Feng Ruan

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Education

Ph.D. Department of Statistics, Stanford, 2019 (expected). Advisor: John 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.

Research Interests

Statistical Learning Theory; Convex and Nonconvex Optimization; High Dimensional Statistics

Publications[1]

Journal Publications

1. J. C. Duchi and F. Ruan. Asymptotic optimality in stochastic optimization. *Annals of Statistics*, to appear, 2019.
2. J. C. Duchi and F. Ruan. Stochastic methods for composite and weakly convex optimization problems. *SIAM Journal on Optimization*, 28:3229–3259, 2018.
3. 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.
4. J. C. Duchi, K. Khosravi, and F. Ruan. Multiclass classification, information, divergence, and surrogate risk. *Annals of Statistics*, 46:3246–3275, 2018.
5. 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.
6. 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

1. 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).
2. 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.

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

Preprints & Papers under Review

1. 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*, 2018.
2. A. Montanari, F. Ruan, and J. Yan. Adapting to unknown noise distribution in matrix denoising. *arXiv:1810.02954 [stat.TH]*, 2018.
3. J. C. Duchi and F. Ruan. A constrained risk inequality for general losses. *arXiv:1804.08116 [stat.TH]*, 2018.
4. K. Liu, F. Ruan, and R. Tibshirani. To square or square root? A more powerful feature extraction technique. *Draft available upon request (on arXiv soon)*, 2018.
5. J. C. Duchi and F. Ruan. Composite optimization, model misspecifciation and single index modeling. *Draft available upon request (on arXiv soon)*, 2018.

Working Papers

1. A. Montanari, F. Ruan, and J. Yan. The capacity of two-layer neural network. 2018. In Progress.
2. F. Ruan and W. Su. Smoothing the boosting in linear regression. 2018. In Progress.

Book chapters

1. F. Ruan, J. Xiong, and Y. Yao. A tutorial on libra: R package for the linearized bregman algorithm in high dimensional statistics. In *Springer Handbook on Big Data Analytics*. Springer, 2016.

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. K. Liu, F. Ruan and R. Tibshirani R Package *FCLUSTER*, *available upon request.*

Awards

Statistics Department Teaching Award, Stanford University, 2017.

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

Merited 'Three Goods' student in the Department of Mathematics, Peking University, 2013.

Second Prize in Interdisciplinary Contest in Modeling of COMAP, Peking University, 2013.

First Prize in National Mathematical Olympiad in Senior, 2009.

Silver Medal in Romanian Master of Mathematical Olympiad, 2009.

Fellowships

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

Hui Rong Li scholarship, Peking University, 2013.

Samsung scholarship, Peking University, 2012.

Yong Wang scholarship, Peking University, 2011.

Outstanding freshman scholarship, Peking University, 2010.

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

Statistics 202, Theoretical Statistics, Winter 2018.

Statistics 231/Computer Science 229T, Statistical Learning Theory, Spring 2017.

Statistics 310A, Theory of Probability, Autumn 2017.

Statistics 300, Theory of Statistics, Autumn 2016.

Statistics 208, Introduction to the Bootstrap, Spring 2016.

Professional Service

Journal Reviewing

Operations Research
IEEE Transactions on Information Theory
IEEE Transactions on Knowledge and Data Engineering
IMA Journal on Numerical Analysis

Conference Reviewing

Neural Information Processing Systems (NIPS)
International Conference on Machine Learning (ICML)
Artificial Intelligence and Statistics (AIStats)
IEEE International Symposium on Information Theory (ISIT)

Talks and Presentations

Conference

2018 Conference on Learning Theory (COLT) (Stockholm, Sweden)
2017 IMS/ASA Spring Research Conference (Rutgers University, New Brunswick, NJ, USA)

Seminars and Invited Talks

2018 Statistics Department Retreat Seminar, Stanford University
2018 Machine Learning Group Seminar, Stanford University
2017 Statistics 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

Outside Interests

Hiking, piano, card-games, table tennis

References[2]

Dr. Emmanuel Candès
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Dr. John Duchi
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Dr. Andrea Montanari
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Dr. Robert Tibshirani
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[2]The ordering is alphabetical.