

# Weihang Xu

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## Research Interests

Deep learning theory, Representation learning, Optimization

## Education

- 2023 – Present     **University of Washington** – Seattle, United States  
                         **Paul G. Allen School of Computer Science & Engineering**  
                         Ph.D student  
                         Advisors: Simon S. Du, Maryam Fazel
- 2019 – 2023     **Tsinghua University** – Beijing, China  
                         **Institute for Interdisciplinary Information Sciences (Yao Class)**  
                         Bachelor of Engineering in Computer Science

## Publications

\* denotes equal contribution

**Toward Global Convergence of Gradient EM for Over-Parameterized Gaussian Mixture Models**

**Weihang Xu**, Maryam Fazel, Simon S. Du.

*In Conference on Neural Information Processing Systems (NeurIPS) 2024*

**Learning-based scheduling for information gathering with QoS constraints**

Qingsong Liu, **Weihang Xu**, Zhixuan Fang

*In IEEE International Conference on Computer Communications (INFOCOM) 2024*

**Over-Parameterization Exponentially Slows Down Gradient Descent for Learning a Single Neuron**

**Weihang Xu**, Simon S. Du

*In Conference on Learning Theory (COLT) 2023*

*Oral presentation at High-dimensional learning dynamics workshop at ICML 2023*

**Combinatorial Bandits with Linear Constraints: Beyond Knapsacks and Fairness**

Qingsong Liu\*, **Weihang Xu**\*, Siwei Wang, Zhixuan Fang.

*In Conference on Neural Information Processing Systems (NeurIPS) 2022.*

## Awards and Honors

- Sep. 2023     Paul G. Allen First-Year Graduate Student Fellowship — UW CSE

- Oct. 2022      Science and Technology Innovation Excellence Award — IIIS, Tsinghua University  
Academic Excellence Award — IIIS, Tsinghua University
- Nov. 2018      Chinese Mathematical Olympiad (CMO), Gold Medal (ranked 44<sup>th</sup> nationwide)

## Professional Activities

Conference reviewer: ALT 2024, 2025; COLT 2024, AISTATS 2025

UW CSE Ph.D. Admission Reviewer 2024

## Skills

Languages:      Chinese (Native), English (Fluent), German (Basic)

Programming:      Python (Pytorch), C/C++, Go, MATLAB, Verilog HDL, SQL