

Yuqing Wang

686 Cherry St NW,
Atlanta, GA 30332-0160 USA
ywang3398@gatech.edu
<https://ywang3398.math.gatech.edu>

EDUCATION

Ph.D., Mathematics 2018-present
Georgia Institute of Technology
—Advisor: Prof. Molei Tao
Expected: May 2024

B.S., Mathematics, 2014-2018
Nankai University, China

PUBLICATIONS

Yuqing Wang, Zhenghao Xu, Tuo Zhao, Molei Tao. “Good regularity creates large learning rate implicit biases: edge of stability, balancing, and catapult”. Short version is accepted in *Mathematics of Modern Machine Learning*, NeurIPS 2023 Workshop; long version is a preprint on arXiv: 2310.17087.

Bo Yuan, Jiaojiao Fan, **Yuqing Wang**, Molei Tao, and Yongxin Chen. “Markov Chain Monte Carlo for Gaussian: A Linear Control Perspective”, in *IEEE Control Systems Letters*, vol. 7, pp. 2173-2178, 2023, doi: 10.1109/LCSYS.2023.3285140.

Lingkai Kong, **Yuqing Wang**, and Molei Tao. “Momentum Stiefel Optimizer, with Applications to Suitably-Orthogonal Attention, and Optimal Transport”. *International Conference on Learning Representations (2023)*.

Yuqing Wang, Minshuo Chen, Tuo Zhao and Molei Tao. “Large Learning Rate Tames Homogeneity: Convergence and Balancing Effect”. *International Conference on Learning Representations (2022)*.

Kaixuan Huang*, **Yuqing Wang***, Molei Tao, and Tuo Zhao. “Why Do Deep Residual Networks Generalize Better than Deep Feedforward Networks?—A Neural Tangent Kernel Perspective.” *Advances in neural information processing systems* 33 (2020): 2698-2709. (*: equal contribution)

TALKS

PDE seminar, Georgia Institute of Technology, December 5, 2023

What creates edge of stability, balancing, and catapult, ACO student seminar, Georgia Institute of Technology, October 27, 2023

Implicit bias of large learning rate, SIAM Conference on Applications of Dynamical Systems (DS23), Machine Learning for Dynamical Systems & Dynamical Systems for Machine Learning - Part I of III (MS143), Portland, Oregon, May 18, 2023

Implicit bias of large learning rate, Data Sciences Symposium, Spelman College, Feb 23, 2023

EXPERIENCES

Machine Learning Theory Summer School, Princeton University, June 26-30, 2023

HONERS

Rising star in data science, 2023

Rising star in EECS, 2023

Top graduate student, Department of Mathematics, Georgia Institute of Technology 2023

“Thank a teacher” award for MATH 2552 Differential equations, Georgia Institute of Technology Spring 2022

—in appreciation of teaching style and dedication to helping students learn in

SERVICE

Reviewer, NeurIPS 2022

Vice President for SIAM Student Chapter, Georgia Institute of Technology, Fall 2021
co-organizer of SIAM student seminar

TEACHING

Teaching Assistant in the School of Mathematics, Georgia Institute of Technology:
teach 4 hours of studios per week; hold 1 office hour per week for all math courses; manage about 70 students per semester

Fall 2018, Spring 2019, Fall 2019, Fall 2020, Spring 2021, Fall 2023
MATH 2552 Differential Equation

Spring 2020
MATH 2551 Multivariable Calculus

Summer 2019
MATH 2550 Introduction to Multivariable Calculus

Head Teaching Assistant in the School of Mathematics, Georgia Institute of Technology:
design worksheets used in studios (for around 20 TAs and 8 instructors); teach 2 hours of studios per week; hold 1 office hour per week for all math courses; manage about 35 students per semester

Spring 2022, Spring 2023
MATH 2552 Differential Equation