Mingchen Ma

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EDUCATION

University of Wisconsin-Madison, Department of Computer Sciences Madison, WI, USA
Ph.D. Student, Computer Science, Advisor: Christos Tzamos, Ilias Diakonikolas *2021- present*

Nanjing University, Department of Mathematics Nanjing, Jiangsu, China
B.S., Major: Mathematics *2016- 2020*

RESEARCH INTEREST

Theoretical Foundation of Machine Learning
Recent Research Focus:
Interactive Learning (active learning, online learning and their applications)
Supervised Learning (designing efficient learning algorithms that are robust to noise)
Theoretical Foundation for Large Language Model

EXPERIENCE

Shanghai University of Finance and Economics, ITCS Yangpu, Shanghai, China
Visiting Student, Host: Nick Gravin, Zhihao Tang and Xiao Wang *2020- 2021*

PUBLICATIONS AND MANUSCRIPTS

(Author orders for all papers are alphabetical)

- Learning Intersections of Two Margin Halfspaces under Factorizable Distributions,

  with I.Diakonikolas, L. Ren, C.Tzamos,

  Proceedings of the 38th Annual Conference on Learning Theory (COLT 2025)

- Statistical Query Hardness of Multiclass Linear Classification with Random Classification Noise,

  with I.Diakonikolas, L. Ren, C.Tzamos,

  Proceedings of the 42th International Conference on Machine Learning (ICML 2025)

  (Selected for Oral Presentation)

- Active Learning of General Halfspaces: Label Queries vs Membership Queries,

  with I.Diakonikolas, D.Kane,

  Advances in Neural Information Processing Systems (NeurIPS 2024)

- Active Classification with Few Queries under Misspecification,

  with V.Kontonis, C. Tzamos,

  Advances in Neural Information Processing Systems (NeurIPS 2024)

  (Selected for Spotlight Presentation)

- Active Learning with Simple Questions,
  with V.Kontonis, C. Tzamos,
  Proceedings of the 37th Annual Conference on Learning Theory (COLT 2024)

- Fast Co-Training under Weak Dependence via Stream-Based Active Learning,
  with I.Diakonikolas, L. Ren, C.Tzamos,
  Proceedings of the 41th International Conference on Machine Learning (ICML 2024)
  (Selected for Oral Presentation)

- The Gain from Ordering for Online Learning,
  with V.Kontonis, C.Tzamos,
  Advances in Neural Information Processing Systems (NeurIPS 2023)

- Buying Information for Stochastic Optimization ,
  with C.Tzamos,
  Proceedings of the 40th International Conference on Machine Learning (ICML 2023)
  (Selected for Oral Presentation)

- Clustering with Queries under Semi-Random Noise,
  with A. Del Pia, C.Tzamos,
  Proceedings of the 35th Annual Conference on Learning Theory (COLT 2022)

- $k-$median: exact recovery in the extended stochastic ball model,
  with A. Del Pia,
  Mathematical Programming Series A 2022

- Proximity in Concave Integer Quadratic Programming,
  with A. Del Pia,
  Mathematical Programming Series A 2021

AWARDS AND HONORS

- NeurIPS Scholar Award, 2023, 2024
- Student Research Grants Competition (SRGC) Award, 2023
- UW Madison CS Departmental Research Fellowship, 2021
- Outstanding Graduate at Nanjing University, 2020
- Elite Program Scholarship, 2017-2018, 2018-2019
- People's Scholarship, 2018-2019
- Sumsung Scholarship, 2017-2018
- Outstanding Student at Nanjing University, 2017-2018

Talks

- SQ Hardness of Multiclass Linear Classification with Random Classification Noise, ICML 2025

- Learning Intersections of Two Margin Halfspaces under Factorizable Distributions, COLT,TTIC 2025

- Active Learning of General Halfspaces: Label Queries vs Membership Queries, SUFE ITCS,NJU AI 2024

- Active Learning with Simple Questions, COLT 2024

- Fast Co-Training under Weak Dependence via Stream-Based Active Learning, ICML 2024

- Buying Information for Stochastic Optimization, ICML 2023

- Clustering with Queries under Semi-Random Noise, COLT 2022

- Proximity in Concave Integer Quadratic Programming, MIP 2021, IPCO 2021, INFORMS Annual Meeting

Professional Activities

- Conference Reviewer: Conference on Learning Theory (COLT) 2025
  International Conference on Machine Learning (ICML) 2025,
  International Conference on Learning Representations (ICLR) 2025,
  Neural Information Processing Systems (NeurIPS) 2024, 2025
  Innovations in Theoretical Computer Science (ITCS) 2023, 2025,
  ACM Symposium on Theory of Computing (STOC) 2023

- Journal Reviewer:
  Mathematical Programming

Teaching

- CS 726 Nolinear Optimization I, Teaching Assistant, UW-Madison, Spring 2022

- CS 513 Numerical Linear Algebra, Teaching Assistant, UW-Madison, Spring 2024

Skills

- **Programming Languages**: C++, MATLAB, Python, Mathematica
- **Software**: LaTeX, Microsoft Office
- **Language**: Chinese, English