Lihua Lei

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Education

Postdoctoral Fellow, Stanford University. 9/2019 - present
Advisor: Emmanuel Candès

Ph.D. Statistics, University of California, Berkeley. 8/2014 - 8/2019
Advisors: Peter, J. Bickel, and Michael, I. Jordan.

B.S. Statistics, Peking University. 9/2010 - 6/2014
Undergraduate Thesis Advisor: Song Xi, Chen.

Awards

Eric Lehmann Citation (Annual Dissertation Award in Theoretical Statistics), 2019.

Citadel Fellowship, 2017-2018.

Outstanding Graduate Stundent Instructor Award, 2016.

ICML (International Conference on Machine Learning) Travel Award, 2016.

ACIC (Atlantic Causal Inference Conference) Travel Award, 2018.

Scholarship from The Sally and Terry Speed Graduate Support Fund, 2015.

Teaching Experiences

TA, Statistics 210A, Theoretical Statistics A, Fall 2015 (taught by Michael, I. Jordan).

TA, Statistics 210B, Theoretical Statistics B, Spring 2016 (taught by Martin, J. Wainright).

Research Experiences

Research Interests

Causal Inference; Multiple hypothesis testing; Network analysis;
High dimensional statistical inference; Resampling methods; Stochastic optimization

Journal Publications

1. **Lei, L.**, & Fithian, W. (2018). AdaPT: An Interactive Procedure For Multiple Testing With Side Information. To appear in *Journal of the Royal Statistical Society: Series B (JRSS-B).*

2. **Lei, L.**, Bickel, P. J., & El Karoui, N. (2018). Asymptotics For High Dimensional Regression M-Estimates: Fixed Design Results. To appear in *Probability Theory and Related Fields (PTRF)*.

3. Chen, S. X., **Lei, L.**, & Tu, Y. (2016). Functional Coefficient Moving Average Model with Applications to forecasting Chinese CPI. *Statistica Sinica*, 26, 1649-1672.

Conference Publications

1. Ye, Y., **Lei, L.**, & Ju, C. (2018). HONES: A Fast and Tuning-free Homotopy Method For Online Newton Step. To appear in *Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS)*.

2. **Lei, L.**, Ju, C., Chen, J., & Jordan, M. I. (2017). Nonconvex Finite-Sum Optimization Via SCSG Methods. In *Proceedings of the 30th Advances in Neural Information Processing Systems (NIPS)*.

3. **Lei, L.**, & Jordan, M. I. (2017). Less than a Single Pass: Stochastically Controlled Stochastic Gradient. In *Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS)*.

4. **Lei, L.**, & Fithian, W. (2016). Power of Ordered Hypothesis Testing. In *Proceedings of the 33th International Conference on Machine Learning*.

Preprints and Submissions

1. D'Amour, A., Ding, P., Feller, A., **Lei, L.**, & Sekhon, J. (2017) Overlap in High Dimensional Observational Studies. *ArXiv e-prints, abs/1711.02582*.

2. **Lei, L.**, Ramdas, A., & Fithian, W. (2017) STAR: A General Interactive Framework For FDR Control Under Structural Constraints. *ArXiv e-prints, abs/1710.02776*.

3. **Lei, L.** & Ding, P. (2018) Regression Adjustment in Randomized Experiments With A Diverging Number of Covariates. *ArXiv e-prints, abs/1806.07585*.

4. Li, T., **Lei, L.**, Bhattacharyya, S., Sarkar, P., Bickel, P. J., & Levina, E. (2019) Hierarchical community detection by recursive partitioning. *ArXiv e-prints, abs/1810.01509*.

5. **Lei, L.** & Jordan, M. I. (2019) On the Adaptivity of Stochastic Gradient-Based Optimization. *ArXiv e-prints, abs/1904.04480*.

6. **Lei, L.** & Bickel, P. J. (2019) An Assumption-Free Exact Test For Fixed-Design Linear Models With Exchangeable Errors. *ArXiv e-prints, abs/1907.06133*.

7. **Lei, L.** (2019) Unified $\ell_{2\to\infty}$ Eigenspace Perturbation Theory for Symmetric Random Matrices. *ArXiv e-prints, abs/1909.04798*.

Softwares

1. `adaptMT`: `R` package on Adaptive P-value Thresholding (on CRAN);

2. `mkn`: `R` package on multiple knockoffs based inference (on github).

Professional Services

Invited Talks

Regression Adjustment in Randomized Experiments With A Diverging Number of Covariates. *Joint Statistical Meeting, Topic Contributed Session*, Aug. 2019.

Hierarchical community detection by recursive partitioning. *ICSA Applied Statistics Symposium*, Jun. 2019.

Model-Free Assessment of Overlap in Observational Studies. *At Yale University (Department Seminar)*, Feb. 2019.

Hierarchical community detection by recursive partitioning. *At University of California, Davis (Student Seminar)*, Jan. 2019.

Model-Free Assessment of Overlap in Observational Studies. *At Stanford University (Stefan Wager's group)*, Jan. 2019.

Statistical Inference in Moderate Dimensions. *At University of South California (Department Seminar)*, Dec. 2018.

Hierarchical community detection by recursive bi-partitioning. *At University of Michigan (Liza Levina's group)*, Oct. 2018.

Statistical Inference in Moderate Dimensions. *At University of Michigan (Student Seminar)*, Oct. 2018.

Regression Adjustment in Randomized Experiments With A Diverging Number of Covariates. *At University of Michigan (Xuming He's group)*, Oct. 2018.

AdaPT: An Interactive Procedure For Multiple Testing With Side Information. *International Conference on Econometrics and Statistics (EcoSta)*, Jun. 2018.

Regression Adjustment in Randomized Experiments With A Diverging Number of Covariates. *Atlantic Causal Inference Conference (ACIC)*, May. 2018.

Stochastically Controlled Stochastic Gradient (SCSG) Method. *At University of California, Davis (Cho-Jui Hsieh's group)*, Mar. 2018.

AdaPT: An Interactive Procedure For Multiple Testing With Side Information. *At Stanford University (David Tse's group)*, Feb. 2018.

Asymptotics For High Dimensional Regression M-Estimates: Fixed Design Results. *Berkeley-Stanford Econometrics Jamboree*, Nov. 2017.

Contributed Talks and Poster Presentation

Workshop on Higher-Order Asymptotics and Post-Selection Inference (WHOA-PSI), 2018.

European Causal Inference Meeting (EuroCIM), 2018.

Neural Information Processing Systems (NIPS), 2017.

International Conference on Multiple Comparison Procedures (MCP), 2017.

International Conference on Artificial Intelligence and Statistics (AISTATS), 2017.

Joint Statistical Meetings (JSM), 2016, 2018.

International Conference on Machine Learning (ICML), 2016.

Stanford-Berkeley Joint Colloquium, 2015, 2016, 2017.

Berkeley Statistics Annual Research Symposium (BSTARS), 2017, 2018.

Reviewing

Journals: Annals of Statistics (AoS), Journal of the American Statistical Association (JASA), Journal of the Royal Statistical Society-Series A/B (JRSS-A, JRSS-B), Electronic Journal of Statistics (EJS), Biometrics, Journal of Machine Learning Research (JMLR), Journal of Causal Inference (JCL), Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Stat.

Conferences: ICML, NeurIPS, AISTATS.