Yuchen Zhang

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Gates Computer Science 254,
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Educations

University of California, Berkeley **2011 - 2016**
Doctor of Philosophy in Computer Science
Advised by Michael I. Jordan and Martin J. Wainwright

University of California, Berkeley **2011 - 2013**
Master of Arts in Statistics

Tsinghua University **2007 - 2011**
Bachelor in Computer Science
Supervised by Andrew C. Yao

Awards & Honors

2017 Best Paper Award, Annual Conference on Learning Theory (COLT).
2016 Outstanding Reviewer Award, International Conference on Machine Learning (ICML).
2015 Baidu Fellowship.
2013 Microsoft Research PhD Fellowship Finalist.
2011 UC Berkeley EECS Department Fellowship.
2011 Outstanding Undergraduate Dissertation Award.
2011 Boeing Scholarship.
2010 Tencent Scholarship for Excellent Academic Performance.
2006 Silver Medal in Asian Physics Olympiad.
2006 Gold Medal in National Physics Olympiad (5^{th} among 400,000 participants).

Research Topics

Stanford University (Post-doc Researcher) **2011 - Present**

- Algorithms for non-convex machine learning.
- Semantic parsing for question answering.

University of California, Berkeley (Ph.D. Student) **2011 - 2016**

- Distributed algorithms and distributed systems.
- Provable algorithm for learning non-linear or non-convex models.
- Fundamental trade-offs between communication, computation and statistical accuracy.

Microsoft Research (Intern) **Summer, 2014**

- Convex optimization.

Google (Intern) **Summer, 2013**

- New algorithm for recommender systems.

Microsoft Research Asia (Intern) **2009 - 2011**

- Click modeling for web search and online advertising.

Tsinghua University (Undergraduate Student) **2007 - 2009**

- Theoretical computer science.

Preprints

[P1] **Y. Zhang** and MI. Jordan. Splash: User-friendly Programming Interface for Parallelizing Stochastic Algorithms. *arXiv:1506.07552*, 2015.

[P2] J. Duchi, MI. Jordan, M. Wainwright and **Y. Zhang** (alpha-beta order). Optimality Guarantees for Distributed Statistical Estimation. *arXiv:1405.0782*, 2014.

Journal Publications

[J1] **Y. Zhang** M. Wainwright and MI. Jordan. Optimal prediction for sparse linear models? Lower bounds for coordinate-separable M-estimators. *Electronic Journal of Statistics*.

[J2] X. Chen, A. Guntuboyina and **Y. Zhang** (alpha-beta order). On Bayes Risk Lower Bounds. *Journal of Machine Learning Research*.

[J3] **Y. Zhang**, X. Chen, D. Zhou and MI. Jordan. Spectral Methods meet EM: A Provably Optimal Algorithm for Crowdsourcing. *Journal of Machine Learning Research*.

[J4] **Y. Zhang**, J. Duchi and M. Wainwright. Divide and Conquer Kernel Ridge Regression: A Distributed Algorithm with Minimax Optimal Rates. *Journal of Machine Learning Research*.

[J5] **Y. Zhang**, J. Duchi and M. Wainwright. Communication-Efficient Algorithms for Statistical Optimization. *Journal of Machine Learning Research*.

[J6] **Y. Zhang** and X. Sun. The Antimagicness of the Cartesian Product of Graphs. *Theoretical Computer Science*.

Conference Publications

[C1] **Y. Zhang**, P. Liang, M. Wainwright. Convexified Convolutional Neural Networks. *International Conference on Machine Learning (ICML)*, 2017.

[C2] **Y. Zhang**, P. Liang, M. Charikar. A Hitting Time Analysis of Stochastic Gradient Langevin Dynamics. *Annual Conference on Learning Theory (COLT)*, 2017 **(Best paper award)**.

[C3] **Y. Zhang**, JD. Lee, M. Wainwright and MI. Jordan. On the Learnability of Fully-connected Neural Networks. *Artificial Intelligence and Statistics (AISTATS)*, 2017.

[C4] **Y. Zhang**, X. Chen, D. Zhou and MI. Jordan. Spectral Methods meet EM: A Provably Optimal Algorithm for Crowdsourcing. *Annual Conference on Neural Information Processing Systems (NIPS)*, 2016.

[C5] C. Jin, **Y. Zhang**, S. Balakrishnan, M. Wainwright, MI. Jordan. L1-regularized Neural Networks are Improperly Learnable in Polynomial Time. *International Conference on Machine Learning (ICML)*, 2016.

[C6] **Y. Zhang**, M. Wainwright and MI. Jordan. Distributed Estimation of Generalized Matrix Rank: Efficient Algorithms and Lower Bounds. *International Conference on Machine Learning (ICML)*, 2015.

[C7] **Y. Zhang** and L. Xiao. DiSCO: Communication-Efficient Distributed Optimization of Self-Concordant Loss. *International Conference on Machine Learning (ICML)*, 2015.

[C8] **Y. Zhang** and L. Xiao. Stochastic Primal-Dual Coordinate Method for Regularized Empirical Risk Minimization. *International Conference on Machine Learning (ICML)*, 2015.

[C9] **Y. Zhang**, X. Chen, D. Zhou and MI. Jordan. Spectral Methods meet EM: A Provably Optimal Algorithm for Crowdsourcing. *Annual Conference on Neural Information Processing Systems (NIPS)*, 2014 **(Spotlight presentation)**.

[C10] **Y. Zhang**, M. Wainwright and MI. Jordan. Lower Bounds on the Performance of Polynomial-time Algorithms for Sparse Linear Regression. *Annual Conference on Learning Theory (COLT)*, 2014.

[C11] **Y. Zhang**, A. Ahmed, V. Josifovski and A. Smola. Taxonomy Discovery for Personalized Recommendation. *ACM International Conference on Web Search and Data Mining (WSDM)*, 2014.

[C12] **Y. Zhang**, J. Duchi, M. Wainwright and MI. Jordan. Information-theoretic Lower Bounds for Distributed Statistical Estimation with Communication Constraints. *Annual Conference on Neural Information Processing Systems (NIPS)*, 2013 **(Oral presentation)**.

[C13] **Y. Zhang**, J. Duchi and M. Wainwright. Divide and Conquer Kernel Ridge Regression. *Annual Conference on Learning Theory (COLT)*, 2013.

[C14] **Y. Zhang**, J. Duchi and M. Wainwright. Communication-Efficient Algorithms for Statistical Optimization. *Annual Conference on Neural Information Processing Systems (NIPS)*, 2012.

[C15] W. Chen, D. Wang, **Y. Zhang** and Q. Yang. Understanding Click Noise: A Noise-aware Click Model for Web Search. *ACM International Conference on Web Search and Data Mining (WSDM)*, 2012.

[C16] **Y. Zhang**, W, Chen and D, Wang, Q. Yang. User-click Modeling for Understanding and Predicting Search-behavior. *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2011.

[C17] B. Hu, **Y. Zhang**, G. Wang, Q. Yang, W. Chen. Characterize Search Intent Diversity into Click Models. *International World Wide Web Conference (WWW)*, 2011.

[C18] **Y. Zhang**, D. Wang, G. Wang, W. Chen, Z. Zhang, B. Hu and L. Zhang. Learning Click Model via Probit Bayesian Inference. *ACM International Conference on Information and Knowledge Management (CIKM)*, 2010.

[C19] D. Wang, W. Chen, G. Wang, **Y Zhang** and B. Hu. Explore Click Models for Search Ranking. *ACM International Conference on Information and Knowledge Management (CIKM)*, short paper, 2010.

[C20] F. Zhong, D. Wang, G. Wang, W. Chen, **Y. Zhang**, Z. Chen and H. Wang. Incorporating Post-Click Behaviors Into a Click Model. *Annual International ACM SIGIR Conference (SIGIR)*, 2010.

[C21] **Y. Zhang** and L. Zhang. Extracting Independent Rules: a New Perspective of Boosting. *International Symposium on Artificial Intelligence and Mathematics (ISAIM)*, 2010.

Teaching Experiences

Spring 2015	Teaching assistant, Introduction to machine learning, UC Berkeley.
Fall 2013	Teaching assistant, Randomized algorithms for matrices and data, UC Berkeley.

Professional Services

Journal Reviewer: Journal of Machine Learning Research, Annals of Statistics, Mathematical Programming, ACM Transactions on the Web.
Conference Reviewer: ICML (2013 - 2017), NIPS (2013 - 2017), AISTAT (2015), IJCAI (2015-2017), ISIT (2015).

References

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