

Tian-Yi Zhou (she/her)

CONTACT INFORMATION	Main 317, 765 Ferst Drive Atlanta, GA 30318	tzhou306@gatech.edu https://tianyizhougt.github.io/
RESEARCH INTERESTS	Deep learning theory, statistical learning theory, approximation theory, anomaly detection, functional data analysis, computational social science	
EDUCATION	Georgia Institute of Technology , Atlanta, GA Ph.D. in Machine Learning , GPA: 4.00/4.00 August 2020 - June 2025 (expected) <ul style="list-style-type: none">• H. Milton Stewart School of Industrial and Systems Engineering (ISyE)• Advisor: Xiaoming Huo• Minor in Operations Research The University of Hong Kong , Hong Kong SAR Sep 2016 - June 2020 B.Sc. in Statistics , First Class Honors University of California, Los Angeles , Los Angeles, CA Jan 2019 - June 2019 Exchange Student, Major in Statistics	
PUBLICATIONS AND PREPRINTS	Optimal Classification-based Anomaly Detection by Neural Networks: Theory and Practice in Cybersecurity. (2024+) Tian-Yi Zhou*, Matthew Lau*, Jizhou Chen, Wenke Lee, Xiaoming Huo. Under review at Annals of Applied Statistics. Approximation of RKHS Functionals by Neural Networks. (2024+) Tian-Yi Zhou, Namjoon Suh, Guang Cheng, Xiaoming Huo. Under review at Journal of Machine Learning Research (JMLR). Classification of Unbounded Data generated by Gaussian Mixture Models via Deep ReLU Networks. (2024) Tian-Yi Zhou, Xiaoming Huo. Journal of Machine Learning Research (JMLR) 25(190): 1–54, 2024. <ul style="list-style-type: none">• ARC(Algorithms & Randomness Center)-ACO(Algorithms, Combinatorics, and Optimization) Fellowship, Georgia Tech (2023) Learning Ability of Interpolating Deep Convolutional Neural Network. (2024) Tian-yi Zhou, Xiaoming Huo. Applied and Computational Harmonic Analysis (ACHA) 68 (2024): 101582. <ul style="list-style-type: none">• Second Place, The 13th American Institute of Mathematical Sciences (AIMS) Student Paper Competition (2023)• Selected to present at Association for Women in Mathematics (AWM) Research Symposium (2023) (1 out of 35 female PhD students selected nationwide)• Runner-up, Alice and John Jarvis Ph.D. Student Paper Competition, Georgia Tech (2022) Approximation and nonparametric estimation of functions over high-dimensional spheres via deep ReLU networks. (2023) Namjoon Suh, Tian-Yi Zhou, Xiaoming Huo. ICLR 2023.	

Gone with the weed: incidents of adolescent marijuana use in the United States, 1976–2021.(2023)
Gu, Jiaxin, Xin Guo, Xiaoxi Liu, Yue Yuan, Yushu Zhu, Minheng Chen, **Tian-Yi Zhou**, Qiang Fu.
Annals of Epidemiology 88 (2023): 23-29.

Modified Poisson Regression Analysis of Grouped and Right-censored Counts. (2021)
Qiang Fu, **Tian-yi Zhou**, Xin Guo.
Journal of the Royal Statistical Society: Series A 184(4): 1347-1367.

HONORS AND AWARDS	🏆 Margaret and Stephen Kendrick Research Fellowship, Georgia Tech	2023-2024
	PhD mentoring service award, Georgia Tech	2023-2024
	Selected to present at Association for Women in Mathematics (AWM) Research Symposium	2023
	🏆 Second Place in Student Paper Competition, The 13th American Institute of Mathematical Science (AIMS) Conference	2023
	Selected Participant, FutureBAProf Workshop, Tippie College of Business, University of Iowa	2023
	🏆 ARC-ACO Fellowship, Georgia Tech	2023
	🏆 Runner-up, Alice and John Jarvis Ph.D. Student Paper Competition, Georgia Tech	2022
	Stewart Fellowship, Georgia Tech	2020-2021
	Overseas Research Fellowship, Columbia University (Supported by: Faculty of Science, The University of Hong Kong)	2019
	Wong Shek Yung Student Enrichment Award, The University of Hong Kong	2019
	Dean's Honors List, The University of Hong Kong	2016-2017, 2017-2018
	Dean's Honors List, University of California, Los Angeles	Spring 2019
TRAVEL AWARDS	Travel Award for attending "Statistics in the Age of AI" conference	2024
	SIAM Travel Award (Special W. Randolph Fund Recipient)	2024
	The 13th AIMS Conference Travel Award (Supported by NSF)	2023
	Graduate Student Travel Award, College of Engineering and Student Government Association, Georgia Tech	2023
RECENT INVITED TALKS	Joint Meeting of the New Zealand, Australian and American Mathematical Societies	
	Auckland, New Zealand	December 2024 (scheduled)
	Talk: "Optimal Unsupervised Anomaly Detection by Neural Networks: Theory and Practice in Cybersecurity"	
	Seminar at the Department of Mathematics	
	Universität Bayreuth, Bayreuth, Germany	November 2024 (scheduled)
	Talk: "Optimal Unsupervised Anomaly Detection by Neural Networks: Theory and Practice in Cybersecurity"	
	INFORMS Annual Meeting 2024	
	Seattle, WA	October 2024 (scheduled)
	Talk: "Classification of Unbounded Data by Gaussian Mixture Models via Deep ReLU Networks"	
	ML@GT Student Conference	
	Georgia Institute of Technology	August 2024

Talk: "Optimal Unsupervised Anomaly Detection by Neural Networks: Theory and Practice in Cybersecurity"

Statistics and Data Science Seminar

University of Sydney, Sydney, Australia

July 2024

Talk: "Optimal Unsupervised Anomaly Detection by Neural Networks: Theory and Practice in Cybersecurity"

ACTION AI Institute Annual Review and Knowledge Expo (Lightening talk & Poster)

UC Santa Barbara, Santa Barbara, California

June 2024

Talk: "Optimal Unsupervised Anomaly Detection by Neural Networks: Theory and Practice in Cybersecurity"

"Statistics in the Age of AI" conference (poster)

The George Washington University, Washington, DC

May 2024

Talk: "Classification of Unbounded Data generated by Gaussian Mixture Models via Deep ReLU Networks"

Analysis and Data Science Seminar

SUNY Albany, Albany, NY

April 2024

Talk: "Classification of Unbounded Data generated by Gaussian Mixture Models via Deep ReLU Networks"

Southeast Applied and Computational Mathematics Workshop

Georgia Institute of Technology

April 2024

Talk: "Approximation of RKHS Functionals by Neural Networks"

SIAM Conference on Parallel Processing for Scientific Computing (PP24)

Baltimore, MD

March 2024

Talk: "Classification of Unbounded Data generated by Gaussian Mixture Models via Deep ReLU Networks"

SIAM Seminar

Georgia Institute of Technology

October 2023

Talk: "Classification of Unbounded Data generated by Gaussian Mixture Models via Deep ReLU Networks"

Cornell Young Researchers Workshop 2023 (Poster)

Cornell University, Ithaca, NY

October 2023

Poster: "Learning Ability of Interpolating Deep Convolutional Neural Network"

The 2023 Association for Women in Mathematics (AWM) Research Symposium

Clark Atlanta University, Atlanta, GA

September 2023

Talk: "Learning Ability of Interpolating Deep Convolutional Neural Network"

Algorithms & Randomness Center (ARC) Colloquium

Georgia Institute of Technology

September 2023

Talk: "Classification of Unbounded Data by Gaussian Mixture Models via Deep ReLU Networks"

10th International Congress on Industrial and Applied Mathematics (ICIAM 2023)

Waseda University, Tokyo, Japan

August 2023

Talk: "Learning Ability of Interpolating Deep Convolutional Neural Network"

	The 13th American Institute of Mathematical Science (AIMS) Conference Wilmington, NC Talk: "Learning Ability of Interpolating Deep Convolutional Neural Network"	June 2023
TEACHING EXPERIENCE	Graduate Teaching Assistant , ISyE, Georgia Tech <i>ISyE/CEE 3770 Statistics and Applications</i> Undergraduate Teaching Assistant , Department of Statistics and Actuarial Science, The University of Hong Kong <i>STAT 2601 Statistics and Probability I</i> "Survival Cantonese" Tutor , Center of Development and Resources for Students, The University of Hong Kong <i>Conduct 1-to-1 Cantonese tutoring sessions for non-local students</i>	Fall 2020, Spring 2021 Spring 2020 2016-2018
PROFESSIONAL SERVICE	Reviewer: NeurIPS, ICLR, Bernoulli, Journal of Complexity, Journal of Approximation Theory Institutional Service: Co-organisator, ISyE Student Seminar, Georgia Tech Co-organisator, SIAM Seminar, Georgia Tech Secretary, SIAM Student Chapter, Georgia Tech Reviewer, President's Undergraduate Research Awards, Georgia Tech Co-organisator, "Machine Learning + Dynamics" Seminar, School of Mathematics, Georgia Tech Exam Writer and Grader, AP Statistics competition, Georgia Tech Ph.D. Mentor, ISyE Ph.D. peer mentoring program, Georgia Tech Outreach: Volunteer, Georgia Science Olympiad State Tournament, Atlanta, GA Exam Writer and Grader, AP Statistics competition, Georgia Tech	2024-2025 2023 2023, 2024 2023 2023 2022-2023, 2023-2024 2023 2023
PERSONAL INFORMATION	<ul style="list-style-type: none"> • Pronouns: she/her • Citizenship: Hong Kong SAR 	