Publications

[1] Tengyuan Liang, Alexander Rakhlin, and Xiyu Zhai. On the Multiple Descent of Minimum-Norm Interpolants and Restricted Lower Isometry of Kernels. In *Proceedings of the Conference On Learning Theory (COLT)*, pages 1–29. PMLR, July 2020.

[2] Tengyuan Liang and Alexander Rakhlin. Just interpolate: Kernel "Ridgeless" regression can generalize. *The Annals of Statistics*, 48(3):1329–1347, July 2020.

[3] Tengyuan Liang and Hai Tran-Bach. Mehler's Formula, Branching Process, and Compositional Kernels of Deep Neural Networks. *arXiv:2004.04767*, April 2020.

[4] Xialiang Dou and Tengyuan Liang. Training Neural Networks as Learning Data-Adaptive Kernels: Provable Representation and Approximation Benefits. *Journal of the American Statistical Association*, pages 1–14, March 2020.

[5] Tengyuan Liang and Pragya Sur. A Precise High-Dimensional Asymptotic Theory for Boosting and Minimum-L1-Norm Interpolated Classifiers. *arXiv:2002.01586*, February 2020.

[6] T. Tony Cai, Tengyuan Liang, and Alexander Rakhlin. Weighted message passing and minimum energy flow for heterogeneous stochastic block models with side information. *Journal of Machine Learning Research*, 21(11):1–34, January 2020.

[7] Tengyuan Liang. Estimating Certain Integral Probability Metric (IPM) is as Hard as Estimating under the IPM. *arXiv:1911.00730*, November 2019.

[8] Tengyuan Liang and Weijie J. 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, April 2019.

[9] Tengyuan Liang and James Stokes. Interaction matters: A note on non-asymptotic local convergence of generative adversarial networks. In *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*, volume 89, pages 907–915. PMLR, April 2019.

[10] Tengyuan Liang, Tomaso Poggio, Alexander Rakhlin, and James Stokes. Fisher-rao metric, geometry, and complexity of neural networks. In *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*, volume 89, pages 888–896. PMLR, April 2019.

[11] Tengyuan Liang. On How Well Generative Adversarial Networks Learn Densities: Nonparametric and Parametric Results. *arXiv:1811.03179*, November 2018.

[12] Max H. Farrell, Tengyuan Liang, and Sanjog Misra. Deep Neural Networks for Estimation and Inference. *arXiv:1809.09953*, September 2018.

[13] Belinda Tzen, Tengyuan Liang, and Maxim Raginsky. Local optimality and generalization guarantees for the langevin algorithm via empirical metastability. In *Proceedings of the Conference On Learning Theory (COLT)*, volume 75, pages 857–875. PMLR, July 2018.

[14] T. Tony Cai, Tengyuan Liang, and Alexander Rakhlin. Computational and statistical boundaries for submatrix localization in a large noisy matrix. *The Annals of Statistics*, 45(4):1403–1430, August 2017.

[15] Satyen Kale, Zohar Karnin, Tengyuan Liang, and Dávid Pál. Adaptive feature selection: Computationally efficient online sparse linear regression under RIP. In *Proceedings of the International Conference on Machine Learning (ICML)*, volume 70, pages 1780–1788. PMLR, August 2017.

[16] Tony Cai, Tengyuan Liang, and Alexander Rakhlin. On Detection and Structural Reconstruction of Small-World Random Networks. *IEEE Transactions on Network Science and Engineering*, 4(3):165–176, July 2017.

[17] T. Tony Cai, Tengyuan Liang, and Alexander Rakhlin. Geometric inference for general high-dimensional linear inverse problems. *The Annals of Statistics*, 44(4):1536–1563, August 2016.

[18] Tengyuan Liang, Alexander Rakhlin, and Karthik Sridharan. Learning with square loss: Localization through offset rademacher complexity. In *Proceedings of The Conference on Learning Theory (COLT)*, volume 40, pages 1260–1285. PMLR, July 2015.

[19] Alexandre Belloni, Tengyuan Liang, Hariharan Narayanan, and Alexander Rakhlin. Escaping the local minima via simulated annealing: Optimization of approximately convex functions. In *Proceedings of The Conference on Learning Theory (COLT)*, volume 40, pages 240–265. PMLR, July 2015.

[20] T. Tony Cai, Tengyuan Liang, and Harrison H. Zhou. Law of log determinant of sample covariance matrix and optimal estimation of differential entropy for high-dimensional Gaussian distributions. *Journal of Multivariate Analysis*, 137:161–172, May 2015.