016.

Preprints & Papers under Review[3]

1. A. Montanari, F. Ruan, Y. Sohn, and J. Yan. The generalization error of max-margin linear classifiers: High-dimensional asymptotics in the overparametrized regime. *Under revision at the Annals of Statistics*, 2019.

2. A. Montanari, F. Ruan, and J. Yan. Adapting to unknown noise distribution in matrix denoising. *under revision at Bernoulli*, 2021.

3. J. C. Duchi and F. Ruan. The right complexity measure in locally private estimation: It is not the Fisher information. *Under revision at the Annals of Statistics*, 2021.

4. F. Ruan, K. Liu, and M. I. Jordan. Taming nonconvexity in kernel feature selection—favorable properties of the laplace kernel. *arXiv preprint arXiv:2106.09387*, 2021.

5. K. Liu and F. Ruan. A self-penalizing objective function for scalable interaction detection. *arXiv preprint arXiv:2011.12215*, 2020.

6. J. C. Duchi and F. Ruan. Composite optimization, model misspecifciation and single index modeling. *Draft available upon request (on arXiv soon)*, 2021.

7. M. I. Jordan, K. Liu, and F. Ruan. Nonnegative garrotte without garrotte? the "automatic" sparsity of kernel feature selection. *Draft available upon request (on arXiv soon)*, 2021

Softwares

1. F. Ruan, J. Xiong and Y. Yao R Package *LIBRA*, *available at* `https://cran.r-project.org/web/packages/Libra/index.html`

2. I. Lemhadri, F. Ruan, L. Abraham and R. Tibshirani Python Package, *available at* `https://lassonet.ml/`

3. K. Liu and F. Ruan Python Package, *available at* `https://keli-feng.github.io/package/metric-learning.zip`

4. K. Liu, F. Ruan and R. Tibshirani R Package *FCLUSTER*.

Awards

Statistics Department Teaching Award, Stanford University, 2017.

Stanford Graduate Fellowship (E.K. Potter Fellowship), Stanford University, 2014.

Outstanding Graduates in Prominent Talents in Applied Mathematics Training Program, Peking University, 2014.

Silver Medal in Romanian Master of Mathematical Olympiad, 2009.

[3]Default author ordering is alphabetical, and * denotes equal contribution.

Teaching Experience

Course Served as Session Lecturer at Summer School

Lectures on Stochastic Convex Optimization, PCMI, Summer 2017.

Course Served as Teaching Assistant at Stanford University

Statistics 318, Modern Markov Chains. Winter 2019.

Statistics 60, Introduction to Statistical Methods: Precalculus, Fall 2018.

Statistics 202, Data Mining and Analysis, Winter 2018.

Computer Science 229T, Statistical Learning Theory, Winter 2017.

Statistics 310A, Theory of Probability, Autumn 2016.

Statistics 300, Theory of Statistics, Autumn 2015.

Statistics 208, Introduction to the Bootstrap, Spring 2015.

Talks and Presentations

Conference

2020	Artificial Intelligence and Statistics (AIStats) (online)
2020	Joint Statistical Meetings (JSM) (online)
2018	Conference on Learning Theory (COLT) (Stockholm, Sweden)
2017	IMS/ASA Spring Research Conference (Rutgers University, New Brunswick, NJ, USA)

Seminars

2021	Statistics Department Seminar, University of California, Berkeley
2021	Statistics Department Seminar, ETH Zurich
2021	Statistics Group Seminar, HongKong University of Science and Technology
2021	International Seminar on Selective Inference
2020	Information Theory Group Seminar (BLISS), University of California, Berkeley
2019	Information Theory Forum, Stanford University
2019	Biostatistics Department Seminar, University of California, Berkeley
2019	Data Science Institute Department Seminar, University of California, San Diego
2019	Applied Mathematics and Statistics Department Seminar, Johns Hopkins University
2019	ISYE Department Seminar, Georgia Institute of Technology
2019	EE Department Seminar, University of Michigan
2019	EE Department Seminar, Princeton University
2019	Statistics Department Seminar, University of Wisconsin-Madison
2019	Statistics Department Seminar, The Wharton School at the University of Pennsylvania
2019	Statistics Department Seminar, University of Southern California, Marshall
2019	Statistics Department Seminar, Rutgers University
2018	Machine Learning Group Seminar, Stanford University
2017	Statistics Department Seminar, HongKong University of Science and Technology
2017	Statistics Department Retreat Seminar, Stanford University
2017	Machine Learning Group Seminar, Stanford University
2016	Statistics Department Retreat Seminar, Stanford University

Reviewing

Journal Reviewing *Annals of Statistics (AOS)*, *Journal of the American Statistical Association (JASA)*, *Bernoulli*, *Mathematical Programming*, *SIAM Journal of Optimization (SIOPT)*, *Operations Research*, *Mathematics of Operations Research*, *Journal of Machine Learning Research (JMLR)*, *IEEE Transactions on Information Theory (TIT)*, *IEEE Transactions on Signal Processing (TSP)*, *IEEE Journal on Selected Areas in Information Theory (JSAIT)*, *IEEE Transactions on Knowledge and Data Engineering*, *IMA Journal on Numerical Analysis*, *PLOS ONE*, *Frontiers in Psychology*

Conference Reviewing International Conference on Machine Learning (ICML), Neural Information Processing Systems (NIPS), Artificial Intelligence and Statistics (AIStats), Conference on Learning Theory (COLT), ACM Symposium on Theory of Computing (STOC), IEEE International Symposium on Information Theory (ISIT).

Outside Interests

Hiking, piano, card-games, table tennis