Yiming Ying | CV

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https://sites.google.com/view/mlualbany

Education

Zhejiang University **Hangzhou, China**
PhD in Mathematics, *09/1997–07/2002*
Thesis Topic: Studies on Some Operators with Rough Kernels in Harmonic Analysis

Zhejiang University (formerly Hangzhou University) **Hangzhou, China**
BSc in Mathematics, *09/1993-07/1997*

Professional Appointments

School of Mathematics and Statistics, University of Sdyney **Sydney, NSW, Australia**
Professor *12/2023–present*

Department of Mathematics and Statistics, SUNY Albany **Albany, NY, USA**
Professor *01/2021–12/2023*

Department of Mathematics and Statistics, SUNY Albany **Albany, NY, USA**
Associate Professor (Tenured at 01/2017) *01/2015–12/2020*

Department of Computer Science, University of Exeter **Exeter, UK**
Lecturer (equivalent to tenured assistant professor in USA) *03/2010–12/2014*

Department of Engineering Mathematics, University of Bristol **Bristol, UK**
Research Associate *04/2007–02/2010*
Mentor: Prof Colin Campbell

Department of Computer Science, University College London **London, UK**
Research Fellow *08/2005–03/2007*
Mentor: Prof Massimiliano Pontil

Department of Mathematics, City University of Hong Kong **Hong Kong, China**
Postdoc *01/2003–07/2005*
Mentor: Prof Ding-Xuan Zhou

Institute of Mathematics, Chinese Academy of Sciences **Beijing, China**
Postdoc *07/2002–12/2002*
Mentor: Prof Jiayu Li

Grants

SUNY-IBM AI Research Alliance, $100,000 **Co-PI**
Quantization and Compression of Large AI Models , *2024-2025*
Penghang Yin (PI) and Zi Yang (Co-PI). Yiming initiated and organised the team for the project, slated for award at SUNY Albany, but declined participation due to relocation to USYD

SUNY-IBM AI Research Alliance, $100,000 **PI**
FRAPP: Fair, Robust, And Privacy-Preserving machine learning, *2021-2023*

NSF DMS-2110836, $150,000 **PI**
New Studies of Learning with Stochastic Convex Optimization, *2021-2024*

NSF IIS-2110546, $233,510 **PI**
Robust Deep Learning with Big Imbalanced Data, *2021-2024*
Collaborative Research with Tianbao Yang from University of Iowa

NSF IIS-2008532, total $449,985, UAlbany portion $201,286 **Co-PI**
A Study of New Aggregate Losses in Machine Learning, *2020-2023*
PI: Siwei Lyu at University of Buffalo

NSF IIS-1816227, $498,333 **PI**
Online AUC Maximization Algorithms for Streaming Data, *2018-2022*
Co-PI: Siwei Lyu

Department of Energy with subaward from Ecolong, $37,000 (Phrase I) **PI**
Advanced peer to peer transactive energy platform with predictive optimization, *2018-2019*

Simons Foundation: Collaboration grant for Mathematicians, $14,000 **PI**
Theory and Algorithms for Non-standard Performance Measures, *09/2016-08/2018*

PIFRS from UAlbany, $45,840 **PI**
Advanced Metric Learning for Big Data, *2018-2019*
Co-PI: Michael Stessin and CI: Siwei Lyu

EPSRC grant EP/J001384/1 (UK), £124,000 **PI**
Towards a new generation of matrix learning methods in machine learning *02/2012-06/2013*

Royal Devon and Exeter NHS Foundation Trust (UK), £21,000 **PI**
Towards Automatic Prediction of Tumor Growth from CT Images *2012-2013*
Co-PI: Richard Everson

Awards

SUNY Chancellor's Excellence Award in Research and Creative Activities **2023**
SUNY System

President's Award for Excellence in Research and Creative Activities **2022**
SUNY Albany

Merit Award **2012**
University of Exeter

Publications

Notation * denotes the student co-authorship and † indicates the corresponding authorship.

Books

- Colin Campbell and **Yiming Ying**, Learning with Support Vector Machines, Morgan and Claypool, 2011.

Refereed Journal Papers

1. Bokun Wang, Zhuoning Yuan, **Yiming Ying**, and Tianbao Yang. Memory-Based Optimization Methods for Model-Agnostic Meta-Learning and Personalized Federated Learning. *Journal of Machine Learning Research (JMLR)*, 24:1-46, 2023.

2. R Wang, AA Lemus, CM Henneberry, **Y. Ying**, Y Feng, and AM Valm. Unmixing biological fluorescence image data with sparse and low-rank Poisson regression. *Bioinformatics*, 39(4), 2023.
3. Tianbao Yang and **Yiming Ying**. AUC maximization in the era of big data and AI: A survey. *ACM Computing Surveys (CSUR)*, 2022. `https://dl.acm.org/doi/abs/10.1145/3554729`
4. Puyu Wang*, Yunwen Lei, **Yiming Ying**†, and Hai Zhang. Differentially private SGD with non-smooth losses. *Applied and Computational Harmonic Analysis (ACHA)*, 56: 306-336 (2022) Available online `https://doi.org/10.1016/j.acha.2021.09.001`.
5. Michael Natole Jr*, **Yiming Ying**†, Alexander Buyantuev, Michael Stessin, Victor Buyantuev, Andrei Lapenis. Patterns of mega-forest fires in east Siberia will become less predictable with climate warming. *Environmental Advances*, Volume 4, 2021.
6. Puyu Wang*, Zhenhuan Yang*, Yunwen Lei, **Yiming**, and Hai Zhang. Differentially Private Empirical Risk Minimization for AUC Maximization. *Neurocomputing*. Available online, July, 2021.
7. Zhenhuan Yang*, Wei Shen*, **Yiming Ying**† and Xiaoming Yuan. Stochastic AUC Optimization with General Loss. *Communications on Pure and Applied Analysis*, 19(8): 4191-4212, 2020.
8. Yunlong Feng and **Yiming Ying**. Learning with correntropy-induced losses for regression with mixture of symmetric stable noise. *Applied and Computational Harmonic Analysis*, 48:795-810, 2020.
9. Wei Shen*, Zhenhuan Yang*, **Yiming Ying**† and Xiaoming Yuan. Stability and optimization error of stochastic gradient descent for pairwise learning. *Analysis and Applications*. 18(5) 887-927, 2020.
10. Siwei Lyu, Yanbo Fan, **Yiming Ying**, and Bao-Gang Hu. Average Top-k Aggregate Loss For Supervised Learning. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2020. Early Access, June, 2020.
11. Zhenhuan Yang*, **Yiming Ying** and Qilong Min. Online optimization for residential PV-ESS energy system scheduling. *Mathematical Foundation of Computing*, 2(1): 55-71, 2019.
12. Michael Natole*, **Yiming Ying**†, Siwei Lyu. Stochastic AUC Optimization Algorithms with Linear Convergence. *Frontiers in Applied Mathematics and Statistics*, 19 June, 2019.
13. Julien Bohne, **Yiming Ying**, Stephane Gentric, and Massimiliano Pontil. Learning local metrics from pairwise similarity data. *Pattern Recognition*, 75: 315-326, 2018.
14. Chengqiang Huang, Geyong Min, Yulei Wu, **Yiming Ying**. Time series anomaly detection for trustworthy services in cloud computing systems. *IEEE Transactions on Big Data*, 2017.
15. Qin Fang, Min Xu and **Yiming Ying**. Faster convergence of a randomized coordinate descent method for linearly constrained optimization problems. *Analysis and Applications*, 16(5): 741-755, 2018.
16. **Yiming Ying**† and Ding-Xuan Zhou, Unregularized online learning algorithms with general loss functions. *Applied and Computational Harmonic Analysis (ACHA)*, 42(2): 224-244, 2017.
17. Zheng-Chu Guo, **Yiming Ying**† and Ding-Xuan Zhou. Online regularized pairwise learning algorithms. *Advances in Computational Mathematics*, 43(1): 127-150, 2017.
18. **Yiming Ying**† and Ding-Xuan Zhou. Online Pairwise Learning Algorithms. *Neural Computation*, 28: 743-777, 2016.
19. Qiong Cao*, Zheng-Chu Guo and **Yiming Ying**†. Generalization bounds for similarity and metric learning. *Machine Learning Journal*, 102: 115-132, 2016
20. Yunwen Lei* and **Yiming Ying**†. Generalization analysis for multi-modal metric learning. *Analysis and Applications*, 14: 503-521, 2015.

21. Mark Rogers, Colin Campbell and **Yiming Ying**. Probabilistic inference of biological networks via data integration. *BioMed Research International*, Article ID 707453, 2015.
22. Zheng-Chu Guo and **Yiming Ying**†. Guaranteed classification via regularized similarity learning. *Neural Computation*, 26: 497–522, 2013.
23. **Yiming Ying**† and Peng Li. Distance metric learning with eigenvalue optimization. *Journal of Machine Learning Research*, 13: 1-26, 2012.
24. **Yiming Ying**†, Qiang Wu, and Colin Campbell. Learning the coordinate gradients. *Advances in Computational Mathematics*, 37: 355–378, 2012. (Published Online, September, 2011.)
25. Kaizhu Huang, **Yiming Ying** and Colin Campbell. Generalized sparse metric learning with relative comparisons. *Journal of Knowledge and Information Systems (KAIS)*, 28: 25-45, 2011.
26. **Yiming Ying**† and Colin Campbell. Rademacher chaos complexity for learning the kernel problem. *Neural Computation*, 22: 2858-2886, 2010.
27. **Yiming Ying**†, Kaizhu Huang, and Colin Campbell. Enhanced protein fold recognition through a novel data integration approach. *BMC Bioinformatics*, 10:267, 2009.
28. Phaedra Agius, **Yiming Ying**, and Colin Campbell. Bayesian unsupervised learning with multiple data types. *Statistical Applications in Genetics and Molecular Biology*, Vol. 8 Issue 1, 2009.
29. Andrea Capponetto, Charles A. Micchelli, Massimiliano Pontil, and **Yiming Ying**. Universal multi-task kernels, *Journal of Machine Learning Research*, 9: 1615–1646, 2008. (alphabetical order)
30. **Yiming Ying**† and Massimiliano Pontil. Online gradient descent learning algorithms. *Foundations of Computational Mathematics*, 5: 561-596, 2008.
31. **Yiming Ying** and Ding-Xuan Zhou. Learnability of Gaussians with flexible variances. *Journal of Machine Learning Research*, 8: 249-276, 2007.
32. **Yiming Ying**. Convergence analysis of online algorithms. *Advances in Computational Mathematics,* 27: 273-291, 2007.
33. Qiang Wu, **Yiming Ying**, and Ding-Xuan Zhou. Multi-kernel regularized classifiers. *Journal of Complexity,* 23: 108–134, 2007.
34. **Yiming Ying** and Ding-Xuan Zhou. Online regularized classification algorithms. *IEEE Transactions on Information Theory*, 11: 4775-4788, 2006.
35. Qiang Wu, **Yiming Ying**, and Ding-Xuan Zhou. Learning rates of least-square regularized regression. *Foundations of Computational Mathematics,* 6: 171-192, 2005.
36. Qiang Wu, **Yiming Ying**, and Ding-Xuan Zhou. Learning theory: from regression to classification. *Topics in Multivariate Approximation and Interpolation*, K. Jetter et.al., Editors, 101–134, 2004.
37. Di-Rong Chen, Qiang Wu, **Yiming Ying**, and Ding-Xuan Zhou. Support vector machine soft margin classifiers: error analysis. *Journal of Machine Learning Research*, 5: 1143-1175, 2004.
38. Jiayu Li and **Yiming Ying**. Relations between local Hardy and Lorentz spaces. *Chinese Annals of Mathematics, Series A* 26: 459-462, 2005.
39. Jiecheng Chen, Dashan Fan, and **Yiming Ying**. A note on the Marcinkiewicz integral operator with rough kernel on product spaces. *Chinese Annals of Mathematics, Series A*, 24 : 777–786, 2003.
40. **Yiming Ying** and Jiecheng Chen. L^p boundedness of a class of singular integrals on product domains. *Acta Mathematica Sinica*, 46: 833–842, 2003.
41. Jiecheng Chen, Dashan Fan, and **Yiming Ying**. Certain operators with rough singular kernels. *Canadian Journal of Mathematics*, 55: 504–532, 2003.
42. Han Xu, Jiecheng Chen, and **Yiming Ying**. A note on Marcinkiewicz integrals with H^1 kernels.

Acta Mathematica Scientia, Series B, 23: 133–138, 2003.

43. Jiecheng Chen, Dashan Fan, and **Yiming Ying**. The method of rotation and Marcinkiewicz integrals on product domains. *Studia Mathematica*, 153: 41–58, 2002.
44. Jiecheng Chen, Dashan Fan, and **Yiming Ying**. Singular integral operators on function spaces. *Journal of Mathematical Analysis and Applications*, 276: 691–708, 2002.
45. Jiecheng Chen, Dashan Fan, and **Yiming Ying**. Rough Marcinkiewicz integrals with $L(\log^+ L)^2$ kernels on product spaces. *Advances in Mathematics (China)*, 30: 179–181, 2001.

Refereed Conference Papers

46. Lisha Chen, Heshan Fernando, **Yiming Ying**, abd Tianyi Chen. Three-way trade-off in multi-objective learning: Optimization, generalization and conflict-avoidance. *Advances in Neural Information Processing Systems (NeurIPS)*, 2023.
47. Yunwen Lei, Tianbao Yang, **Yiming Ying**†, Ding-Xuan Zhou. Generalisation Analysis for Contrastive Representation Learning. *International Conference on Machine Learning (ICML)*, 2023.
48. Dixian Zhu, **Yiming Ying**, Tianbao Yang. Label Distributionally Robust Losses for Multi-class Classification: Consistency, Robustness and Adaptivity. *International Conference on Machine Learning (ICML)*, 2023.
49. Shu Hu*, Zhenhuan Yang*, Xin Wang, **Yiming Ying**, and Siwei Lyu. Outlier robust adversarial training. *The 15th Asian Conference on Machine Learning (ACML)*, 2023.
50. Zhenhuan Yang*, Yan Lok Ko, Kush R Varshney, and **Yiming Ying**. Minimax AUC Fairness: Efficient Algorithm with Provable Convergence. *The AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
51. Zhenhuan Yang*, Yingqiang Ge, Congzhe Su, Dingxian Wang, Xiaoting Zhao, **Yiming Ying**. Fairness-aware Differentially Private Collaborative Filtering. *Companion Proceedings of the ACM Web Conference*, 2023.
52. Puyu Wang, Yunwen Lei, **Yiming Ying**†, and Ding-Xuan Zhou. Stability and Generalization for Markov Chain Stochastic Gradient Methods. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
53. Yunwen Lei, Rong Jin, and **Yiming Ying***. Stability and Generalization Analysis of Gradient Methods for Shallow Neural Networks. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
54. Zhenhuan Yang*, Shu Hu, Yunwen Lei, Kush R Vashney, Siwei Lyu, **Yiming Ying**†. Differentially private SGDA for minimax problems. *Uncertainty in Artificial Intelligence (UAI)*, 2022.
55. Yunwen Lei, Mingrui Liu, and **Yiming Ying**. Generalization Guarantee of SGD for Pairwise Learning. *Advances in Neural Information Processing Systems (NeurIPS)*, 2021.
56. Zhenhuan Yang*, Yunwen Lei, Puyu Wang, Tianbao Yang, and **Yiming Ying**†. Simple Stochastic and Online Gradient Descent Algorithms for Pairwise Learning. *Advances in Neural Information Processing Systems (NeurIPS)*, 2021.
57. Yunwen Lei, Zhenhuan Yang*, **Yiming Ying**†, and Tianbao Yang. Stability and Generalization of Stochastic Gradient Methods for Minimax Problems. *International Conference on Machine Learning (ICML)*, 2021. (long presentation with acceptance rate 3%).
58. Zhuoning Yuan, Zhishuai Guo, Yi Xu, **Yiming Ying**, and Tianbao Yang. Federated Deep AUC Maximization for Heterogeneous Data with a Constant Communication Complexity. *International Conference on Machine Learning (ICML)*, 2021.
59. Zhenhuan Yang*, Yunwen Lei, Siwei Lyu, and **Yiming Ying**†. Stability and differential privacy of stochastic gradient descent for pairwise learning with non-smooth loss. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2021.

60. Hitesh Sapkota, **Yiming Ying**, Feng Chen, and Qi Yu. Distributionally Robust Optimization for Deep Kernel Multiple Instance Learning. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2021.
61. Yunwen Lei and **Yiming Ying**. Sharper generalization bounds for learning with gradient-dominated objective functions. *International Conference on Learning Representations (ICLR)*, 2021.
62. Zhenhuan Yang*, Baojian Zhou* and **Yiming Ying**†. Stochastic hard thresholding algorithms for AUC maximization. *International Conference on Data Mining (ICDM)*, 2020.
63. Baojian Zhou, **Yiming Ying**, and Steve Skiena. Online AUC Optimization for Sparse High-Dimensional Datasets. *International Conference on Data Mining (ICDM)*, 2020.
64. Yunwen Lei and **Yiming Ying**†. Fine-grained analysis of stability and generalization for stochastic gradient decent. *International Conference on Machine Learning (ICML)*, 2020.
65. Mingrui Liu, Zhuoning Yuan, **Yiming Ying**, Tianbao Yang. Stochastic AUC Maximization with Deep Neural Networks. *International Conference on Learning Representations (ICLR), 2020.*
66. Shu Hu, **Yiming Ying**, Xin Wang, and Siwei Lyu. Learning by Minimizing the Sum of Ranked Range. *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
67. Boajian Zhou*, Feng Chen and **Yiming Ying**. Stochastic Iterative Hard Thresholding for Graph-structured Sparsity Optimization. *International Conference of Machine Learning (ICML)*, 2019.
68. Boajian Zhou*, Feng Chen and **Yiming Ying**. Dual Averaging Method for Online Graph-structured Sparsity. *Knowledge Discovery and Data Mining (KDD)*, 2019.
69. Michael Natole Jr*, **Yiming Ying**† and Siwei Lyu. Stochastic proximal algorithms for AUC maximization. *International Conference on Machine Learning (ICML)*, 2018.
70. Siwei Lyu and **Yiming Ying**. A univariate bound of area under ROC. *International Conference on Uncertainty in Artificial Intelligence (UAI)*, Montery Bay, CA, 2018
71. Yi Wei, Ming-Ching Chang, **Yiming Ying**, Ser Nam Lim, and Siwei Lyu. Explain black- box image classifications using superpixel-based interpretation. *International Conference on Pattern Recognition (ICPR)*, Beijing, China, 2018.
72. Yanbo Fan, Siwei Lyu, **Yiming Ying** and Baogang Hu. Learning with average top-k loss. *Advances in Neural Information Processing Systems (NIPS)*, 2017.
73. **Yiming Ying**†, Longyin Wen and Siwei Lyu. Stochastic online AUC maximization. *Advances in Neural Information Processing Systems (NIPS)*, 2016. (Full oral presentation)
74. Martin Boissier*, Siwei Lyu, **Yiming Ying**†, and Ding-Xuan Zhou. Fast convergence of online pairwise learning algorithms. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2016.
75. Xin Wang, Ming-Ching Chang, **Yiming Ying**, and Siwei Lyu. Co-Regularized PLSA for multi-modal learning. *The Thirtieth AAAI Conference on Artificial Intelligence (AAAI-16)*, 2016.
76. Julien Bohne, **Yiming Ying**, Stephane Gentric and Massimiliano Pontil. Large margin local metric learning. *European Conference on Computer Vision (ECCV)*, 2014.
77. Qiong Cao*, **Yiming Ying**† and Peng Li. Similarity metric learning for face recognition. *International Conference on Computer Vision (ICCV)*, 2013.
78. Qiong Cao*, **Yiming Ying**† and Peng Li. Distance metric learning revisited. *European Conference on Machine Learning (ECML)*, 2012.
79. **Yiming Ying**†, Colin Campbell and Mark Girolami. Analysis of SVM with indefinite kernels. *Advances in Neural Information Processing Systems (NIPS)*, 2009.
80. **Yiming Ying**†, Kaizhu Huang and Colin Campbell. Sparse metric learning via smooth optimisation. *Advances in Neural Information Processing Systems (NIPS)*, 2009.

81. Kaizhu Huang, **Yiming Ying** and Colin Campbell. GSML: A unified framework for sparse metric learning. *IEEE International Conference on Data Mining (ICDM)*, 2009.
82. **Yiming Ying**†, Colin Campbell, Theodoros Damoulas, and Mark Girolami. Class prediction from disparate biological data sources using an iterative multi-kernel algorithm. *Conference of Pattern Recognition in Bioinformatics (PRIB), 2009; Lecture Notes in Bioinformatics (LNIB)* 5780: 427–438, 2009.
83. **Yiming Ying**† and Colin Campbell. Generalization bounds for learning the kernel. *Proceedings of 22nd Annual Conference on Learning Theory* (COLT), 2009.
84. Peng Li, **Yiming Ying**†, and Colin Campbell. A variational approach to semi-supervised clustering. *European Symposium on Artificial Neural Networks (ESANN)*, 2009.
85. **Yiming Ying**† and Colin Campbell. Learning coordinate gradients with multi-task kernels. *Proceedings of 21st Annual Conference on Learning Theory* (COLT), 2008.
86. **Yiming Ying**†, Peng Li, and Colin Campbell. A marginalized variational Bayesian approach to the analysis of array data. *BMC proceedings for Conference of MLSB*, 2008.
87. Theodoros Damoulas, **Yiming Ying**, Mark Girolami, and Colin Campbell. Inferring sparse kernel combinations and relevance vectors: an application to subcellular localization of proteins. *Proceedings of International Conference of Machine Learning and Applications (ICMLA)*, 2008.
88. Andreas Argyriou, Charles A. Micchelli, Massimiliano Pontil, and **Yiming Ying**. A spectral regularization framework for multi-task structure learning†. *Advances in Neural Information Processing Systems (NIPS)*, 2007.

Professional Services

Journal Editor

- Action Editor for Transcations on Machine Learning Research (TMLR) (12/2021-present)
- Managing Editor for Mathematical Foundation of Computing (12/2018 - present)
- Associate Editor for Neurocomputing (2016-present)
- Associate Editor for Mathematics of Computation and Data Science (specialty section of Frontiers in Applied Mathematics and Statistics) (2016-present)
- Guest editor for the special issue on "Mathematics of Big Data: Deep Learning, Approximation and Optimization" for Analysis and Applications (2019)
- Guest editor (with Ding-Xuan Zhou and Qiang Wu) for the special issue on "Learning Theory" for Abstract and Applied Analysis (2013)
- Special issue editor (with Zhiyuan Chen, Jianwu Wang and Feng Chen) of the the special issue for the third IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD) for the journal of Big Data Research, Los Angles, CA (12/2019)

Grant Review

- Israel Science Foundation (2021)
- Panelist for National Science Foundation (2021, 2022, 2023)
- Grant reviewer for EPSRC UK (2013, 2015, 2020) and UK Research Innovation (UKRI) Future Leaders Fellowship Grant (2020)
- Research Foundation - Flanders (FWO) Belgium (2013, 2015, 2018)
- Research Grants Council (RGC) in Hong Kong (2015-2021)

- Research Council Member for Natural Sciences and Engineering at the Academy of Finland in the area of Applied Mathematics, (01/2011)

Conference Committee/Reviewer/Organizer

- Senior program committee or Area Chair for AISTATS (2016,2022), NeurIPS (2021,2022), and IJCAI (2021)
- Organizer (with Francesco Orabona) of the minisymposium "Recent Advances in Machine Learning and Optimization" at SIAM Conference on Mathematics of Data Science (9/2022)
- General Co-Chair for the International Conference on Ubiquitous Computing and Communications (IUCC-2021)
- Publication Co-Chair of the 4th IEEE International Conference on Data Science and Systems (DSS-2018)
- Publicity Co-Chair of the 15th IEEE International Conference on Computer and Information Technology (CIT-2015)
- Organizer (with Feng Chen) of the session "Recent Advances on Robust and Trustworthy Machine Learning" at IFORMS Annual Meeting (10/2021)
- Organizer (with Guohui Song) of the minisymposium "Recent Advances on Machine Learning and Optimization" at SIAM CSE (3/2021)
- Organizer (with Zhiyuan Chen, Jianwu Wang and Feng Chen) of the third IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD), Los Angles, CA (12/2019)
- Session organizer (with Prof Andreas Christmann) on "Machine Learning and Robustness" at the 4th international Conference on Econometrics and Statistics (EcoSta), Seoul, Korean (6/2020)
- Session organizer (with Prof Andreas Christmann) on "Recent Advances on Machine Learning" at the 3rd International Conference on Econometrics and Statistics (EcoSta), Taiwan (6/2019)
- Session organizer on "Statistical Machine Learning" at the 2nd International Conference on Econometrics and Statistics (EcoSta), Hong Kong, (6/2018)
- Organizer (with Zhiyuan Chen, Jianwu Wang and Feng Chen) of the third IEEE International Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD), Seattle, WA (12/2018)
- Reviewer or Committee member for NeurIPS (2009-2020), ICML (2017-2020), AAAI (2018-2020)

Invited Talks

- Invited speaker at the session "Machine learning and approximation theory", at the international Conference of Econometrics and Statistics (EcoSta), 6/2021
- Invited speaker at the Segment II "Mathematical and Statistical Principles of Machine Learning", the Eastern Sectional Meeting of the American Mathematical Society, Binghamton University, Binghamton, NY (10/2019)
- Invited speaker at the session "Modeling and optimization methods for machine learning" at the Institute for Operations Research and the Management Sciences (Informs) Annual Meeting, Seattle, WA (10/2019)

- Invited speaker at the session "Recent Advances in Convex and Non-Convex Optimization and Their Applications in Machine Learning" at the Sixth International Conference on Continuous Optimization (ICCOPT), Berlin (08/2019).
- Invited speaker at the session "Recent Progresses in Data Analysis" at SIAM CSE, Spokane, WA (02/2019)
- Invited speaker at the session "Machine Learning and Robustness" at CMStatistics, Pisa, Italy (12/2018)
- Invited speaker at the NII Shonan meeting-123: Data Dependent Dissimilarities, Tokyo, Japan (10/2018)
- Invited speaker at the DIMACS workshop on optimization in machine learning at Lehigh University, USA (8/2018)
- Invited speaker at the International Conference of Computational and Applied Harmonic Analysis, Nashville, USA (5/2018)
- Invited speaker at the International Conference of Computational and Applied Harmonic Analysis, Shanghai, China (5/2017)
- Invited speaker at the Oberwolfach workshop on Learning Theory and Approximation, Oberwolfach, Germany (07/2016)
- Invited speaker at the symposium of Frontiers of Statistics and Data Sciences, The Hong Kong Polytechnic University, Hong Kong (06/2016)
- Invited speaker at the International Workshop on Mathematical Aspects of Data Science, Fudan University, China (05/2016)
- Invited speaker at the Youth Statistician Forum: prospect and perspective in statistics and its application, Hong Kong polytechnic University (06/2015)
- Invited speaker at SIAM-SEAS Minisymposium on Statistical Learning Theory, University of Alabama at Birmingham, USA (03/2015)
- Invited speaker at the International Conference on Learning and Approximation, Fudan University (12/2014)
- Invited speaker at the Fourth International Conference on Computational Harmonic Analysis (ICCHA), Hong Kong (05/2011)

Teaching

Courses taught at the University of Sydney

- MATH3063: Nonlinear ODEs with Applications, (Semester 1) 2024.

Courses taught at UAlbany

- MAT214 Multivariable Calculus
- MAT311 Ordinary Differential Equation
- MAT593 Practical Machine Learning
- MAT591 Optimization and Nonlinear Programming
- MAT363 Statistics
- MAT587 Topics in Modern Mathematics
- MAT592 Machine Learning

Courses developed at UAlbany

- MAT591 Optimization and Nonlinear Programming (regular and online courses)
- MAT592 Machine Learning (regular and online courses)

- MAT593 Practical Machine Learning (regular course)

Courses taught at University of Exeter (UK)

Pattern Recognition (undergraduate), Software Engineering (undergraduate), Machine Learning and Optimization (graduate), Enterprise Computing (undergraduate), Frontiers of Computer Science (undergraduate)

Academic Supervision

Graduate Students Supervised

- 9/2022 -present: Ming Yang (PhD) at the Department of Mathematics and Statistics, SUNY Albany
- 09/2020 - present: Ruogu Wang (PhD) at the Department of Mathematics and Statistics, SUNY Albany (Co-supervising with Prof Yunlong Feng)
- 09/2016 - 08/2022: Zhenhuan (Neyo) Yang (PhD) at the Department of Mathematics and Statistics, SUNY Albany (fist job as a data scientist at Etsy)
- 09/2016 - 05/2020: Michael Natole (PhD) at the Department of Mathematics and Statistics, SUNY Albany (fist job as a data scientist at Regeneron).
- 11/2019 - 11/2020: Puyu Wang (Visiting Student) at SUNY Albany (first job as a Postdoc at City University of Hong Kong)
- 02/2017-02/2020: Baojian Zhou (PhD), SUNY Albany (Co-supervising with Prof Feng Chen from the Department of Computer Science; Baojian is doing research on machine learning in my group since 02/2017) and first job as a Postdoc at Stony Brook University
- 08/2018 - 2/2019: Wei Shen (Visiting Student) at SUNY Albany. Mr. Shen was supported by Hong Kong Baptist University.
- 09/2013 - 08/2016: Martin Boissier (PhD) at the Department of Mathematics, City University of Hong Kong (Co-supervising with Prof Ding-Xuan Zhou; now Lead AI Engineer at Ambi Labs (Hong Kong))
- 12/2011 -02/2015: Qiong Cao (PhD student) at the Department of Computer Science, University of Exeter (first job as Postdoc at the University of Oxford, UK)
- Master student supervision (2017-2020): In the course of Practical Machine Learning (MAT593) I teach every other semester, I have supervised dozens of master students in the Master Program of Data Science at math department; the main assignment in the course is the individual data science project which requires my close supervision through weekly meetings with individual students.

Postdoc and Visiting Scholars Supervised

- 9/2022-12/2022: Jiho Hong (Visiting student) at SUNY Albany from Department of Mathematical Sciences, Korea Advanced Institute of Science & Technology (KAIST)
- 11/2013-02/2014: Yunwen Lei (Visiting Student/Postdoc) at the Department of Computer Science, University of Exeter (now work as Humboldt Research Fellow)
- 02/2012 - 07/2013: Zheng-Chu Guo (Postdoc) at the Department of Computer Science, University of Exeter (first job as associate professor at Zhejiang University, China)
- 09/2017-03/2018: Min Han (Visiting Scholar) at SUNY Albany supported by the Chinese Scholarship Council (CSC)

- 01/2017-01/2018: Jia Cai (Visiting Scholar) at SUNY Albany supported by the Chinese Scholarship Council (CSC)
- 07/2016-06/2017: Yongli Xu (Visiting Scholar) at SUNY Albany supported by the Chinese Scholarship Council (CSC)
- 01/2016 - 12/2016: Min Xu (Visiting Scholar) at SUNY Albany supported by the Chinese Scholarship Council (CSC)
- 01/2016 -12/2016: Qin Fang (Visiting Scholar) at SUNY Albany supported by the Chinese Scholarship Council (CSC)

Student Awards

- Yunwen Lei (visiting student at University of Exeter): Humboldt Research Fellow at Technical University of Kaiserslautern (06/2019)
- Michael Natole (PhD student at UAlbany): Travel award ($\$2,500$) from the International Conference of Machine Learning (ICML), Stockholm, Sweden (2018) for the paper entitled "Michael Natole, Yiming Ying and Siwei Lyu. Stochastic Proximal Algorithms for AUC Maxiization, ICML 2018"
- Zachary Huang (high-school student at Albany Academies): the research work entitled "Zachary Huang and Yiming Ying: Automated Seizure Detection Tailored Towards Portable Patient Care Using A Novel, Computationally Efficient Method of Analysis" won the third prize on the 21st Greater Capital Region Science and Engineering Fair (2018); he was invited to attend the 68th Intel International Science and Engineering Fair (ISEF) in Pittsburgh (2018); Zach was selected to be one of the top 300 scholars in the 78th Regeneron Science Talent Search–the nation's oldest and most prestigious science and mathematics competition for high school seniors ($\$2,000$ to Zachary and $\$2,000$ to Albany Academies)

High-School Students Supervised

(03/2018- 01/2019): Zachary Huang from Albany Academies; his research topic is on machine learning methods for automatically identifying seizures in mice based on EEG data.

University and College Services

Services at UAlbany

- Search Committee Chair at the Department of Mathematics and Statistics, SUNY Albany (11/2022-present).
- Member of the Graduate Committee at the Department of Mathematics and Statistics, SUNY Albany (12/2019-4/2020).
- Faculty Search Committee at the Department of Mathematics and Statistics, SUNY Albany (07/2019-12/2019)
- Faculty Search Committee at the Department of Mathematics and Statistics, SUNY Albany (09/2018-03/2019)
- Tenure and Promotion Committee Member at the CAS college, SUNY Albany (9/2016-05/2019)
- Search Committee Member for the Director of the Institute for Advanced Data Analytics, SUNY Albany (01/2017-10/2017)
- Member for the Chair Searching Committee at the Department of Mathematics and Statistics, SUNY Albany (3/2018)

- Member of the Graduate Committee at the Department of Mathematics and Statistics, SUNY Albany (01/2015-05/2018).
- Chair of the Academic Support Committee, CAS Faculty Council at SUNY Albany (02/17-09/17)
- Committee member at Faculty Development Committee, CAS Faculty Council at SUNY Albany (2015-17)
- Representative to the CAS Faculty Council at SUNY Albany (2015-2017)

Services at University of Exeter (UK)

- Assessment officer at the Department of Mathematics and Computer Science, University of Exeter, UK (09/2014-12/2014)
- Postgraduate teaching assistant (PTA) coordinator at the Department of Mathematics and Computer science, University of Exeter, UK (09/2014-12/2014)
- Employability officer at the Department of Computer Science, University of Exeter, UK (2013-2014)
- Organizer of the computer science seminars, University of Exeter, UK (04/2011-09/2014)