Lijun Zhang Resume

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Research **Interests** Machine Learning, Optimization

Academic Appointments

Professor Dec., 2020 { present

Dec., 2019 { Dec., 2020 Research Professor

School of Arti cial Intelligence, Nanjing University

Associate Professor

Apr., 2014 { Dec., 2019

Department of Computer Science and Technology, Nanjing University

Postdoctoral Researcher

Aug., 2012 { Apr., 2014

Department of Computer Science and Engineering, Michigan State University

• Advisor: Prof. Rong Jin

Education

Zhejiang University, Hangzhou, China

Ph.D., Computer Science and Technology, Sep., 2007 { Jun., 2012

• Advisor: Prof. Chun Chen

B.E., Software Engineering, Sep., 2003 { Jun., 2007

Michigan State University, East Lansing, USA

Visiting Student, Department of Computer Science and Engineering, Jun., 2011 { Dec., 2011

• Advisor: Prof. Rong Jin

Honors and **Awards**

- 2021, NSFC Excellent Young Scientists Fund
- Microsoft Research Asia Collaborative Research 2019 Grant Award 2019,
- DAMO Academy Young Fellow 2018.
- Young Elite Scientist Sponsorship Program by CAST 2017,
- 2016, Young Talent Development Program of the CCF
- 2012, AAAI-12 Outstanding Paper Award
- 2011, Chu Kochen Award (Highest Honour of Zhejiang University)
- ACM Multimedia 2010 Best Paper Award Runner-up 2010.
- Scholarship Award for Excellent Doctoral Student Granted by Ministry 2010. of Education
- 2007, 2012, Excellent Graduate of Zhejiang Province
- 2007, 2012, Excellent Graduate of Zhejiang University

Professional Service

Editorial Boards

- Action Editor, Transactions on Machine Learning Research, Since Dec., 2021
- Action Editor, Machine Learning, Since Jun., 2021
- Associate Editor, Neurocomputing, Since Mar., 2021

- Topic Editor, Remote Sensing, Feb., 2021 { Aug., 2021
- Editorial Board Reviewer, Journal of Machine Learning Research, Since Jun., 2020

Area Chair

- The 41st International Conference on Machine Learning (ICML 2024)
- The 40th International Conference on Machine Learning (ICML 2023)
- The 39th International Conference on Machine Learning (ICML 2022)
- The 12th International Conference on Learning Representations (ICLR 2024)
- The 37th Annual Conference on Neural Information Processing Systems (NeurIPS 2023)
- The 36th Annual Conference on Neural Information Processing Systems (NeurIPS 2022)
- The 35th Annual Conference on Neural Information Processing Systems (NeurIPS 2021)
- The 30th International Joint Conference on Articial Intelligence (IJCAI 2021)
- The 26th International Joint Conference on Articial Intelligence (IJCAI 2017)
- The 3rd Chinese Conference on Pattern Recognition and Computer Vision (PRCV 2020)
- The CAAI International Conference on Arti cial Intelligence(CICAI 2023)
- The CAAI International Conference on Articial Intelligence (CICAI 2022)
- The CAAI International Conference on Arti cial Intelligence (CICAI 2021)

Senior Program Committee Member

- The 33rd International Joint Conference on Articial Intelligence (IJCAI 2024)
- The 31st International Joint Conference on Arti cial Intelligence (IJCAI 2022)
- The 34th AAAI Conference on Arti cial Intelligence (AAAI 2020)
- The 33rd AAAI Conference on Arti cial Intelligence (AAAI 2019)
- The 29th International Conference on Articial Intelligence (IJCAI 2020)
- The 28th International Conference on Arti cial Intelligence (IJCAI 2019)
- The 27th International Conference on Arti cial Intelligence (IJCAI 2018)

Program Committee Member

- The 38th International Conference on Machine Learning (ICML 2021)
- The 37th International Conference on Machine Learning (ICML 2020)
- The 36th International Conference on Machine Learning (ICML 2019)
- The 35th International Conference on Machine Learning (ICML 2018)
- The 33rd International Conference on Machine Learning (ICML 2016)
- The 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2020)
- The 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2019)
- The 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2018)
- The 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2016)
- The 21st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2015)
- The 36th AAAI Conference on Arti cial Intelligence (AAAI 2022)
- The 35th AAAI Conference on Arti cial Intelligence (AAAI 2021)
- The 32nd AAAI Conference on Arti cial Intelligence (AAAI 2018)
- The 31st AAAI Conference on Arti cial Intelligence (AAAI 2017)
- The 29th AAAI Conference on Arti cial Intelligence (AAAI 2015)
- The 26th AAAI Conference on Arti cial Intelligence (AAAI 2012)
- The 25th International Joint Conference on Articial Intelligence (IJCAI 2016)

- The 24th International Joint Conference on Arti cial Intelligence (IJCAI 2015)
- The 23rd International Joint Conference on Articial Intelligence (IJCAI 2013)
- The 23rd ACM International Conference on Multimedia (MM 2015)
- The 22nd ACM International Conference on Multimedia (MM 2014)

Reviewer

- The 34th Annual Conference on Neural Information Processing Systems (NeurIPS 2020)
- The 33rd Annual Conference on Neural Information Processing Systems (NeurIPS 2019)
- The 32nd Annual Conference on Neural Information Processing Systems (NeurIPS 2018)
- The 31st Annual Conference on Neural Information Processing Systems (NIPS 2017)
- The 30th Annual Conference on Neural Information Processing Systems (NIPS 2016)
- The 29th Annual Conference on Neural Information Processing Systems (NIPS 2015)
- The 28th Annual Conference on Neural Information Processing Systems (NIPS 2014)
- The 27th Annual Conference on Neural Information Processing Systems (NIPS 2013)
- The 21st International Conference on Articial Intelligence and Statistics (AISTATS 2018)
- The 20th International Conference on Articial Intelligence and Statistics (AISTATS 2017)
- The 19th International Conference on Articial Intelligence and Statistics (AISTATS 2016)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Multimedia (TMM)
- Transactions on Intelligent Systems and Technology (TIST)
- IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics (TSMCB)
- IEEE Transactions on Systems, Man, and Cybernetics, Part C: Applications and Reviews (TSMCC)
- IEEE Transactions on Cybernetics
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Big Data (TBD)
- ACM Transactions on Knowledge Discovery from Data (TKDD)
- Machine Learning, Pattern Recognition
- Information Sciences, Neural Networks
- Neurocomputing, Pattern Recognition Letters
- Signal Processing, Knowledge-Based Systems
- Journal of Scienti c Computing (JOMP)
- Journal of Selected Topics in Signal Processing (JSTSP)
- Journal of Computer Science and Technology (JCST)
- SCIENCE CHINA Information Sciences

Program Co-Chair

- The 12th Vision and Learning Seminar (VALSE 2022)
- The 19th China Symposium on Machine Learning and Applications (MLA 2021)

Workshop Co-Chair

- The 11th Vision and Learning Seminar (VALSE 2021)
- The 9th Vision and Learning Seminar (VALSE 2019)

APR Co-Chair

• The 10th Vision and Learning Seminar (VALSE 2020)

Publications Co-Chair

• The 9th China Conference on Data Mining (CCDM 2022)

Organizing Committee Member

• The 16th China Symposium on Machine Learning and Applications (MLA 2018)

Book

1. Zhi-Hua Zhou, Wei Wang, Wei Gao, and **Lijun Zhang**. Introduction to the Theory of Machine Learning (In Chinese). China Machine Press, 2020.

Conference Publications

- Lijun Zhang, Peng Zhao, Zhen-Hua Zhuang, Tianbao Yang, and Zhi-Hua Zhou. Stochastic Approximation Approaches to Group Distributionally Robust Optimization. In *Advances in Neural Information Processing Systems 36* (NeurIPS), to appear, 2023.
- 2. Bo Xue, Yimu Wang, Yuanyu Wan, Jinfeng Yi, and Lijun Zhang. E cient Algorithms for Generalized Linear Bandits with Heavy-tailed Rewards. In *Advances in Neural Information Processing Systems 36* (NeurIPS), to appear, 2023.
- 3. Zhenyao Zhang, and **Lijun Zhang**. NeCa: Network Calibration for Class Incremental Learning. In *Pattern Recognition* (ACPR), pp. 385{399, 2023.
- 4. Yuanyu Wan, **Lijun Zhang**, and Mingli Song. Improved Dynamic Regret for Online Frank-Wolfe. In *Proceedings of the 36th Annual Conference on Learning Theory* (**COLT**), pp. 3304{3327, 2023.
- 5. Yutian Gou, Jinfeng Yi, and **Lijun Zhang**. Stochastic Graphical Bandits with Heavy-Tailed Rewards. In *Proceedings of the 39th Conference on Uncertainty in Arti cial Intelligence* (**UAI**), pp. 734{744, 2023.
- Sijia Chen, Wei-Wei Tu, Peng Zhao, and Lijun Zhang. Optimistic Online Mirror Descent for Bridging Stochastic and Adversarial Online Convex Optimization. In *Proceedings of the 40th International Conference on Machine Learning* (ICML), pp. 5002{5035, 2023.
- 7. Wei Jiang, Jiayu Qin, Lingyu Wu, Changyou Chen, Tianbao Yang, and **Lijun Zhang**. Learning Unnormalized Statistical Models via Compositional Optimization. In *Proceedings of the 40th International Conference on Machine Learning* (**ICML**), pp. 15105{ 15124, 2023.
- 8. Zi-Hao Qiu, Quanqi Hu, Zhuoning Yuan, Denny Zhou, **Lijun Zhang**, and Tianbao Yang. Not All Semantics are Created Equal: Contrastive Self-supervised Learning with Automatic Temperature Individualization. In *Proceedings of the 40th International Conference on Machine Learning* (**ICML**), pp. 28389{28421, 2023.
- Quanqi Hu, Zi-Hao Qiu, Zhishuai Guo, Lijun Zhang, and Tianbao Yang. Blockwise Stochastic Variance-Reduced Methods with Parallel Speedup for Multi-Block Bilevel Optimization. In *Proceedings of the 40th International Conference on Machine Learning* (ICML), pp. 13550{13583, 2023.
- 10. Yibo Wang, Yuanyu Wan, Shimao Zhang, and Lijun Zhang. Distributed Projection-free Online Learning for Smooth and Convex Losses. In *Proceedings of the 37th AAAI Conference on Arti cial Intelligence* (AAAI), pp. 10226{10234, 2023.
- 11. **Lijun Zhang**, Wei Jiang, Jinfeng Yi, and Tianbao Yang. Smoothed Online Convex Optimization Based on Discounted-Normal-Predictor. In *Advances in Neural Information Processing Systems 35* (NeurIPS), pp. 4928(4942, 2022.

- 12. Yuanyu Wan, Wei-Wei Tu, and **Lijun Zhang**. Online Frank-Wolfe with Arbitrary Delays. In *Advances in Neural Information Processing Systems 35* (**NeurIPS**), pp. 19703{19715, 2022.
- 13. Wei Jiang, Gang Li, Yibo Wang, **Lijun Zhang**, and Tianbao Yang. Multi-block-Single-probe Variance Reduced Estimator for Coupled Compositional Optimization. In *Advances in Neural Information Processing Systems 35* (NeurIPS), pp. 32499{ 32511, 2022.
- 14. Peng Zhao, Yan-Feng Xie, **Lijun Zhang**, and Zhi-Hua Zhou. E cient Methods for Non-stationary Online Learning. In *Advances in Neural Information Processing Systems 35* (**NeurIPS**), pp. 11573{11585, 2022.
- 15. Shiyin Lu, Yuan Miao, Ping Yang, Yao Hu, and **Lijun Zhang**. Non-stationary Dueling Bandits for Online Learning to Rank. In *Proceedings of the 6th APWeb and WAIM Joint International Conference on Web and Big Data* (**APWeb-WAIM**), Part II, pp. 166{174, 2022.
- 16. **Lijun Zhang**, Guanghui Wang, Jinfeng Yi, and Tianbao Yang. A Simple yet Universal Strategy for Online Convex Optimization. In *Proceedings of the 39th International Conference on Machine Learning* (ICML), pp. 26605{26623, 2022.
- 17. Wei Jiang, Bokun Wang, Yibo Wang, **Lijun Zhang**, and Tianbao Yang. Optimal Algorithms for Stochastic Multi-Level Compositional Optimization. In *Proceedings of the 39th International Conference on Machine Learning* (ICML), pp. 10195{10216, 2022.
- 18. Zi-Hao Qiu, Quanqi Hu, Yongjian Zhong, **Lijun Zhang**, and Tianbao Yang. Large-scale Stochastic Optimization of NDCG Surrogates for Deep Learning with Provable Convergence. In *Proceedings of the 39th International Conference on Machine Learning* (ICML), pp. 18122{18152, 2022.
- 19. Zhuoning Yuan, Yuexin Wu, Zi-Hao Qiu, Xianzhi Du, **Lijun Zhang**, Denny Zhou, and Tianbao Yang. Provable Stochastic Optimization for Global Contrastive Learning: Small Batch Does Not Harm Performance. In *Proceedings of the 39th International Conference on Machine Learning* (**ICML**), pp. 25760{25782, 2022.
- 20. Yingchun Jian, Jinfeng Yi, and **Lijun Zhang**. Adaptive Feature Generation for Online Continual Learning from Imbalanced Data. In *Advances in Knowledge Discovery and Data Mining* (**PAKDD**), pp. 276{289, 2022.
- 21. Guanghui Wang, Ming Yang, Lijun Zhang, and Tianbao Yang. Momentum Accelerates the Convergence of Stochastic AUPRC Maximization. In *Proceedings of The 25th International Conference on Arti cial Intelligence and Statistics* (AISTATS), pp. 3753{3771, 2022.
- 22. Shiyin Lu, Yu-Hang Zhou, Jing-Cheng Shi, Wenya Zhu, Qingtao Yu, Qing-Guo Chen, Qing Da, and **Lijun Zhang**. Non-stationary Continuum-armed Bandits for Online Hyperparameter Optimization. In *Proceedings of the 15th ACM International Conference on Web Search and Data Mining* (WSDM), pp. 618{627, 2022.
- 23. **Lijun Zhang**, Wei Jiang, Shiyin Lu, and Tianbao Yang. Revisiting Smoothed Online Learning. In *Advances in Neural Information Processing Systems 34* (NeurIPS), pp. 13599{13612, 2021.
- 24. **Lijun Zhang**, Guanghui Wang, Wei-Wei Tu, Wei Jiang, and Zhi-Hua Zhou. Dual Adaptivity: A Universal Algorithm for Minimizing the Adaptive Regret of Convex Functions. In *Advances in Neural Information Processing Systems 34* (NeurIPS), pp. 24968{24980, 2021.

- 25. Guanghui Wang, Yuanyu Wan, Tianbao Yang, and Lijun Zhang. Online Convex Optimization with Continuous Switching Constraint. In *Advances in Neural Information Processing Systems 34* (NeurIPS), pp. 28636{28647, 2021.
- 26. Zi-Hao Qiu and Ying-Chun Jian and Qing-Guo Chen, and **Lijun Zhang**. Learning to Augment Imbalanced Data for Re-Ranking Models. In *Proceedings of the 30th ACM International Conference on Information and Knowledge Management* (CIKM), pp. 1478{1487, 2021.
- 27. Yimu Wang, Bo Xue, Quan Cheng, Yuhui Chen, and Lijun Zhang. Deep Uni ed Cross-Modality Hashing by Pairwise Data Alignment. In *Proceedings of the 30th International Joint Conference on Arti cial Intelligence* (IJCAI), pp. 1129{1135, 2021.
- 28. Peng Zhao, and **Lijun Zhang**. Improved Analysis for Dynamic Regret of Strongly Convex and Smooth Functions. In *Proceedings of the 3rd Conference on Learning for Dynamics and Control* (**L4DC**), pp. 48{59, 2021.
- 29. Shiyin Lu, Guanghui Wang, and **Lijun Zhang**. Stochastic Graphical Bandits with Adversarial Corruptions. In *Proceedings of the 35th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 8749{8757, 2021.
- 30. Shiyin Lu, Yao Hu, and **Lijun Zhang**. Stochastic Bandits with Graph Feedback in Non-Stationary Environments. In *Proceedings of the 35th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 8758{8766, 2021.
- 31. Yuanyu Wan, and **Lijun Zhang**. Approximate Multiplication of Sparse Matrices with Limited Space. In *Proceedings of the 35th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 10058{10066, 2021.
- 32. Yuanyu Wan, and **Lijun Zhang**. Projection-free Online Learning over Strongly Convex Sets. In *Proceedings of the 35th AAAI Conference on Arti cial Intelligence* (AAAI), pp. 10067{10075, 2021.
- 33. Yuanyu Wan, Bo Xue, and **Lijun Zhang**. Projection-Free Online Learning in Dynamic Environments. In *Proceedings of the 35th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 10076{10084, 2021.
- 34. Peng Zhao, Yu-Jie Zhang, Lijun Zhang, and Zhi-Hua Zhou. Dynamic Regret of Convex and Smooth Functions. In *Advances in Neural Information Processing Systems* 33 (NeurIPS), pp. 12510{12520, 2020.
- 35. Pengcheng Li, Runze Li, Qing Da, An-Xiang Zeng, and **Lijun Zhang**. Improving Multi-Scenario Learning to Rank in E-Commerce by Exploiting Task Relationships in the Label Space. In *Proceedings of the 29th ACM International Conference on Information and Knowledge Management* (CIKM), pp. 2605{2612, 2020.
- 36. Yimu Wang, Shiyin Lu, and **Lijun Zhang**. Searching Privately by Imperceptible Lying: A Novel Private Hashing Method with Di erential Privacy. In *Proceedings of the 28th ACM International Conference on Multimedia* (ACM Multimedia), pp. 2700{2709, 2020.
- 37. Yimu Wang, Xiu-Shen Wei, Bo Xue, and **Lijun Zhang**. Piecewise Hashing: A Deep Hashing Method for Large-Scale Fine-Grained Search. In *Proceedings of the 3rd Chinese Conference on Pattern Recognition and Computer Vision* (**PRCV**), pp. 432{ 444, 2020.

- 38. Yuanyu Wan, Wei-Wei Tu, and **Lijun Zhang**. Projection-free Distributed Online Convex Optimization with $O(\sqrt{T})$ Communication Complexity. In *Proceedings of the 37th International Conference on Machine Learning* (**ICML**), pp. 9818{9828, 2020.
- 39. Yan Yan, Yi Xu, Lijun Zhang

- 52. **Lijun Zhang**, Tie-Yan Liu, and Zhi-Hua Zhou. Adaptive Regret of Convex and Smooth Functions. In *Proceedings of the 36th International Conference on Machine Learning* (ICML), pp. 7414{7423, 2019.
- 53. Shiyin Lu, Guanghui Wang, Yao Hu, and **Lijun Zhang**. Optimal Algorithms for Lipschitz Bandits with Heavy-tailed Rewards. In *Proceedings of the 36th International Conference on Machine Learning* (**ICML**), pp. 4154(4163, 2019.
- 54. **Lijun Zhang**, and Zhi-Hua Zhou. `1-regression with Heavy-tailed Distributions. In *Advances in Neural Information Processing Systems 31* (NeurIPS), pp. 1076{1086, 2018.
- 55. **Lijun Zhang**, Shiyin Lu, and Zhi-Hua Zhou. Adaptive Online Learning in Dynamic Environments. In *Advances in Neural Information Processing Systems 31* (NeurIPS), pp. 1323{1333, 2018.
- 56. Mingrui Liu, Xiaoxuan Zhang, **Lijun Zhang**, Rong Jin, and Tianbao Yang. Fast Rates of ERM and Stochastic Approximation: Adaptive to Error Bound Conditions. In *Advances in Neural Information Processing Systems 31* (**NeurIPS**), pp. 4678{ 4689, 2018.
- 57. Pengcheng Li, Jinfeng Yi, and **Lijun Zhang**. Query-E cient Black-Box Attack by Active Learning. In *Proceedings of the 18th IEEE International Conference on Data Mining* (ICDM), pp. 1200{1205, 2018.
- 58. **Lijun Zhang**, Tianbao Yang, Rong Jin, and Zhi-Hua Zhou. Dynamic Regret of Strongly Adaptive Methods. In *Proceedings of the 35th International Conference on Machine Learning* (ICML), pp. 5882{5891, 2018.
- 59. Guanghui Wang, Dakuan Zhao, and **Lijun Zhang**. Minimizing Adaptive Regret with One Gradient per Iteration. In *Proceedings of the 27th International Joint Conference on Arti cial Intelligence* (IJCAI), pp. 2762{2768, 2018.
- 60. Yuanyu Wan, Nan Wei, and **Lijun Zhang**. E cient Adaptive Online Learning via Frequent Directions. In *Proceedings of the 27th International Joint Conference on Arti cial Intelligence* (IJCAI), pp. 2748(2754, 2018.
- 61. Yuanyu Wan, and **Lijun Zhang**. Accelerating Adaptive Online Learning by Matrix Approximation. In *Advances in Knowledge Discovery and Data Mining* (**PAKDD**), pp. 405{417, 2018.
- 62. Tianbao Yang, Zhe Li, and **Lijun Zhang**. A Simple Analysis for Exp-concave Empirical Minimization with Arbitrary Convex Regularizer. In *Proceedings of the 21st International Conference on Arti cial Intelligence and Statistics* (AISTATS), pp. 445{453, 2018.
- 63. Haipeng Dai, Ke Sun, Alex X. Liu, **Lijun Zhang**, Jiaqi Zheng, and Guihai Chen. Charging Task Scheduling for Directional Wireless Charger Networks. In *Proceedings* of the 47th International Conference on Parallel Processing (ICPP), 2018.
- 64. **Lijun Zhang**, Tianbao Yang, Jinfeng Yi, Rong Jin, and Zhi-Hua Zhou. Improved Dynamic Regret for Non-degenerate Functions. In *Advance in Neural Information Processing Systems 30* (NIPS), pp. 732{741, 2017.
- 65. Bo-Jian Hou, **Lijun Zhang**, and Zhi-Hua Zhou. Learning with Feature Evolvable Streams. In *Advance in Neural Information Processing Systems 30* (NIPS), pp. 1416{1426, 2017.

- 66. Jinfeng Yi, Cho-Jui Hsieh, Kush R. Varshney, **Lijun Zhang**, and Yao Li. Scalable Demand-Aware Recommendation. In *Advance in Neural Information Processing Systems 30* (NIPS), pp. 2409{2418, 2017.
- 67. **Lijun Zhang**, Tianbao Yang, and Rong Jin. Empirical Risk Minimization for Stochastic Convex Optimization: O(1=n)- and $O(1=n^2)$ -type of Risk Bounds. In *Proceedings of the 30th Conference on Learning Theory* (COLT), pp. 1954{1979, 2017.
- 68. Tianbao Yang, Qihang Lin, and **Lijun Zhang**. A Richer Theory of Convex Constrained Optimization with Reduced Projections and Improved Rates. In *Proceedings of the 34th International Conference on Machine Learning* (ICML), pp. 3901{3910, 2017.
- 69. Xinyu Yan, **Lijun Zhang**, and Wu-Jun Li. Semi-Supervised Deep Hashing with a Bipartite Graph. In *Proceedings of the 26th International Joint Conference on Arti cial Intelligence* (IJCAI), pp. 3238{3244, 2017.
- 70. Bo-Jian Hou, **Lijun Zhang**, and Zhi-Hua Zhou. Storage Fit Learning with Unlabeled Data. In *Proceedings of the 26th International Joint Conference on Arti cial Intelligence* (IJCAI), pp. 1844{1850, 2017.
- 71. Yichi Xiao, Zhe Li, Tianbao Yang, and **Lijun Zhang**. SVD-free Convex-Concave Approaches for Nuclear Norm Regularization. In *Proceedings of the 26th International Joint Conference on Arti cial Intelligence* (IJCAI), pp. 3126{3132, 2017.
- 72. Jie Zhang, and **Lijun Zhang**. E cient Stochastic Optimization for Low-Rank Distance Metric Learning. In *Proceedings of the 31st AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 933{939, 2017.
- 73. Zhe Li, Tianbao Yang, **Lijun Zhang**, and Rong Jin. A Two-stage Approach for Learning a Sparse Model with Sharp Excess Risk Analysis. In *Proceedings of the 31st AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 2224{2230, 2017.
- 74. Yi Xu, Haiqin Yang, **Lijun Zhang**, and Tianbao Yang. E cient Non-oblivious Randomized Reduction for Risk Minimization with Improved Excess Risk Guarantee. In *Proceedings of the 31st AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 2796{2802, 2017.
- 75. **Lijun Zhang**, Tianbao Yang, Rong Jin, and Zhi-Hua Zhou. Sparse Learning for Large-scale and High-dimensional Data: A Randomized Convex-concave Optimization Approach. In *Proceedings of the 27th International Conference on Algorithmic Learning Theory* (ALT), pp. 83{97, 2016.
- 76. Jianhui Chen, Tianbao Yang, Qihang Lin, **Lijun Zhang**, and Yi Chang. Optimal Stochastic Strongly Convex Optimization with a Logarithmic Number of Projections. In *Proceedings of the 32nd Conference on Uncertainty in Arti cial Intelligence* (**UAI**), pp. 122{131, 2016.
- 77. **Lijun Zhang**, Tianbao Yang, Rong Jin, Yichi Xiao, and Zhi-Hua Zhou. Online Stochastic Linear Optimization under One-bit Feedback. In *Proceedings of the 33rd International Conference on Machine Learning* (ICML), pp. 392{401, 2016.
- 78. Tianbao Yang, **Lijun Zhang**, Rong Jin, and Jinfeng Yi. Tracking Slowly Moving Clairvoyant: Optimal Dynamic Regret of Online Learning with True and Noisy Gradient. In *Proceedings of the 33rd International Conference on Machine Learning* (**ICML**), pp. 449{457, 2016.

- 79. **Lijun Zhang**, Tianbao Yang, Jinfeng Yi, Rong Jin, and Zhi-Hua Zhou. Stochastic Optimization for Kernel PCA. In *Proceedings of the 30th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 2316{2322, 2016.
- 80. Weizhong Zhang, Lijun Zhang, Rong Jin, Deng Cai, and Xiaofei He. Accelerated Sparse Linear Regression via Random Projection. In *Proceedings of the 30th AAAI Conference on Arti cial Intelligence* (AAAI), pp. 2337{2343, 2016.
- 81. Zhe Li, Tianbao Yang, Lijun Zhang, and Rong Jin. Fast and Accurate Re ned Nystrom Based Kernel SVM. In *Proceedings of the 30th AAAI Conference on Articial Intelligence* (AAAI), pp. 1830{1836, 2016.
- 82. Jinfeng Yi, Lijun Zhang, Tianbao Yang, Wei Liu, and Jun Wang. An E cient Semi-Supervised Clustering Algorithm with Sequential Constraints. In *Proceedings of the 21th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), pp. 1405{1414, 2015.
- 83. Mehrdad Mahdavi, Lijun Zhang, and Rong Jin. Lower and Upper Bounds on the Generalization of Stochastic Exponentially Concave Optimization. In *Proceedings of the 28th Conference on Learning Theory* (COLT), pp. 1305{1320, 2015.
- 84. Tianbao Yang, **Lijun Zhang**, Rong Jin, and Shenghuo Zhu. An Explicit Sampling Dependent Spectral Error Bound for Column Subset Selection. In *Proceedings of the 32nd International Conference on Machine Learning* (ICML), pp. 135{143, 2015.
- 85. Tianbao Yang, **Lijun Zhang**, Rong Jin, and Shenghuo Zhu. Theory of Dual-Sparse Regularized Randomized Reduction. In *Proceedings of the 32nd International Conference on Machine Learning* (ICML), pp. 305{314, 2015.
- 86. **Lijun Zhang**, Tianbao Yang, Rong Jin, and Zhi-Hua Zhou. A Simple Homotopy Algorithm for Compressive Sensing. In *Proceedings of the 18th International Conference on Arti cial Intelligence and Statistics* (AISTATS), pp. 1116{1124, 2015.
- 87. **Lijun Zhang**, Tianbao Yang, Rong Jin, and Zhi-Hua Zhou. Online Bandit Learning for a Special Class of Non-convex Losses. In *Proceedings of the 29th AAAI Conference on Arti cial Intelligence* (AAAI), pp. 3158{3164, 2015.
- 88. **Lijun Zhang**, Jinfeng Yi, and Rong Jin. E cient Algorithms for Robust One-bit Compressive Sensing. In *Proceedings of the 31st International Conference on Machine Learning* (ICML), pp. 820{828, 2014.
- 89. Jinfeng Yi, Lijun Zhang, Jun Wang, Rong Jin, and Anil K. Jain. A Single-Pass Algorithm for E ciently Recovering Sparse Cluster Centers of High-dimensional Data. In *Proceedings of the 31st International Conference on Machine Learning* (ICML), pp. 658{666, 2014.
- 90. Weizhong Zhang, **Lijun Zhang**, Yao Hu, Rong Jin, Deng Cai, and Xiaofei He. Sparse Learning for Stochastic Composite Optimization. In *Proceedings of the 28th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 893{899, 2014.
- 91. **Lijun Zhang**, Mehrdad Mahdavi, and Rong Jin. Linear Convergence With Condition Number Independent Access of Full Gradients. In *Advances in Neural Information Processing Systems 26* (NIPS), pp. 980{988, 2013.
- 92. Mehrdad Mahdavi, **Lijun Zhang**, and Rong Jin. Mixed Optimization for Smooth Functions. In *Advances in Neural Information Processing Systems 26* (**NIPS**), pp. 674{ 682, 2013.

- 93. **Lijun Zhang**, Mehrdad Mahdavi, Rong Jin, Tianbao Yang, and Shenghuo Zhu. Recovering the Optimal Solution by Dual Random Projection. In *Proceedings of the 26th Annual Conference on Learning Theory* (COLT), pp. 135{157, 2013.
- 94. **Lijun Zhang**, Jinfeng Yi, Rong Jin, Ming Lin, and Xiaofei He. Online Kernel Learning with a Near Optimal Sparsity Bound. In *Proceedings of the 30th International Conference on Machine Learning* (ICML), pp. 621{629, 2013.
- 95. **Lijun Zhang**, Tianbao Yang, Rong Jin, and Xiaofei He. $O(\log T)$ Projections for Stochastic Optimization of Smooth and Strongly Convex Functions. In *Proceedings of the 30th International Conference on Machine Learning* (ICML), pp. 1121{1129, 2013.
- 96. Jinfeng Yi, **Lijun Zhang**, Rong Jin, Qi Qian, and Anil K. Jain. Semi-Supervised Clustering by Input Pattern Assisted Pairwise Similarity Matrix Completion. In *Proceedings of the 30th International Conference on Machine Learning* (ICML), pp. 1400{1408, 2013.
- 97. Tianbao Yang, Mehrdad Mahdavi, Rong Jin, **Lijun Zhang**, and Yang Zhou. Multiple Kernel Learning from Noisy Labels by Stochastic Programming. In *Proceedings of the 29th International Conference on Machine Learning* (ICML), pp. 233{240, 2012.
- 98. **Lijun Zhang**, Rong Jin, Chun Chen, Jiajun Bu, and Xiaofei He. E cient Online Learning for Large-Scale Sparse Kernel Logistic Regression. In *Proceedings of the 26th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 1219{1225, 2012.
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- 100. Lijun Zhang, Chun Chen, Jiajun Bu, Zhengguang Chen, Shulong Tan, and Xiaofei He. Discriminative Codeword Selection for Image Representation. In *Proceedings of the 18th ACM International Conference on Multimedia* (ACM Multimedia), pp. 173{182, 2010.
- 101. Jiajun Bu, Shulong Tan, Chun Chen, Can Wang, Hao Wu, Lijun Zhang, and Xiaofei He. Music Recommendation by Uni ed Hypergraph: Combining Social Media Information and Music Content. In *Proceedings of the 18th ACM International Conference on Multimedia* (ACM Multimedia), pp. 391{400, 2010.
- 102. Chun Chen, Zhengguang Chen, Jiajun Bu, Can Wang, **Lijun Zhang**, and Cheng Zhang. G-Optimal Design with Laplacian Regularization. In *Proceedings of the 24th AAAI Conference on Arti cial Intelligence* (**AAAI**), pp. 413{418, 2010.
- 103. Hao Wu, Jiajun Bu, Chun Chen, Can Wang, Guang Qiu, **Lijun Zhang**, and Jianfeng Shen. Modeling Dynamic Multi-Topic Discussions in Online Forums. In *Proceedings* of the 24th AAAI Conference on Arti cial Intelligence (AAAI), pp. 1455{1460, 2010.
- 104. **Lijun Zhang**, Chun Chen, Wei Chen, Jiajun Bu, Deng Cai, and Xiaofei He. Convex Experimental Design Using Manifold Structure for Image Retrieval. In *Proceedings of the 17th ACM International Conference on Multimedia* (ACM Multimedia), pp. 45{53, 2009.

Journal Publications

1. Bo-Jian Hou, **Lijun Zhang**, and Zhi-Hua Zhou. Prediction With Unpredictable Feature Evolution. *IEEE Transactions on Neural Networks and Learning Systems* (**TNNLS**), 33(10): 5706(5715, 2022.

- 2. Yuanyu Wan, and Lijun Zhang. E cient Adaptive Online Learning via Frequent Directions. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 44(10): 6910{6923, 2022.
- 3. Yuanyu Wan, Wei-Wei Tu, and **Lijun Zhang**. Strongly Adaptive Online Learning over Partial Intervals. *Science China Information Sciences* (**SCIS**), 65(10): 202101, 2022.
- 4. Yuanyu Wan, Guanghui Wang, Wei-Wei Tu, and Lijun Zhang. Projection-free Distributed Online Learning with Sublinear Communication Complexity. *Journal of Machine Learning Research* (JMLR), 23(172): 1{53, 2022.
- 5. Yuanyu Wan, Wei-Wei Tu, and **Lijun Zhang**. Online Strongly Convex Optimization with Unknown Delays. *Machine Learning*, 111(3): 871{893, 2022.
- 6. Haipeng Dai, Ke Sun, Alex X. Liu, **Lijun Zhang**, Jiaqi Zheng, and Guihai Chen. Charging Task Scheduling for Directional Wireless Charger Networks. *IEEE Transactions on Mobile Computing* (**TMC**), 20(11): 3163(3180, 2021.
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- 8. Bo-Jian Hou, **Lijun Zhang**, and Zhi-Hua Zhou. Learning With Feature Evolvable Streams. *IEEE Transactions on Knowledge and Data Engineering* (**TKDE**), 33(6): 2602{2615, 2021.
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- 10. Yuanyu Wan, and **Lijun Zhang**. Accelerating Adaptive Online Learning by Matrix Approximation. *International Journal of Data Science and Analytics* (**JDSA**), 9(4): 389(400, 2020.
- 11. Fanhua Shang, Kaiwen Zhou, Hongying Liu, James Cheng, Ivor W. Tsang, **Lijun Zhang**, Dacheng Tao, and Licheng Jiao. Sparse Learning with Stochastic Composite Optimization. *IEEE Transactions on Knowledge and Data Engineering* (TKDE), 32(1): 188{202, 2020.
- 12. **Lijun Zhang**, Tianbao Yang, Rong Jin, and Zhi-Hua Zhou. Relative Error Bound Analysis for Nuclear Norm Regularized Matrix Completion. *Journal of Machine Learning Research* (JMLR), 20(97): 1{22, 2019.
- 13. Tianbao Yang, **Lijun Zhang**, Rong Jin, Shenghuo Zhu, and Zhi-Hua Zhou. A Simple Homotopy Proximal Mapping Algorithm for Compressive Sensing. *Machine Learning*, 108(6): 1019{1056, 2019.
- 14. Weizhong Zhang, **Lijun Zhang**, Zhongming Jin, Rong Jin, Deng Cai, Xuelong Li, Ronghua Liang, and Xiaofei He. Sparse Learning with Stochastic Composite Optimization. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 39(6): 1223{1236, 2017.
- 15. Sen Yang, and **Lijun Zhang**. Non-redundant Multiple Clustering by Nonnegative Matrix Factorization. *Machine Learning*, 106(5): 695{712, 2017.
- 16. Xiaofei He, Chiyuan Zhang, **Lijun Zhang**, and Xuelong Li. A-Optimal Projection for Image Representation. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 38(5): 1009{1015, 2016.

- 17. Zhou Zhao, Xiaofei He, Deng Cai, **Lijun Zhang**, Wilfred Ng, and Yueting Zhuang. Graph Regularized Feature Selection with Data Reconstruction. *IEEE Transactions on Knowledge and Data Engineering* (TKDE), 28(3): 689{700, 2016.
- 18. Ming Lin, **Lijun Zhang**, Rong Jin, Shifeng Weng, and Changshui Zhang. Online Kernel Learning with Nearly Constant Support Vectors. *Neurocomputing*, 179: 26{36, 2016.
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- 20. Zhou Zhao, **Lijun Zhang**, Xiaofei He, and Wilfred Ng. Expert Finding for Question Answering via Graph Regularized Matrix Completion. *IEEE Transactions on Knowledge and Data Engineering* (**TKDE**), 27(4): 993{1004, 2015.
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- 23. Zhanying He, Chun Chen, Jiajun Bu, Can Wang, **Lijun Zhang**, Deng Cai, and Xiaofei He. Unsupervised Document Summarization from Data Reconstruction Perspective. *Neurocomputing*, 157: 356{366, 2015.
- 24. **Lijun Zhang**, Mehrdad Mahdavi, Rong Jin, Tianbao Yang, and Shenghuo Zhu. Random Projections for Classi cation: A Recovery Approach. *IEEE Transactions on Information Theory* (TIT), 60(11): 7300{7316, 2014.
- 25. **Lijun Zhang**. Locally Regressive Projections. *International Journal of Software and Informatics* (IJSI), 7(3): 435(451, 2013.
- 26. **Lijun Zhang**, Chun Chen, Jiajun Bu, Zhengguang Chen, Deng Cai, and Jiawei Han. Locally Discriminative Coclustering. *IEEE Transactions on Knowledge and Data Engineering* (TKDE), 24(6): 1025{1035, 2012.
- 27. **Lijun Zhang**, Chun Chen, Jiajun Bu, and Xiaofei He. A Uni ed Feature and Instance Selection Framework Using Optimum Experimental Design. *IEEE Transactions on Image Processing* (TIP), 21(5): 2379{2388, 2012.
- 28. Hao Wu, Jiajun Bu, Chun Chen, Jianke Zhu, **Lijun Zhang**, Haifeng Liu, Can Wang, and Deng Cai. Locally Discriminative Topic Modeling. *Pattern Recognition*, 45(1): 617{625, 2012.
- 29. **Lijun Zhang**, Chun Chen, Jiajun Bu, Deng Cai, Xiaofei He, and Thomas S. Huang. Active Learning Based on Locally Linear Reconstruction. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 33(10): 2026{2038, 2011.
- 30. Miao Zheng, Jiajun Bu, Chun Chen, Can Wang, **Lijun Zhang**, Guang Qiu, and Deng Cai. Graph Regularized Sparse Coding for Image Representation. *IEEE Transactions on Image Processing* (TIP), 20(5): 1327{1336. 2011.
- 31. **Lijun Zhang**, Zhengguang Chen, Miao Zheng, and Xiaofei He. Robust Non-negative Matrix Factorization. *Frontiers of Electrical and Electronic Engineering in China*, 6: 192{200, 2011.

32. Chun Chen, **Lijun Zhang**, Jiajun Bu, Can Wang, and Wei Chen. Constrained Laplacian Eigenmap for Dimensionality Reduction. *Neurocomputing*, 73(4-6): 951(958, 2010.

Invited Talks

- Group Distributionally Robust Optimization, The 4th Conference on Big Data and Arti cial Intelligence Organized by CSIAM (CSIAM-BDAI 2023).
- Smoothed Online Learning, The 3rd Conference on Big Data and Arti cial Intelligence Organized by CSIAM (CSIAM-BDAI 2021).
- Online Learning in Changing Environments, Early Career Spotlight Talks of the 29th International Joint Conference on Arti cial Intelligence (IJCAI 2020).
- Adaptive Regret for Online Learning, Microsoft Research Asia Academic Day 2019.
- Learning under Heavy-tailed Distributions, The 2nd International Symposium on Image Computing and Digital Medicine (ISICDM 2018).
- E cient Online Learning for Dynamic Environments, The 1st Conference on Big Data and Arti cial Intelligence Organized by CSIAM (CSIAM-BDAI 2018).
- E cient Online Learning for Dynamic Environments, 2018 International Workshop on Signal Processing, Optimization and Control (SPOC 2018).
- Online Learning and Applications, The 1st International Symposium on Image Computing and Digital Medicine (ISICDM 2017).
- Fast Rates for Empirical Risk Minimization: Beyond the O(1=n) Risk Bound, The 16th China Conference on Machine Learning (CCML 2017).
- Online Learning in Dynamic Environment, The 2nd Youth Symposium on Scienti c and Engineering Computing (YSSEC 2016).
- Online Stochastic Linear Optimization under One-bit Feedback, The 6th Vision and Learning Seminar (VALSE 2016).
- Randomized Algorithms for Large-scale Convex Optimization, 2016 Nanjing Workshop on Numerical Optimization with Applications.
- Stochastic Optimization for Large-scale Machine Learning, The 13rd Chinese Workshop on Machine Learning and Applications (MLA 2015).
- Randomized Algorithms for Large-scale Convex Optimization, The 2nd Chinese Workshop on Evolutionary Computation and Learning (ECOLE 2015).