

# Quanquan Gu

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RESEARCH INTERESTS	Machine Learning, High-dimensional Statistical Inference, Optimization, Data Mining	
PROFESSIONAL EXPERIENCE	<b>Department of Computer Science, University of California, Los Angeles, CA, USA</b> 2018.7 - now <ul style="list-style-type: none"><li>• Tenure-track Assistant Professor</li></ul> <b>Department of Computer Science, University of Virginia, VA, USA</b> 2016 - 2018.6 <ul style="list-style-type: none"><li>• Tenure-track Assistant Professor</li></ul> <b>Department of Systems and Information Engineering, University of Virginia, VA, USA</b> 2015 - 2017 <ul style="list-style-type: none"><li>• Tenure-track Assistant Professor</li></ul> <b>Department of Operations Research and Financial Engineering, Princeton University, NJ, USA</b> 2014 - 2015 <ul style="list-style-type: none"><li>• Postdoctoral Research Associate in Statistics</li></ul>	
EDUCATION	<b>University of Illinois at Urbana-Champaign, IL, USA</b> 2010 - 2014 <ul style="list-style-type: none"><li>• Ph.D. in Computer Science</li></ul> <b>Tsinghua University, Beijing, China</b> 2007 - 2010 <ul style="list-style-type: none"><li>• Master of Science in Control Science and Engineering</li></ul> <b>Tsinghua University, Beijing, China</b> 2003 - 2007 <ul style="list-style-type: none"><li>• Bachelor of Engineering in Automation</li></ul>	
TEACHING EXPERIENCE	<b>Instructor, University of California, Los Angeles</b> <ul style="list-style-type: none"><li>• CS 269: Foundations of Deep Learning (Winter 2019)</li><li>• CS 260: Machine Learning Algorithms (Fall 2018)</li></ul> <b>Instructor, University of Virginia</b> <ul style="list-style-type: none"><li>• CS 6316/SYS6016: Machine Learning (Spring 2018)</li><li>• CS 6501/SYS6003: Optimization for Machine Learning (Fall 2017)</li><li>• SYS 6003: Optimization Models and Methods (Fall 2015, 2016)</li><li>• SYS 4582/6016: Machine Learning (Spring 2017)</li><li>• SYS 3060: Stochastic Decision Models (Spring 2016)</li></ul> <b>Teaching Assistant, Department of Computer Science, UIUC</b> <ul style="list-style-type: none"><li>• CS 512: Data Mining: Principles and Algorithms (Spring 2013)</li><li>• CS 412: An Introduction to Data Warehousing and Data Mining (Fall 2012)</li></ul>	
PUBLICATION	<ol style="list-style-type: none"><li>1. Xiao Zhang*, Yaodong Yu*, Lingxiao Wang* and Quanquan Gu, Learning One-hidden-layer ReLU Networks via Gradient Descent, In Proc. of the 22nd International Conference on Artificial Intelligence and Statistics (<b>AISTATS'19</b>), Naha, Okinawa, Japan, 2019.</li><li>2. Difan Zou, Pan Xu and Quanquan Gu, Sampling from Non-Log-Concave Distributions via Variance-Reduced Gradient Langevin Dynamics, In Proc. of the 22nd International</li></ol>	

- Conference on Artificial Intelligence and Statistics (**AISTATS'19**), Naha, Okinawa, Japan, 2019.
3. Dongruo Zhou, Pan Xu and **Quanquan Gu**, Stochastic Nested Variance Reduction for Nonconvex Optimization, In Proc. of Advances in Neural Information Processing Systems (**NeurIPS'18**) 31, Montral, Canada, 2018. Spotlight
  4. Pan Xu\*, Jinghui Chen\*, Difan Zou and **Quanquan Gu**, Global Convergence of Langevin Dynamics Based Algorithms for Nonconvex Optimization, In Proc. of Advances in Neural Information Processing Systems (**NeurIPS'18**) 31, Montral, Canada, 2018. Spotlight
  5. Yaodong Yu\*, Pan Xu\* and **Quanquan Gu**, Third-order Smoothness Helps: Even Faster Stochastic Optimization Algorithms for Finding Local Minima, In Proc. of Advances in Neural Information Processing Systems (**NeurIPS'18**) 31, Montral, Canada, 2018.
  6. Bargav Jayaraman, Lingxiao Wang, David Evans and **Quanquan Gu**, Distributed Learning without Distress: Privacy-Preserving Empirical Risk Minimization, In Proc. of Advances in Neural Information Processing Systems (**NeurIPS'18**) 31, Montral, Canada, 2018.
  7. Yang Wang, **Quanquan Gu** and Donald Brown, Differentially Private Hypothesis Transfer Learning, In Proc. of 28th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML/PKDD'18**), Dublin, Ireland, 2018.
  8. Wenjun Jiang, Qi Li, Lu Su, Chenglin Miao, **Quanquan Gu**, Wenyao Xu: Towards Personalized Learning in Mobile Sensing Systems. In Proc. of 38th IEEE International Conference on Distributed Computing Systems (**ICDCS'18**), Vienna, Austria, pp.321-333, 2018.
  9. Yang Yang, **Quanquan Gu**, Takayo Sasaki, Rachel Oneill, David Gilbert and Jian Ma, Continuous-trait probabilistic model for comparing multi-species functional genomic data, Cell Systems, in press, 2018.
  10. Difan Zou\*, Pan Xu\* and **Quanquan Gu**, Subsampled Stochastic Variance-Reduced Gradient Langevin Dynamics, in Proc. of the 34th International Conference on Uncertainty in Artificial Intelligence (**UAI'18**), Monterey, California, 2018.
  11. Xiao Zhang\*, Simon S. Du\* and **Quanquan Gu**, Fast and Sample Efficient Inductive Matrix Completion via Multi-Phase Procrustes Flow, in Proc. of the 35th International Conference on Machine Learning (**ICML'18**), Stockholm, Sweden, 2018.
  12. Xiao Zhang\*, Lingxiao Wang\*, Yaodong Yu and **Quanquan Gu**, A Primal-Dual Analysis of Global Optimality in Nonconvex Low-Rank Matrix Recovery, in Proc. of the 35th International Conference on Machine Learning (**ICML'18**), Stockholm, Sweden, 2018.
  13. Difan Zou\*, Pan Xu\* and **Quanquan Gu**, Stochastic Variance-Reduced Hamilton Monte Carlo Methods, in Proc. of the 35th International Conference on Machine Learning (**ICML'18**), Stockholm, Sweden, 2018.
  14. Jinghui Chen, Pan Xu, Lingxiao Wang, Jian Ma and **Quanquan Gu**, Covariate Adjusted Precision Matrix Estimation via Nonconvex Optimization, in Proc. of the 35th International Conference on Machine Learning (**ICML'18**), Stockholm, Sweden, 2018.
  15. Pan Xu\* and Tianhao Wang\* and **Quanquan Gu**, Continuous and Discrete-Time Accelerated Stochastic Mirror Descent for Strongly Convex Functions, in Proc. of the 35th International Conference on Machine Learning (**ICML'18**), Stockholm, Sweden, 2018.
  16. Dongruo Zhou, Pan Xu and **Quanquan Gu**, Stochastic Variance-Reduced Cubic Regularized Newton Method, in Proc. of the 35th International Conference on Machine Learning (**ICML'18**), Stockholm, Sweden, 2018.
  17. Pan Xu\* and Tianhao Wang\* and **Quanquan Gu**, Accelerated Stochastic Mirror Descent: From Continuous-time Dynamics to Discrete-time Algorithms, in Proc of the

- 21st International Conference on Artificial Intelligence and Statistics (**AISTATS'18**), Playa Blanca, Lanzarote, Canary Islands, 2018.
18. Xiao Zhang\* and Lingxiao Wang\* and **Quanquan Gu**, A Unified Framework for Nonconvex Low-Rank plus Sparse Matrix Recovery, in Proc of the 21st International Conference on Artificial Intelligence and Statistics (**AISTATS'18**), Playa Blanca, Lanzarote, Canary Islands, 2018.
  19. Yang Yang, **Quanquan Gu**, Takayo Sasaki, Rachel Oneill, David Gilbert and Jian Ma, Continuous-trait Probabilistic Model for Comparing Multi-species Functional Genomic Data, in Proc. of the 22nd Annual International Conference on Research in Computational Molecular Biology ( **RECOMB'18**), 2018.
  20. Pan Xu and Jian Ma and **Quanquan Gu**, Speeding Up Latent Variable Gaussian Graphical Model Estimation via Nonconvex Optimization, In Proc. of Advances in Neural Information Processing Systems (**NIPS'17**) 30, Long Beach, CA, USA, 2017.
  21. Jinghui Chen and **Quanquan Gu**, Fast Newton Hard Thresholding Pursuit for Sparsity Constrained Nonconvex Optimization, in Proc of the 23rd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD'17**), Halifax, Nova Scotia, Canada, 2017.
  22. Aditya Chaudhry, Pan Xu and **Quanquan Gu**, Uncertainty Assessment and False Discovery Rate Control in High-Dimensional Granger Causal Inference, in Proc. of the 34th International Conference on Machine Learning (**ICML'17**), Sydney, Australia, 2017.
  23. Rongda Zhu, Lingxiao Wang, Chengxiang Zhai, **Quanquan Gu**, Variance-Reduced Stochastic Gradient High-Dimensional Expectation Maximization Algorithm, in Proc. of the 34th International Conference on Machine Learning (**ICML'17**), Sydney, Australia, 2017.
  24. Lingxiao Wang\*, Xiao Zhang\*, **Quanquan Gu**, A Unified Variance-Reduction Based Framework for Nonconvex Low-Rank Matrix Recovery, in Proc. of the 34th International Conference on Machine Learning (**ICML'17**), Sydney, Australia, 2017. (\*: equal contribution)
  25. Lingxiao Wang, **Quanquan Gu**, Robust Gaussian Graphical Model Estimation with Arbitrary Corruption, in Proc. of the 34th International Conference on Machine Learning (**ICML'17**), Sydney, Australia, 2017.
  26. Lu Tian and **Quanquan Gu**, Communication-efficient Distributed Sparse Linear Discriminant Analysis, in Proc of the 20th International Conference on Artificial Intelligence and Statistics (**AISTATS'17**), Fort Lauderdale, Florida, USA, 2017.
  27. Lingxiao Wang\* and Xiao Zhang\* and **Quanquan Gu**, A Unified Computational and Statistical Framework for Nonconvex Low-Rank Matrix Estimation, in Proc of the 20th International Conference on Artificial Intelligence and Statistics (**AISTATS'17**), Fort Lauderdale, Florida, USA, 2017. (\*: equal contribution)
  28. Pan Xu and Tingting Zhang and **Quanquan Gu**, Efficient Algorithm for Sparse Tensor-variate Gaussian Graphical Models via Gradient Descent, in Proc of the 20th International Conference on Artificial Intelligence and Statistics (**AISTATS'17**), Fort Lauderdale, Florida, USA, 2017.
  29. Dezhi Hong and **Quanquan Gu** and Kamin Whitehouse, High-dimensional Time Series Clustering via Cross-Predictability, in Proc of the 20th International Conference on Artificial Intelligence and Statistics (**AISTATS'17**), Fort Lauderdale, Florida, USA, pp.642-651, 2017.
  30. Pan Xu and **Quanquan Gu**, Semiparametric Differential Graph Models, In Proc. of Advances in Neural Information Processing Systems (**NIPS'16**) 29, Barcelona, Spain, pp.1064-1072, 2016.
  31. Lu Tian\*, Bargav Jayaraman\*, **Quanquan Gu**, David Evans, Aggregating Private Sparse Learning Models Using Multi-Party Computation, NIPS Workshop on Private Multi-Party Machine Learning, Barcelona, Spain, 2016. (\*: equal contribution)
  32. Dechao Tian, **Quanquan Gu**, and Jian Ma. Identifying gene regulatory network

- rewiring using latent differential graphical models. *Nucleic Acids Research*, 2016.
33. Jinghui Chen and **Quanquan Gu**, Accelerated Stochastic Block Coordinate Gradient Descent for Sparsity Constrained Nonconvex Optimization, in Proc of the 32th International Conference on Uncertainty in Artificial Intelligence (**UAI'16**), New York/New Jersey, USA, 2016.
  34. Lu Tian, Pan Xu and **Quanquan Gu**, Forward Backward Greedy Algorithms for Multi-Task Learning with Faster Rates, in Proc of the 32th International Conference on Uncertainty in Artificial Intelligence (**UAI'16**), New York/New Jersey, USA, 2016.
  35. Huan Gui, Jiawei Han and **Quanquan Gu**, Towards Faster Rates and Oracle Property for Low-Rank Matrix Estimation, in Proc. of the 33th International Conference on Machine Learning (**ICML'16**), New York, USA, pp.2300-2309, 2016.
  36. Zhaoran Wang, **Quanquan Gu**, and Han Liu, Statistical Limits of Convex Relaxations, in Proc. of the 33th International Conference on Machine Learning (**ICML'16**), New York, USA, pp.1368-1377, 2016.
  37. Qingyun Wu, Huazheng Wang, **Quanquan Gu** and Hongning Wang. Contextual Bandits in A Collaborative Environment. The 39th International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR'16**), Pisa, Tuscany, Italy, pp.529-538, 2016.
  38. **Quanquan Gu** and Zhaoran Wang and Han Liu, Low-Rank and Sparse Structure Pursuit via Alternating Minimization, in Proc of the 19th International Conference on Artificial Intelligence and Statistics (**AISTATS'16**), Cadiz, Spain, pp.600-609, 2016.
  39. Lingxiao Wang, Xiang Ren and **Quanquan Gu**, Precision Matrix Estimation in High Dimensional Gaussian Graphical Models with Faster Rates, in Proc of the 19th International Conference on Artificial Intelligence and Statistics (**AISTATS'16**), Cadiz, Spain, pp.177-185, 2016.
  40. Renkun Ni and **Quanquan Gu**, Optimal Statistical and Computational Rates for One Bit Matrix Completion, in Proc of the 19th International Conference on Artificial Intelligence and Statistics (**AISTATS'16**), Cadiz, Spain, pp.426-434, 2016.
  41. Zhaoran Wang and **Quanquan Gu** and Han Liu, Sharp Computational-Statistical Phase Transitions via Oracle Computational Model, arXiv:1512.08861, 2015.
  42. Haiping Wang, **Quanquan Gu**, Jia Wei, Zhiwei Cao and Qi Liu, Mining drug-disease relationships as a complement to medical genetics-based drug repositioning: Where a recommendation system meets genome-wide association studies, *Clinical Pharmacology & Therapeutics*, pp.451-454, 2015.
  43. Zhaoran Wang, **Quanquan Gu**, Yang Ning, and Han Liu, High Dimensional Expectation-Maximization Algorithm: Statistical Optimization and Asymptotic Normality, In Proc. of Advances in Neural Information Processing Systems (**NIPS'15**) 28, Montreal, Quebec, Canada, pp. 2521-2529, 2015.
  44. Chang Wan, Ben Kao, Xiao Yu, **Quanquan Gu**, David W.L Cheung, Jiawei Han, Classification with Active Learning and Meta-paths in Heterogeneous Information Networks, In Proc of the 24th ACM Conference on Information and Knowledge Management (**CIKM'15**), Melbourne, VIC, Australia, pp.443-452, 2015.
  45. Shi Zhi and Jiawei Han and **Quanquan Gu**, Robust Classification of Information Networks by Consistent Graph Learning, In Proc. of 25th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML/PKDD'15**), Porto, Portugal, pp.752-767, 2015.
  46. Rongda Zhu and **Quanquan Gu**, Towards a Lower Sample Complexity for Robust One-bit Compressed Sensing, In Proc. of the 32nd International Conference on Machine Learning (**ICML'15**), Lille, France, pp. 739-747, 2015.
  47. Lu An Tang, Xiao Yu, **Quanquan Gu**, Jiawei Han, Guofei Jiang, Alice Leung and Thomas F. La Porta: A Framework of Mining Trajectories from Untrustworthy Data in Cyber-Physical System. *ACM Transactions on Knowledge Discovery from Data* 9(3): 16:1-16:35 (2015)

48. **Quanquan Gu**, Yuan Cao, Yang Ning and Han Liu, Local and Global Inference for High Dimensional Gaussian Copula Graphical Models, arXiv:1502.02347., 2015.
49. Jialu Liu, Chi Wang, Jing Gao, **Quanquan Gu**, Charu Aggarwal, Lance Kaplan and Jiawei Han, GIN: A Clustering Model for Capturing Dual Heterogeneity in Networked Data, in Proc. of SIAM Int. Conf. on Data Mining (**SDM'15**), Vancouver, Canada, pp.388-396, 2015.
50. **Quanquan Gu**, Zhaoran Wang and Han Liu, Sparse PCA with Oracle Property, in Proc. of Advances in Neural Information Processing Systems (**NIPS'14**) 27, Montreal, Quebec, Canada, pp.1529-1537, 2014.
51. **Quanquan Gu\***, Huan Gui\* and Jiawei Han, Robust Tensor Decomposition with Gross Corruption, in Proc. of Advances in Neural Information Processing Systems (**NIPS'14**) 27, Montreal, Quebec, Canada, pp.1422-1430, 2014. (\*: equal contribution)
52. **Quanquan Gu**, Tong Zhang and Jiawei Han, Batch-Mode Active Learning via Error Bound Minimization, in Proc. of the 30th Conference on Uncertainty in Artificial Intelligence (**UAI'14**), Quebec City, Quebec, Canada, pp.300-309, 2014.
53. Yiyi Liu, **Quanquan Gu**, Jack P Hou, Jiawei Han and Jian Ma, A network-assisted co-clustering algorithm to discover cancer subtypes based on gene expression, BMC Bioinformatics, 2014.
54. Xiang Ren, Jialu Liu, Xiao Yu, Urvashi Khandelwal, **Quanquan Gu**, Lidan Wang, Jiawei Han: ClusCite: effective citation recommendation by information network-based clustering. in Proc of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD'14**), New York City, USA, pp. 821-830, 2014.
55. Xiao Yu, Xiang Ren, Yizhou Sun, **Quanquan Gu**, Bradley Sturt, Urvashi Khandelwal, Brandon Norick and Jiawei Han: Personalized entity recommendation: a heterogeneous information network approach. in Proc. of the 7th ACM International Conference on Web Search and Data Mining (**WSDM'14**), pp.283-292, 2014.
56. **Quanquan Gu**, Charu Aggarwal, Jialu Liu and Jiawei Han, Selective Sampling on Graphs for Classification, in Proc of the 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD'13**), Chicago, USA, pp.131-139, 2013.
57. Lu-An Tang, Xiao Yu, **Quanquan Gu**, Jiawei Han, Alice Leung and Thomas F. La Porta, Mining lines in the sand: on trajectory discovery from untrustworthy data in cyber-physical system, in Proc of the 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD'13**), Chicago, USA, pp.410-418, 2013.
58. **Quanquan Gu**, Charu Aggarwal and Jiawei Han, Unsupervised Link Selection in Networks, in Proc of the 16th International Conference on Artificial Intelligence and Statistics (**AISTATS'13**), Scottsdale, AZ, 2013
59. **Quanquan Gu** and Jiawei Han, Clustered Support Vector Machine, in Proc of the 16th International Conference on Artificial Intelligence and Statistics (**AISTATS'13**), Scottsdale, AZ, USA, 2013.
60. Peng Wei, **Quanquan Gu** and Dengfeng Sun, Wireless sensor network data collection by connected cooperative UAVs, in Proc of the 2013 American Control Conference (**ACC'13**), Washington, DC, USA, pp.5911-5916, 2013.
61. Xiao Yu, Xiang Ren, Yizhou Sun, Bradley Sturt, Urvashi Khandelwal, **Quanquan Gu**, Brandon Norick and Jiawei Han, Recommendation in heterogeneous information networks with implicit user feedback. in Proc of the 7th ACM Conference on Recommender Systems (**RecSys'13**), Hong Kong, China, pp.347-350, 2013.
62. Lu-An Tang, Xiao Yu, Sangkyum Kim, **Quanquan Gu**, Jiawei Han, Alice Leung and Thomas La Porta, Trustworthiness Analysis of Sensor Data in Cyber-Physical Systems, Special Issue on Data Warehousing and Knowledge Discovery from Sensors and Streams, Journal of Computer and System Sciences, pp.383-401, 2013.

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64. **Quanquan Gu**, Tong Zhang, Chris Ding and Jiawei Han, Selective Labeling via Error Bound Minimization, in Proc of Advances in Neural Information Processing Systems (**NIPS'12**) 25, Lake Tahoe, Nevada, United States, pp.332-340, 2012.
65. Xiao Yu, **Quanquan Gu**, Mianwei Zhou and Jiawei Han, Citation Prediction in Heterogeneous Bibliographic Networks, in Proc of the 12th SIAM International Conference on Data Mining (**SDM'12**), Anaheim, CA, USA, pp.1119-1130, 2012.
66. Lu-An Tang, **Quanquan Gu**, Xiao Yu, Jiawei Han, Thomas La Porta, Alice Leung, Tarek F. Abdelzaher and Lance M. Kaplan, IntruMine: Mining Intruders in Untrustworthy Data of Cyber-physical Systems, in Proc of the 12th SIAM International Conference on Data Mining (**SDM'12**), Anaheim, CA, USA, pp.600-611, 2012.
67. Zhijun Yin, Liangliang Cao, **Quanquan Gu**, and Jiawei Han, A Probabilistic Model of Community-Based Latent Topic Analysis, ACM Transactions on Intelligent Systems and Technology (**TIST**), 2012.
68. **Quanquan Gu**, Marina Danilevsky, Zhenhui Li and Jiawei Han, Locality Preserving Feature Learning, in Proc of the 15th International Conference on Artificial Intelligence and Statistics (**AISTATS'12**), La Palma, Canary Islands, pp.477-485, 2012.
69. **Quanquan Gu** and Jiawei Han, Towards Feature Selection in Network, in Proc of the 20th ACM Conference on Information and Knowledge Management (**CIKM'11**), Glasgow, Scotland, UK, pp.1175-1184, 2011.
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71. **Quanquan Gu**, Zhenhui Li and Jiawei Han, Linear Discriminant Dimensionality Reduction, in Proc of the 21st European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML/PKDD'11**), Athens, Greece, pp.549-564, 2011.
72. **Quanquan Gu**, Zhenhui Li and Jiawei Han, Learning a Kernel for Multi-Task Clustering, in Proc of the 25th AAAI Conference on Artificial Intelligence (**AAAI'11**), San Francisco, California, USA, 2011.
73. **Quanquan Gu**, Zhenhui Li and Jiawei Han, Generalized Fisher Score for Feature Selection, in Proc of the 27th Conference on Uncertainty in Artificial Intelligence (**UAI'11**), Barcelona, Spain, 2011.
74. **Quanquan Gu**, Zhenhui Li and Jiawei Han, Joint Feature Selection and Subspace Learning, in Proc of the 22nd International Joint Conference on Artificial Intelligence (**IJCAI'11**), Barcelona, Spain, pp.1294-1299, 2011.
75. **Quanquan Gu**, Chris Ding and Jiawei Han, On Trivial Solution and Scale Transfer Problems in Graph Regularized NMF, in Proc of the 22nd International Joint Conference on Artificial Intelligence (**IJCAI'11**), Barcelona, Spain, pp.1288-1293, 2011.
76. Han Hu, **Quanquan Gu** and Jie Zhou, HTF: a novel feature for general crack detection. in Proc. of the 17th IEEE International Conference on Image Processing (**ICIP'10**), Hong Kong, China, pp.1633-1636, 2010.
77. **Quanquan Gu**, Jie Zhou and Chris Ding, Collaborative Filtering: Weighted Nonnegative Matrix Factorization Incorporating User and Item Graphs, in Proc of the 10th SIAM International Conference on Data Mining (**SDM'10**), Columbus, Ohio, pp.199-210, 2010.
78. **Quanquan Gu** and Jie Zhou, Co-clustering on Manifolds, in Proc of the 15th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD'09**), Paris, France, pp.359-368, 2009.
79. **Quanquan Gu** and Jie Zhou, Learning the Shared Subspace for Multi-Task Clustering and Transductive Transfer Classification, in Proc of the 9th IEEE International

- Conference on Data Mining (**ICDM'09**), Miami, Florida, USA, pp.159-168, 2009.
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  83. **Quanquan Gu** and Jie Zhou, Transductive Classification via Dual Regularization, in Proc of the 19th European Conference on Machine Learning (**ECML/PKDD'09**), Bled, Slovenia, pp.439-454, 2009.
  84. **Quanquan Gu** and Jie Zhou, Multiple Kernel Maximum Margin Criterion, in Proc. of the 16th IEEE International Conference on Image Processing (**ICIP'09**), Cairo, Egypt, pp.2049-2052, 2009.
  85. **Quanquan Gu** and Jie Zhou, Two Dimensional Nonnegative Matrix Factorization, in Proc. of the 16th IEEE International Conference on Image Processing (**ICIP'09**), Cairo, Egypt, pp.2069-2072, 2009.
  86. **Quanquan Gu** and Jie Zhou, Neighborhood Preserving Nonnegative Matrix Factorization, in Proc. of the 20th British Machine Vision Conference (**BMVC'09**), London, 2009.
  87. Han Hu, **Quanquan Gu**, Lei Deng and Jie Zhou, Multiframe Motion Segmentation via Penalized MAP Estimation and Linear Programming, in Proc. of the 20th British Machine Vision Conference (**BMVC'09**), London, 2009.
  88. **Quanquan Gu** and Jie Zhou, Regular Simplex Criterion: A Novel Feature Extraction Criterion, in Proc. of the 34th IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP'09**), Taipei, Taiwan, pp.1581-1584, 2009.
  89. **Quanquan Gu** and Jie Zhou, Two Dimensional Maximum Margin Criterion, in Proc. of the 34th IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP'09**), Taipei, Taiwan, pp.1621-1624, 2009.
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  91. **Quanquan Gu** and Jie Zhou, Belief propagation on Riemannian manifold for stereo matching, in Proc. of the 15th IEEE International Conference on Image Processing (**ICIP'08**), San Diego, California, USA, pp.1788-1791, 2008.
  92. **Quanquan Gu** and Jie Zhou, A novel similarity measure under Riemannian metric for stereo matching, in Proc. of the 33rd IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP'08**), Las Vegas, Nevada, USA, pp.1073-1076, 2008.
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TALKS AND  
PRESENTATIONS

1. "New Variance Reduction Algorithms for Nonconvex Finite-Sum Optimization", Machine Learning Seminar, University of Southern California, Nov 2018.
2. "Closing the Generalization Gap of Adaptive Gradient Methods in Training Deep Neural Networks: Algorithms and Theory", AI Seminar, USC Information Science Institute, Nov 2018.
3. "The Power and Promise of Nonconvex Optimization for Machine Learning", School of Electrical and Computer Engineering, Cornell University, March 2018.

4. “The Power and Promise of Nonconvex Optimization for Machine Learning”, School of Computational Science and Engineering, Georgia Institute of Technology, March 2018.
5. “Two Facets of Stochastic Optimization: Continuous-time Dynamics and Discrete-time Algorithms”, Machine Learning Department, Carnegie Mellon University, Sep 2017.
6. “Blessing of Nonconvexity: Nonconvex Statistical Learning Methods”, University of Virginia, Quantitative Psychology Lecture Series, Feb 2017.
7. “Blessing of Nonconvexity: Nonconvex Statistical Learning Methods”, Virginia Tech (NVC), CS Seminar, Oct 2016.
8. “Blessing of Nonconvexity: Nonconvex Statistical Learning Methods”, University of Virginia, SIE Colloquium, Sep 2016.
9. “Blessing of Nonconvexity: Nonconvex Statistical Learning Methods”, University of Virginia, CS Seminar, Sep 2016.
10. “Distributed Inference for High Dimensional Semi-parametric Elliptical Graphical Models”, ENAR Spring Meeting, Austin, Texas, March 2016.
11. “On Longitudinal Gaussian Graphical Models: Estimation and Asymptotic Inference”, ENAR Spring Meeting, Austin, Texas, March 2016
12. “Asymptotic Inference for High Dimensional Gaussian Copula Graphical Models”, University of Virginia, Statistics Colloquium, Feb 2016.
13. “Local and Global Inference for High-Dimensional Gaussian Copula Graphical Models”, Joint Statistical Meetings, Seattle, Aug 2015.
14. “Big Network Analytics: Online and Active Learning Approaches” Michigan State University, CS Colloquium, March 2014.
15. “Big Network Analytics: Online and Active Learning Approaches”, University of Oregon, CIS Colloquium, March 2014.
16. “Big Network Analytics: Online and Active Learning Approaches”, University of Utah, CS Colloquium, March 2014.
17. “Big Network Analytics: Online and Active Learning Approaches”, University of Virginia, SIE Colloquium, Feb 2014.
18. “Big Network Analytics: Online and Active Learning Approaches”, University of Illinois at Urbana-Champaign, AIIS Seminar, Feb 2014.
19. “Big Network Analytics: Online and Active Learning Approaches”, University of Illinois at Urbana-Champaign, DAIS Seminar, Feb 2014.
20. “Selective Labeling via Error Bound Minimization”, University of Illinois at Urbana-Champaign, DAIS Seminar, Oct 2012.

HONORS AND  
AWARDS

- Simons Berkeley Research Fellowship 2019
- Salesforce Deep Learning Research Award 2018
- Adobe Data Science Research Award 2018
- NSF CAREER Award 2017
- UVa SEAS Research Innovation Award 2017
- Yahoo! Academic Career Enhancement Award 2015
- IBM PhD Fellowship 2013-2014
- Yahoo!-DAIS Research Award Silver Medal, Data and Information Systems Lab, CS, UIUC 2013, 2014
- Yahoo!-DAIS Research Award Gold Medal, Data and Information Systems Lab, CS, UIUC 2011
- UIUC Computer Science Department Fellowship 2010
- Best Master Thesis Award in Tsinghua University 2010
- Tsinghua Mitsubishi Heavy Industries Scholarship 2008
- Tsinghua Second Class Scholarship 2008, 2009
- Tsinghua First Class Scholarship 2005, 2006



- China Instrument and Control Society Second Class Scholarship 2004
- Tsinghua Second Class Scholarship 2004

#### RESEARCH GRANTS

- Lead PI: National Science Foundation (NSF) (Award #1741342) “BIGDATA: F: Collaborative Research: Taming Big Networks via Embedding” with Co-PI Jiawei Han, Total award amount: \$900,000.00, Duration: 01/01/2018-12/31/2021, My share: 55%.
- PI: National Science Foundation (NSF) (Award #1717950) “SaTC: CORE: Small: Multi-Party High-dimensional Machine Learning with Privacy” with Co-PI David Evans, Total award amount: \$498,624.00, Duration: 08/01/2017-07/31/2020, My share: 50%.
- Lead PI: National Science Foundation (NSF) (Award #1717206 ) “III: Small: Collaborative Research: High-Dimensional Machine Learning Methods for Personalized Cancer Genomics” with Co-PI Jian Ma, Total award amount: \$500,000, Duration: 08/01/2017-07/31/2020, My share: 60%.
- Single PI: National Science Foundation (NSF) (Award #1652539) “CAREER: Scaling Up Knowledge Discovery in High-Dimensional Data via Nonconvex Statistical Optimization”, Total award amount: \$515,835.00, Duration: 2017/8/1-2022/7/31.
- PI: National Science Foundation (NSF) (Award #1618948) “III: Small: Collaborative Learning with Incomplete and Noisy Knowledge” with Co-PI Hongning Wang, Total award amount: \$500,000, Duration: 2016/8/1-2019/7/31, My share: 50%.
- PI: UVa SEAS Cyber-security Initiative Award “Multi-party Machine Learning with Privacy” with David Evans (Co-PI). Total award amount: \$75,000 (2016-2017). My share: 50%.
- Co-PI: UVa SEAS Research Innovation Award “Machine Learning in Adversarial Contexts” with David Evans (PI), Homa Alemzadeh, Mohammad Mahmoody, Yanjun Qi. (2017-2018)
- Co-PI: UVa SEAS Research Innovation Award “Robust Data Fusion in Dynamic Environments” with Farzad Hassanzadeh (PI). (2017-2018)
- Co-PI: UVa Brain Institute Transformative, Collaborative Neuroscience Pilot Grant “SysNimDB: a public resource for characterizing neuroimmunological cell types and disease states in heterogeneous transcriptomic datasets” with Chris Overall (PI), Yanjun Qi and Abigail Flower. Total award amount: \$75,000 (2017-2018).

#### PROFESSIONAL SERVICES

- Editorial Board
  - Information Processing and Management
  - Pattern Recognition and Artificial Intelligence
  - PLOS ONE
- Journal Reviewer for
  - IEEE Transaction on Pattern Analysis and Machine Intelligence
  - IEEE Transaction on Knowledge and Data Engineering
  - IEEE Transactions on Neural Networks and Learning Systems
  - IEEE Transaction on Systems, Man and Cybernetics - Part B
  - IEEE Transaction on Cybernetics
  - ACM Transaction on Knowledge Discovery from Data
  - Journal of Machine Learning Research
  - Machine Learning
  - Statistica Sinica
  - Data Mining and Knowledge Discovery
  - Information Processing and Management
  - Neurocomputing

- Computer Vision and Image Understanding
- Artificial Intelligence
- Knowledge and Information Systems
- PLOS ONE
- Journal of Mathematical Imaging and Vision
- Multimedia Systems
- Computational Intelligence
- PC Chair/PC Vice-Chair for
  - IEEE International Conference on Big Data (ICBD) 2019
- Area Chair/Senior PC Member for
  - International Conference on Machine Learning (ICML) 2019
  - Annual Conference on Neural Information Processing Systems (NeurIPS) 2019
- PC Member/Reviewer for
  - International Conference on Machine Learning (ICML) 2015, 2016, 2017, 2018
  - Annual Conference on Neural Information Processing Systems (NIPS) 2014, 2015, 2016, 2017, 2018
  - International Conference on Artificial Intelligence and Statistics (AISTATS) 2015, 2016, 2017, 2018, 2019
  - International Conference on Uncertainty in Artificial Intelligence (UAI) 2016, 2017, 2018
  - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD) 2015, 2016, 2017, 2018
  - World Wide Web (WWW) Conference, 2017, 2018
  - Very Large Data Bases (VLDB) Conferences 2017, 2018
  - SIAM Conference on Data Mining (SDM), 2017, 2018
  - International Joint Conferences on Artificial Intelligence (IJCAI) 2013, 2015, 2016, 2017
  - AAAI Conference on Artificial Intelligence (AAAI), 2018, 2019
  - International Conference on Learning Representations (ICLR), 2018, 2019
  - Asian Conference on Machine Learning (ACML) 2012
  - Natural Language Processing and Chinese Computing, 2015
- Section Chair for
  - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD) 2016
  - ENAR Spring Meeting 2016
- Grant Proposal Review:
  - NSF III, Panelist, 2017
  - NSF RI, Panelist, 2017
  - NSF III, Panelist, 2018

## REFERENCES

Available upon request.