Curriculum Vitae

Name: Dingxuan Zhou

Address:

School of Mathematics and Statistics

University of Sydney

Sydney NSW 2006, Australia

Telephone: (61) 2 9351 4533   Email: dingxuan.zhou@sydney.edu.au

Position: Professor and Head, School of Mathematics and Statistics

Personal Data: Born in 1967, in Shaoxing, Zhejiang, China

Male. Married. Two children. Citizen of Hong Kong SAR. Permanent resident of Australia

Education: Ph.D. (1991), B.Sc. (1988), Zhejiang University

Main Interests of Research:

Theory of Deep Learning, Neural Networks, Statistical Learning and Applications, Approximation Theory, Data Science, Wavelets

Honors:

- World's Top 2% Scientist, rated by Stanford University, 2021, 2022

- Highly-cited Researcher, Thomson Reuters, 2014, 15; Clarivate Analytics 2016, 17

- National Science Fund for Distinguished Young Scholars, NSF China, 2005

- Alexander von Humboldt Research Fellowship, Germany, 1993

Positions held:

October 1, 2022 - present: Head, School of Mathematics and Statistics

August 29, 2022 - present: Professor, University of Sydney

Sept 2009 - August 28, 2022:   Chair Professor, City University of Hong Kong (CityU)

August 2018 - August 28, 2022:   Associate Dean, School of Data Science, CityU

July 2019 - August 28, 2022: Director, Liu Bie Ju Centre for Mathematical Sciences
August 2006 - July 2012: Head, Department of Mathematics, CityU
September 2005 - August 2009: Professor, CityU
2001 - 2005: Associate Professor, CityU
1999 - 2000 : Assistant Professor, CityU
1996 - 1999: Research Assistant Professor, CityU
1995 - 1996: Postdoctoral Fellow and Instructor, University of Alberta, Canada
1993 - 1995: Alexander von Humboldt Research Fellow, Germany
1992 - 1993: Postdoctoral Fellow, Inst. Mathematics, Academia Sinica, Beijing

Selected Memberships of Editorial Boards of International Journals:

- Editor-in-Chief, Analysis and Applications, World Scientific Press, 2013-present

- Co-Editor-in-Chief, Mathematical Foundations of Computing, American Institute of Mathematical Sciences, 2019-present

- Advances in Computational Mathematics, Springer, 2006-2013

- Applied and Computational Harmonic Analysis, Elsevier, 2010-present

- Complex Analysis and Operator Theory, Birkhauser, 2007-present

- Journal of Approximation Theory, Elsevier, 2010-present

- Journal of Complexity, Elsevier, 2018-present

- Journal of Computational Analysis and Applications, Eudoxus, 1999-present

- Applied Mathematics-A Journal of Chinese Universities, Springer, 2012-present

- Journal of Mathematics, Hindawi, 2012-present

- Revue d'Analyse Numéique et de Théorie de l'Approximation (Journal of Numerical Analysis and Approximation Theory), Romanian Academy of Sciences, 2015-present

- Mathematics of Computation and Data Science, Frontiers, 2016-present

- Geometry, Imaging and Computing, International Press, 2018-present

- Communications on Pure and Applied Analysis, American Institute of Mathematical Sciences, 2018-present

- Econometrics and Statistics, Part B: Statistics, Elsevier, 2019-present

- Journal of Machine Learning Research (editorial board reviewer), 2020-present

Editor of Book Series:

- Editor, book series "Progress in Data Science", World Scientific Press, 2018-present

Research Grants:

- External Grants from Research Grants Council (RGC) of Hong Kong

  PI and sole investigator for each RGC grant (except the Germany/HK Scheme)

  1. General Research Fund # CityU 11308121, HK$598,015, June 2021, "Theory of deep learning: from CNNs to RNNs"

  2. Germany/Hong Kong Joint Research Scheme # G-CityU101/20, HK$90,000, January 2021, "Theoretical Research on Deep Learning from a Mathematical Approximation Theory Viewpoint"

  3. NSFC/RGC Joint Research Scheme # N_CityU102/20, Research Grants Council of Hong Kong, HK$1,171,828, November 2020, "Approximation Analysis of Deep Learning and Related Topics"

  4. General Research Fund # CityU 11308020, HK$693,957, June 2020, "Analysis of deep CNNs induced by 2-D convolutions and related approximation theory problems"

  5. General Research Fund # CityU 11307319, HK$753,667, June 2019, "Learning theory of deep structured neural networks"

  6. General Research Fund # CityU 11306318, HK$684,585, June 2018, "Wavelet analysis of convolutional deep neural networks and approximation of radial functions"

  7. General Research Fund # CityU 11306617, HK$708,430, June 2017, "Approximation theory of structured deep nets and learning"

  8. General Research Fund # CityU 11338616, HK$727,647, June 2016, "Distributed learning and some partially online schemes: approximation theory viewpoints"

  9. General Research Fund # CityU 11303915, HK$933,362, June 2015, "Some new approximation theory problems arising from learning theory and related topics"

  10. NSFC/RGC Joint Research Scheme # N_CityU120/14, Research Grants Council of Hong Kong, HK$1,025,650, November 2014, "Approximation Analysis of Information Theoretic Learning and Ranking Type Learning Problems"

11. General Research Fund # CityU 11304114, HK$614,810, June 2014, "Approximation theory of incremental PCA and some kernel-based regularization schemes for learning"

12. General Research Fund # CityU 104113, HK$868,303, June 2013, "Approximation analysis of Kaczmarz type online schemes and Fourier analysis of some learning algorithms involving sample pair-based loss functions"

13. General Research Fund # CityU 104012, HK$1,025,000, June 2012, "Learning theory approach to minimum error entropy criteria and approximation analysis of some learning schemes"

14. General Research Fund # CityU 105011, HK$650,000, June 2011, "Sparse approximations produced by learning schemes"

15. General Research Fund # CityU 104710, HK$655,700, June 2010, "Approximation with reproducing kernel Hilbert spaces and error bounds for some learning schemes"

16. General Research Fund # CityU 103709, HK$590,000, June 2009, "Wavelet and approximation theory methods for mathematical analysis of learning"

17. General Research Fund # CityU 103508, HK$579,610, June 2008, "Wavelet structures and analysis of some learning approximation schemes"

18. Competitive Earmarked Research Grant # CityU 104007, HK$516,600, June 2007, "Scaling Operators in Wavelet Approximation and Related Topics"

19. Competitive Earmarked Research Grant # CityU 103206, HK$250,000, June 2006, "Approximation Theory Approach to Online Learning and Variable Selection"

20. Competitive Earmarked Research Grant # CityU 103405, HK$308,000, June 2005, "Regularization and Approximation in Learning Theory"

21. Competitive Earmarked Research Grant # CityU 103704, HK$233,000, June 2004, "Approximation analysis of SVM learning schemes"

22. Competitive Earmarked Research Grant # CityU 103303, HK$486,000, June 2003, "Multivariate approximation and learning theory"

23. Competitive Earmarked Research Grant # CityU 1087/02P, HK$350,000, June 2002, "Approximation theory methods for reproducing kernel Hilbert spaces"

24. Competitive Earmarked Research Grant # CityU 1144/01P, HK$400,157, June 2001, "Refinement equations with nonnegative coefficients and two-scale homogeneous functions"

25. Competitive Earmarked Research Grant # CityU 1065/00P, HK$379,817, June 2000, "Some topics in wavelets concerning matrix products"

26. Competitive Earmarked Research Grant # CityU 1077/99P, HK$405,000, June 1999, "The structure and approximation of refinable functions"

27. Competitive Earmarked Research Grant # CityU 1046/98P, HK$435,000, June 1998, "Matrix refinement equations and subdivision operators for multiple wavelets"

28. Competitive Earmarked Research Grant # CityU 1067/97P, HK$416,000, June 1997, "Multiple refinable functions and wavelets with applications"

- Other Selected External Grants

  1. Collaborative Research Fund (CRF) 2021/22 [Project No # C1013-21GF] as Co-PI, Research Grants Council of Hong Kong, HK$1,500,000, February 2022–January 2023, "Theoretical Study and Applications of Deep Neural Networks"

  2. InnoHK project as Head of Division of Methodology Development, ITC HK, HK$ 272,000,000, October 2020–September 2025, "Laboratory for AI-Powered Financial Technologies"

  3. National Science Fund for Distinguished Young Scholars [Project No. 10529101] as PI, NSF of China, RMB400,000, January 2006–December 2008, based at Fudan University, "Learning theory, radial basis functions, and reproducing kernel Hilbert spaces"

- 14 Internal Grants from City University of Hong Kong

Supervising Research Students:

- Research Students Graduated

  1. MPhil student Hoi Ling CHEUNG, April, 2000 - March 2002 (Lecturer, Hong Kong Institute of Vocational Education)

  2. Ph.D. Student Qiang WU, March 2002–August 2005 (Professor, Middle Tennessee State University)

  3. Ph.D. Student Gui-Bo YE, Fudan University (jointly supervised with Zongmin Wu), September 2005–June 2007 (Lecturer, HKUST)

  4. MPhil student Xin GUO, September 2006–September 2008 (PhD study at CityU after graduation)

5. MPhil student Yulong ZHAO, September 2007–September 2009 (PhD study at CityU after graduation)

6. Ph.D. Student Daohong XIANG, January 2006–January 2009 (Professor, Zhejiang Normal University)

7. Ph.D. Student Ting HU, February 2007 - June 2009 (Professor, Xi'an Jiaotong University)

8. Ph.D. Student Hongyan WANG, September 2006 - August 2009 (Lecturer, Zhejiang Gongshang University, after graduation)

9. Ph.D. Student Jia CAI, September 2006 - August 2009 (Professor, Guangdong University of Business Studies)

10. Ph.D. Student Xiangjun ZHOU, September 2005 - July 2009 (Chief Data Scientist, ifchange.com, Shanghai)

11. Ph.D. Student Quanwu XIAO, September 2005 - July 2009 (Senior Director of Big Data Solutions, ctrip.com)

12. Ph.D. Student Zhiwei PAN, September 2005 - July 2009 (Senior Risk Manager, Bank of Communications, Shanghai)

13. Ph.D. Student Lei SHI, September 2006 - August 2010 (Professor, Fudan University)

14. Ph.D. Student Cheng WANG, September 2006 - August 2010 (Associate Professor, Huizhou University)

15. Ph.D. Student Shaogao LV, September 2007–July 2011 (Professor, Nanjing Audit University)

16. Ph.D. Student Zhengchu GUO, October 2007–August 2011 (Professor, Zhejiang University)

17. Ph.D. Student Xin GUO, September 2008 - August 2011 (Senior Lecturer, University of Queensland)

18. Ph.D. Student Yunlong FENG, September 2008–July 2012 (Tenure-track Assistant Professor, State University of New York at Albany)

19. Ph.D. Student Yulong ZHAO, Sept 2009 - March 2013 (Senior Data Scientist, FDT AI, Hong Kong, after graduation)

20. Ph.D. Student Jun FAN, Sept 2009 - August 2013 (Associate Professor, Hong Kong Baptist University)

21. Ph.D. student Martin Boissier, Sept 2013 - August 2016 (Machine Learning Engineer, Ambi Labs, Hong Kong)

22. Ph.D. student Bo ZHANG, Sept 2014 - December 2017 (postdoc at Hong Kong Baptist University, after graduation)

23. Ph.D. student Xiaming CHEN, Sept 2015 - August 2018 (Lecturer, Shantou University)

24. Ph.D. Student Zhiying Fang, Sept 2016 - July 2020 (postdoc at CUHK Shenzhen and Purdue University, after graduation)

25. Ph.D. Student Tong Mao, Sept 2018 - July 2022 (Postdoc, Claremont Graduate University)

26. Ph.D. Student Zhongjie SHI, Sept 2018 - July 2022 (Postdoc, KU Leuven)

- Research Student Transferring Away

    1. Ph.D. Student Houping XIAO, January 2012 - July 2013 (Tenure-track Assistant Professor, Georgia State University)

- Co-supervising Current Research Students at City University of Hong Kong

    1. Ph.D. Student Shuo Huang, September 2019 -

    2. Ph.D. Student Linhao Song, September 2019 -

    3. Ph.D. Student Zihan Zhang, September 2020 -

    4. Ph.D. Student Ziru Liu, September 2020 -

    5. Ph.D. Student Junyu Zhou, September 2020 -

    6. Ph.D. Student Langming Liu, September 2020 -

    7. Ph.D. Student Peilin Liu, September 2021 -

    8. Ph.D. Student Yuqin Liu, September 2021 -

    9. Ph.D. Student Xiao Han, September 2021 -

    10. Ph.D. student Zhenyu Yang, September 2022 -

    11. Ph.D. student Nath Tepakbong Tematio, September 2022 -

Selected Professional Service Activities:

- Research Fellow, Statistical and Applied Mathematical Sciences Institute (SAMSI), January 14-May 13, 2021

- Panel Member of the Physical Sciences Panel of the Research Grants Council (RGC) of Hong Kong, November 2012-October 2018

- Vice-President, Hong Kong Math Society, 2012-16

- Member, SIAM, 2018 - present

- Visiting Chair Professor, Shanghai Jiaotong University, 2016-2018 (outside practice approved by CityU for one month per year)

- Jianhu Chair Professor, University of Shaoxing, Sept 2019-Aug 2022 (outside practice approved by CityU)

- Organizing committee member of many international conferences

- Plenary or invited speaker of many international conferences

- External Examiner of thesis, review of appointment or research proposals

- Reviewer or program committee member for top tier machine learning conferences: NeurIPS, ICML, ICLR, AISTATS, IJCAI, AAAI

Selected Campus Service at CityU:

- Head, Department of Mathematics, and Ex-officio Member of some committees (August 06–July 2012)

- Programme Leader, MSc Mathematics for Finance and Actuarial Science (2007–2013)

- Chairman, some Student Discipline Panels, 2008, 2010

- Member, Search Group and Selection Committee for Appointment of Dean of School of Energy and Environment, 2009

- Member, Personnel and Promotion Review Committee for Schools and Centres for 2011-12, 2012-13, 2013-14, 2014-15, 2015-16 Exercises

- Member, Academic Conduct Committee, 2013-15

- Chairman, Programme Validation Panel, Master of Architecture, 2014

- Member, College Advisory Group on Grant Applications, College of Science and Engineering, 2015-18

- Chairman, Personnel and Promotion Review Committee for Schools and Centres for 2016-17 Exercise

- Member, Search Committee for Head of Department of Architecture and Civil Engineering, 2016-17

- Member, Special Committee for Re-appointment of Dean of School of Law, 2017

- Member, Central Committee for the Performance-based Pay Review Scheme for Academic Faculty, Academic & Teaching Staff, 2017-21

- Member, Search Committee for Appointment of Head of Department of Mathematics, 2017-18

- Member, Search Committee for Appointment of Dean of College of Science, 2018

- Member, Planning Committee for the Establishment of School of Data Science, 2017-18

- Member, Interdisciplinary Recruitment Committee, School of Data Science, 2018

- Chairman, Working Group on reviewing and designing TPg Programmes in Data Science, School of Data Science, 2018

- Associate Dean, School of Data Science, August 2018-August 2022

- Chair, Graduate Studies Committee, School of Data Science, 2018-20

- Chair, School Academic Conduct Committee, 2018-22

- Chair, School Validation and Monitoring Committee, 2018–22

- Chair, School Joint Staff and Undergraduate Consultative Committee, 2018–22

- Chair, School Research Degree Admission Committee, 2018-20

- Member, Board of Graduate Studies, 2018-20

- Member, University Admissions Committee, 2018-22

- Member, University Research Committee, 2018-20

- Member, School Staffing Committee, School of Data Science, September 2018–22

- Member, School Performance Assessment Committee, September 2018-22

- Member, Campus Space and Accommodation Sub-Committee, June 2019-June 2021

- Chair, School Laboratory Committee, School of Data Science, 2019-22

- Working Group for the Collaboration Framework between CityU and Eligible Participants of Innovation & Technology Commission's Research Talent Hub, 2021–22

- Member, Working Group on Strategic Research, CityU, April 2021–22

List of Publications

- **Books:**

1. D. X. Zhou (editor), Wavelet Analysis: Twenty Years' Developments, World Scientific Press, 2002.

2. F. Cucker and D. X. Zhou, Learning Theory: An Approximation Theory Viewpoint, Cambridge University Press, 2007.

3. D. Dai, H. H. Dai, T. Tang, and D. X. Zhou (editors), The Collected Works of Roderick S. C. Wong, Volumes 1, 2, 3, World Scientific Press, 2016.

4. I. Pesenson, Q. Thong Le Gia, H. Mhaskar, and D. X. Zhou (editors), Frames and Other Bases in Abstract and Function Spaces, Novel Methods in Harmonic Analysis, Volume 1, Birkhäuser, 2017.

5. I. Pesenson, Q. Thong Le Gia, H. Mhaskar, and D. X. Zhou (editors), Recent Applications of Harmonic Analysis to Function Spaces, Differential Equations, and Data Science, Novel Methods in Harmonic Analysis, Volume 2, Birkhäuser, 2017.

6. (Invited Book Chapter) D. X. Zhou, Machine Learning Algorithms, in Encyclopedia of Applied and Computational Mathematics, edited by B. Engquist, Springer-Verlag, Berlin, Heidelberg, 2015, pp. 839–841.

- **Research Papers:**

1. H. Feng, S. Huang, and D. X. Zhou, Generalization analysis of CNNs for classification on spheres, IEEE Transactions on Neural Networks and Learning Systems, in press.

2. S. Huang, J. Y. Zhou, H. Feng, and D. X. Zhou, Generalization analysis of pairwise learning for ranking with deep neural networks, Neural Computation, in press.

3. T. Mao, Z. J. Shi, and D. X. Zhou, Approximating functions with multi-features by deep convolutional neural networks, Anal. Appl. **21** (2023), 93–125.

4. X. Guo, J. H. Lin, and D. X. Zhou, Convergence of the randomized Kaczmarz algorithm in Hilbert spaces, Applied and Computational Harmonic Analysis **61** (2022), 288–318.

5. Z. Han, S. Q. Yu, S. B. Lin, and D. X. Zhou, Depth selection for deep ReLU nets in feature extraction and generalization, IEEE Trans. Pattern Anal. Machine Intelligence **44**: 4 (2022), 1853–1868.

6. C. K. Chui, S. B. Lin, B. Zhang, and D. X. Zhou, Realization of spatial sparseness by deep ReLU nets with massive data, IEEE Transactions on Neural Networks and Learning Systems **33**:1 (2022), 229–243.

7. J. S. Zeng, W. Yin, and D. X. Zhou, Moreau envelope augmented Lagrangian method for nonconvex optimization with linear constraints, Journal of Scientific Computing (2022) **91**:61.

8. S. B. Lin, K. D. Wang, Y. Wang, and D. X. Zhou, Universal consistency of deep convolutional neural networks, IEEE Trans. Inform. Theory **68**:7 (2022), 4610–4617.

9. T. Mao and D. X. Zhou, Approximation of functions from Korobov spaces by deep convolutional neural networks, Advances in Computational Mathematics (2022) 48:84 https://doi.org/10.1007/s10444-022-09991-x

10. P. Y. Wang, Y. W. Lei, Y. Ying, and D. X. Zhou, Stability and generalization for Markov Chain stochastic gradient methods, NeurIPS 2022.

11. J. S. Zeng, Y. D. Xie, X. L. Yu, J. Lee, and D. X. Zhou, Enhancing automatic readability assessment with pre-training and soft labels for ordinal regression, Findings of EMNLP 2022 (2022 Conference on Empirical Methods in Natural Language Processing).

12. H. Feng, S. Z. Hou, L. Y. Wei, and D. X. Zhou, CNN models for readability of Chinese texts, Mathematical Foundatinos of Computing **5** (2022), 351–362.

13. J. S. Zeng, S. B. Lin, Y. Yao, and D. X. Zhou, On ADMM in deep learning: convergence and saturation-avoidance, Journal of Machine Learning Research **22** (2021), 1-67.

14. S. B. Lin, Y. G. Wang, and D. X. Zhou, Distributed filtered hyperinterpolation for noisy data on the sphere, SIAM J. Numer. Anal. **59** (2021), 634–659.

15. T. Hu and D. X. Zhou, Distributed regularized least squares with flexible Gaussian kernels, Appl. Comput. Harmonic Anal. **53** (2021), 349–377.

16. T. Mao, Z. J. Shi, and D. X. Zhou, Theory of Deep Convolutional Neural Networks III: Approximating radial functions, Neural Networks **144** (2021), 778–790.

17. Z. Yu, D. Ho, Z. J. Shi, and D. X. Zhou, Robust kernel-based distribution regression, Inverse Problems **37** (2021) 105014 (34pp).

18. T. Hu, Q. Wu and D. X. Zhou, Kernel gradient descent algorithm for information theoretic learning, J. Approx. Theory **263** (2021), 105518.

19. Y. Cao, Z. Y. Fang, Y. Wu, D. X. Zhou, and Q. Q. Gu, Towards understanding the spectral bias of deep learning, IJCAI 2021.

20. D. X. Zhou, Deep convolutional neural networks, Wiley Encyclopedia of Electrical and Electronics Engineering, J. Webster (ed.), 2021. DOI: 10.1002/047134608X.W8424 (invited article)

21. D. X. Zhou, Universality of deep convolutional neural networks, Applied and Computational Harmonic Analysis **48** (2020), 787-794.

22. D. X. Zhou, Theory of deep convolutional neural networks: Downsampling, Neural Networks **124** (2020), 319-327.

23. Z. Y. Fang, H. Feng, S. Huang, and D. X. Zhou, Theory of deep convolutional neural networks II: Spherical analysis, Neural Networks **131** (2020), 154-162.

24. Y. W. Lei and D. X. Zhou, Convergence of online mirror descent, Applied and Computational Harmonic Analysis **48** (2020), 343–373.

25. S. B. Lin, D. Wang, and D. X. Zhou, Distributed kernel ridge regression with communications, Journal of Machine Learning Research **21** (2020), 1-38.

26. T. Hu, Q. Wu and D. X. Zhou, Distributed gradient descent algorithm for minimum error entropy principle, Appl. Comput. Harmonic Anal. **49** (2020), 229-256.

27. Z. Y. Fang, Z. C. Guo, and D. X. Zhou, Optimal learning rates for distribution regression, Journal of Complexity **56** (2020), 101426.

28. C. K. Chui, S. B. Lin, and D. X. Zhou, Deep neural networks for rotation-invariance approximation and learning, Analysis and Applications **17** (2019), 737–772.

29. Y. W. Lei, U. Dogan, D. X. Zhou, and M. Kloft, Data-dependent generalization bounds for multi-class classification, IEEE Transactions on Information Theory **65** (2019), 2995-3021.

30. S. B. Lin, Y. W. Lei, and D. X. Zhou, Boosted kernel ridge regression: optimal learning rates and early stopping, Journal of Machine Learning Research **20**(46):1-36, 2019.

31. Y. W. Lei, P. Yang, K. Tang, and D. X. Zhou, Optimal stochastic and online learning with individual iterates, NeurIPS 2019.

32. C. K. Chui, S. B. Lin, and D. X. Zhou, Deep net tree structure for balance of capacity and approximation ability, Frontiers in Applied Mathematics and Statistics 5:46 (2019). doi: 10.3389/fams.2019.00046

33. Y. W. Lei and D. X. Zhou, Analysis of Singular Value Thresholding Algorithm for Matrix Completion, Journal of Fourier Analysis and Applications **25** (2019), 2957–2972.

34. J. H. Lin, L. Rosasco, S. Villa, and D. X. Zhou, Modified Fejér sequences and applications, Computational Optimization and Applications **71** (2018), 95–113.

35. D. X. Zhou, Deep distributed convolutional neural networks: Universality, Anal. Appl. **16** (2018), 895–919.

36. C. K. Chui, S. B. Lin, and D. X. Zhou, Construction of neural networks for realization of localized deep learning, Frontiers in Applied Mathematics and Statistics 4:14 (2018). doi: 10.3389/fams.2018.00014

37. A. Christmann, D. H. Xiang, and D. X. Zhou, Total stability of kernel methods, Neuro-computing **289** (2018), 101–118.

38. Y. W. Lei and D. X. Zhou, Learning theory of randomized Sparse Kaczmarz method, SIAM Journal on Imaging Sciences **11** (2018), 547–574.

39. S. B. Lin and D. X. Zhou, Optimal learning rates for kernel partial least squares, Journal of Fourier Analysis and Applications **24** (2018), 908–933.

40. S. B. Lin and D. X. Zhou, Distributed kernel gradient descent algorithms, Constructive Approximation **47** (2018), 249–276.

41. J. H. Lin and D. X. Zhou, Online learning algorithms can converge comparably fast as batch learning, IEEE Transactions on Neural Networks and Learning Systems **29** (2018), 2367–2378.

42. S. B. Lin, X. Guo, and D. X. Zhou, Distributed learning with regularized least squares, J. Machine Learning Research **18** (92): 1-31, 2017.

43. Z. C. Guo, S. B. Lin, and D. X. Zhou, Learning theory of distributed spectral algorithms, Inverse Problems **33** (2017) 074009 (29pp).

44. X. Y. Chang, S. B. Lin, and D. X. Zhou, Distributed semi-supervised learning with kernel ridge regression, J. Machine Learning Research **18** (46):1-22, 2017.

45. Y. Ying and D. X. Zhou, Unregularized online learning algorithms with general loss functions, Appl. Comput. Harmonic Anal. **42** (2017), 224–244.

46. Z. C. Guo, Y. Ying, and D. X. Zhou, Online regularized learning with pairwise loss functions, Advances in Computational Mathematics **43** (2017), 127–150.

47. J. H. Lin, Y. W. Lei, B. Zhang, and D. X. Zhou, Online pairwise learning algorithms with convex loss functions, Information Sciences **406-407** (2017), 57–70.

48. Z. C. Guo, D. H. Xiang, X. Guo, and D. X. Zhou, Thresholded spectral algorithms for sparse approximations, Anal. Appl. **15** (2017), 433–455.

49. Y. W. Lei and D. X. Zhou, Analysis of online composite mirror descent algorithm, Neural Computation **29** (2017), 825–860.

50. B. Z. Li, B. L. He, and D. X. Zhou, Approximation on variable exponent spaces by linear integral operators, J. Approx. Theory **223** (2017), 29–51.

51. J. H. Lin, L. Rosasco, and D. X. Zhou, Iterative regularization for learning with convex loss functions, J. Machine Learning Research **17** (77):1-38, 2016.

52. X. Guo, J. Fan, and Ding-Xuan Zhou, Sparsity and error analysis of empirical feature-based regularization schemes, J. Machine Learning Research **17**(89):1-34, 2016.

53. J. Fan, T. Hu, Q. Wu and Ding-Xuan Zhou, Consistency analysis of an empirical minimum error entropy algorithm, Appl. Comput. Harmonic Anal. **41** (2016), 164–189.

54. M. Yuan and D. X. Zhou, Minimax Optimal rates of estimation in high dimensional additive models, Annals of Statistics **44** (2016), 2564–2593.

55. Y. Ying and D. X. Zhou, Online pairwise learning algorithms, Neural Computation **28** (2016), 743–777.

56. T. Hu, Q. Wu and D. X. Zhou, Convergence of gradient descent for minimum error entropy principle in linear regression, IEEE Trans. Signal Processing **64** (2016), 6571–6579.

57. A. Christmann and D. X. Zhou, Learning rates for the risk of support vector machines in additive models, Anal. Appl. **14** (2016), 449–477.

58. C. A. Micchelli, M. Pontil, Q. Wu, and D. X. Zhou, Error bounds for learning the kernel, Anal. Appl. **14** (2016), 849–868.

59. A. Christmann and D. X. Zhou, On the robustness of regularized pairwise learning methods based on kernels, J. Complexity **37** (2016), 1–33.

60. J. H. Lin and D. X. Zhou, Learning theory of randomized Kaczmarz algorithm, J. Machine Learning Research **16** (2015), 3341–3365.

61. L. Q. Li and D. X. Zhou, Learning theory approach to a system identification problem involving atomic norm, J. Fourier Anal. Appl. **21** (2015), 734–753.

62. T. Hu, J. Fan, Q. Wu and D. X. Zhou, Regularization schemes for minimum error entropy principle, Anal. Appl. **13** (2015), 437–455.

63. D. X. Zhou, Approximation by positive linear operators on variable $L^{p(\cdot)}$ spaces, Journal of Applied Functional Analysis **9** (2014), 379–391.

64. B. Z. Li and D. X. Zhou, Analysis of approximation by linear operators on variable $L_\rho^{p(\cdot)}$ spaces, Abstract and Applied Analysis, Volume 2014 (2014), Article ID 454375, 10 pages.

65. A. Y. Chen, J. P. Li, Y. Q. Chen, and D. X. Zhou, Asymptotic behaviour of extinction probability of interacting branching of collision processes, Journal of Applied Probability **51** (2014), 219–234.

66. D. X. Zhou, Q. Wu, and Y. Ying, Learning theory, Abstract and Applied Analysis, Volume 2014, Article ID 138960, 2 pages. (editorial article)

67. D. X. Zhou, Density problem and approximation error in learning theory, Abstract and Applied Analysis, Volume 2013, Article ID 715683, 13 pages.

68. D. X. Zhou, On grouping effect of elastic net, Statistics and probability Letters **83** (2013), 2108–2112.

69. T. Hu, J. Fan, Q. Wu and D. X. Zhou, Learning theory approach to minimum error entropy criterion, J. Machine Learning Research **14** (2013), 377–397.

70. Z. C. Guo and D. X. Zhou, Concentration estimates for learning with unbounded sampling, Adv. Comput. Math. **38** (2013), 207–223.

71. H. Y. Wang, Q. W. Xiao, and D. X. Zhou, An approximation theory approach to learning with ℓ^1 regularization, J. Approx. Theory **167** (2013) 240–258.

72. H. Gonska, J. Prestin, G. Tachev, and D. X. Zhou, Simultaneous approximation by Bernstein operators in Hölder norms, Mathematische Nachrichten **286** (2012), 349-359.

73. W. Gao and D. X. Zhou, Convergence of spectral clustering with a general similarity function, Science China Mathematics **42** (2012), 985–994. (in Chinese)

74. X. Guo and D. X. Zhou, An empirical feature-based learning algorithm producing sparse approximations, Appl. Comput. Harmonic Anal. **32** (2012), 389-400.

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