Li, Gen

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Education

2016.8-2021.7	Tsinghua University.	**Ph.D. (Hons.)**
	Electronic Engineering	Advisor: Yuantao Gu
2012.8-2016.7	Electronic Engineering, Tsinghua University.	**Bachelor**
2013.8-2016.7	Mathematics, Tsinghua University.	**Bachelor**

Work experience

2022.1-now	University of Pennsylvania.	**Postdoc**
	Statistics and Data Science, Wharton School	Advisor: Yuxin Chen and Yuting Wei
2021.9-2021.12	Princeton University.	**Postdoc**
	Electrical and Computer Engineering	Advisor: Yuxin Chen

Research interest

Reinforcement learning, high-dimensional statistics, mathematical optimization, machine learning

Publications

1. G. Li, Y. Wei, Y. Chi, Y. Gu, and Y. Chen, "Sample Complexity of Asynchronous Q-Learning: Sharper Analysis and Variance Reduction," IEEE Transactions on Information Theory, 2021

2. G. Li, L. Shi, Y. Chen, Y. Gu, and Y. Chi, "Breaking the Sample Complexity Barrier to Regret-Optimal Model-Free Reinforcement Learning," Neural Information Processing Systems (NeurIPS) (Spotlight), December 2021.

3. G. Li, Y. Chen, Y. Chi, Y. Gu, and Y. Wei, "Sample-Efficient Reinforcement Learning Is Feasible for Linearly Realizable MDPs with Limited Revisiting," Neural Information Processing Systems (NeurIPS), December 2021.

4. G. Li and Y. Gu, "Theory of Spectral Method for Union of Subspaces-Based Random Geometry Graph," International Conference on Machine Learning (ICML), July 2021.

5. G. Li, C Cai, Y. Chen, Y. Gu, Y. Wei, and Y. Chi, "Tightening the Dependence on Horizon in the Sample Complexity of Q-Learning," International Conference on Machine Learning (ICML), July 2021.

6. G. Li, Y. Wei, Y. Chi, Y. Gu, and Y. Chen, "Softmax Policy Gradient Methods Can Take Exponential Time to Converge," Conference on Learning Theory (COLT), August 2021.

7. G. Li, Y. Wei, Y. Chi, Y. Gu, and Y. Chen, "Breaking the Sample Size Barrier in Model-Based Reinforcement Learning with a Generative Model," Neural Information Processing Systems (NeurIPS), December 2020

8. G. Li, Y. Wei, Y. Chi, Y. Gu, and Y. Chen, "Sample Complexity of Asynchronous Q-Learning: Sharper Analysis and Variance Reduction," Neural Information Processing Systems (NeurIPS), December 2020

9. G. Li, Q. Liu, and Y. Gu, "Rigorous Restricted Isometry Property for Low-Dimensional Subspaces," Applied and Computational Harmonic Analysis, 49(2):608-635, September 2020.

10. Y. M. Lu, and G. Li, "Phase transitions of spectral initialization for high-dimensional non-convex estimation," Information and Inference: A Journal of the IMA 9(3), 507-541, September 2020.

11. G. Li, X. Xu, and Y. Gu, "Lower Bound for RIP Constants and Concentration of Sum of Top Order Statistics," IEEE Transactions on Signal Processing, 68:3169-3178, April 2020.

12. X. Xu, G. Li, and Y. Gu, "Unraveling the Veil of Subspace RIP Through Near-Isometry on Subspaces," IEEE Transactions on Signal Processing, 68:3117-3131, April 2020.

13. C. Cai, G. Li, Y. Chi, H. V. Poor, and Y. Chen, "Subspace Estimation from Unbalanced and Incomplete Data Matrices: $\ell_{2,\infty}$ Statistical Guarantees," Annals of Statistics, 2020.

14. C. Cai, G. Li, Y. Chi, H. V. Poor, and Y. Chen, "Nonconvex Low-Rank Symmetric Tensor Completion from Noisy Data," Neural Information Processing Systems (NeurIPS), Vancouver, Canada, December 2019.

15. G. Li, J. Yan, and Y. Gu, Information Theoretic Lower Bound of Restricted Isometry Property Constant, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brighton, UK, May, 2019.

16. G. Li and Y. Gu, "Restricted Isometry Property of Gaussian Random Projection for Finite Set of Subspaces," IEEE Transactions on Signal Processing, 66(7):1705-1720, April 2018.

17. L. Meng, G. Li, J. Yan, and Y. Gu, "A General Framework for Understanding Compressed Subspace Clustering Algorithms," IEEE Journal of Selected Topics in Signal Processing, 12(6):1504-1519, December 2018.

18. G. Li, J. Yan, and Y. Gu, "Outage Probability Conjecture Does Not Hold for Two-Input-Multiple-Output (TIMO) System," IEEE International Symposium on Information Theory (ISIT), Vail, CO, USA, June 2018.

19. J. Wang, G. Li, L. Rencker, W. Wang, and Y. Gu, "An RIP-Based Performance Guarantee of Covariance-Assisted Matching," IEEE Signal Processing Letters, 25(6), 828-832, March 2018.

20. Y. Chen, G. Li, and Y. Gu, "Active Orthogonal Matching Pursuit for Sparse Subspace Clustering," IEEE Signal Processing Letters, 25(2):164 - 168, February 2018.

21. G. Li, Y. Jiao, and Y. Gu, "Convergence Analysis on A Fast Iterative Phase Retrieval Algorithm without Independence Assumption," IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Calgary, Canada, April 2018.

22. Y. Jiao, G. Li, and Y, Gu, "Principal Angles Preserving Property of Gaussian Random Projection for Subspaces," IEEE Global Conference on Signal and Information Processing (GlobalSIP), Montreal, Canada, November 2017.

23. G. Li and Y. Gu, "Distance-preserving property of random projection for subspaces," IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), New Orleans, USA, March 2017.

24. G. Li, Y. Gu, and Y. M. Lu, "Phase Retrieval Using Iterative Projections: Dynamics in the Large Systems Limit," IEEE Allerton Conference on Communications, Control, and Computing, September 2015.