

# HEXU ZHAO

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## EDUCATION

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### Courant Institute, New York University

2023 – Present

Ph.D. in Machine Learning Systems, advised by Prof. Jinyang Li and Prof. Aurojit Panda

### Tsinghua University (Honored Yao Class)

2019 – 2023

Bachelor of Computer Science

## RESEARCH INTERESTS

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My research focuses on machine learning systems, with particular emphasis on systems for Gaussian Splatting. From a systems perspective, I leverage both distributed computation and GPU kernel optimization techniques to enable scalable training and rendering. From a workload perspective, I develop optimizations for both static and dynamic scene reconstruction at unprecedented scales.

## PEER-REVIEWED PUBLICATIONS

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### CLM: Removing the GPU Memory Barrier for 3D Gaussian Splatting

Hexu Zhao\*<sup>1</sup>, Xiwen Min\*, Xiaoteng Liu, Moonjun Gong, Yiming Li, Ang Li, Saining Xie, Jinyang Li, Aurojit Panda  
*ASPLoS 2026* (\* Equal Contribution)

### On Scaling Up 3D Gaussian Splatting Training

Hexu Zhao, Haoyang Weng, Daohan Lu, Ang Li, Jinyang Li, Aurojit Panda, Saining Xie

*ICLR 2025* (Top 0.5%) | [GitHub \(600+ stars\)](#)

### On Optimizing the Communication of Model Parallelism

Yonghao Zhuang\*, Hexu Zhao<sup>1</sup>, Lianmin Zheng, Zhuohan Li, Eric P. Xing, Qirong Ho, Joseph E. Gonzalez, Ion Stoica, Hao Zhang

*MLSys 2023* (\* Equal Contribution)

### Fully Hyperbolic Neural Networks

Weize Chen, Xu Han, Yankai Lin, Hexu Zhao, Zhiyuan Liu, Peng Li, Maosong Sun, Jie Zhou

*ACL 2022*

## MANUSCRIPTS UNDER REVIEW

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### Scaling Point-based Differentiable Rendering for Large Scale 3D Reconstruction

Hexu Zhao, Xiaoteng Liu, Xiwen Min, Jianhao Huang, Youming Deng, Yanfei Li, Ang Li, Jinyang Li, Aurojit Panda  
*Under Review*

### Development of a Doctor-in-the-loop Interpretation Framework for Insulin Titration in Diabetes

Haowei He\*, Zhen Ying\*, Biao Li, Yujuan Fan, Ping Wang, Jiaping Lu, Liming Wu, Hexu Zhao, Xiaoying Li, Yang Yuan, Ying Chen

*Under Review* (\* Equal Contribution)

## ACADEMIC SERVICE

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**Reviewer:** IEEE Transactions on Parallel and Distributed Systems (TPDS) 2024

## SELECTED EXPERIENCE

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### Research Scientist Intern, NVIDIA Spatial Intelligence Lab

May 2025 – Now

Advisors: Francis Williams, Ken Museth

- Developing scalable point transformer system for processing large-scale 3D perception and generation tasks.

**Research Scientist Intern, Microsoft DeepSpeed Team**

May 2024 – Aug 2024

Advisors: Guanhua Wang, Olatunji Ruwase

- Fused GEMM and collective communication into a single kernel for fine-grained overlapping at GPU warp-level using tile-based GEMM and GPU-initiated communication (IPC, NVSHMEM).
- Achieved up to 19% speedup over non-fused baseline after kernel-level optimization.

**Research Assistant, MBZUAI**

Feb 2022 – Oct 2022

Advisors: Prof. Eric Xing, Prof. Hao Zhang, and Lianmin Zheng

- Contributed to the `Alpa` distributed ML system project.
- Designed a faster cross-mesh resharding communication pattern, achieving 10x speedup in synthetic benchmarks and 10–50% throughput improvement for GPT-3 and U-Transformer training.

**Investment Analyst Intern, ZhenFund Venture Capital**

Jun 2021 – Sep 2021

Mentor: Emma Yin (Partner of ZhenFund)

- Performed due diligence and market analysis on early-stage AI startups to support investment decisions.
- Sourced founders from Tsinghua University research labs; organized entrepreneurship networking events to foster community engagement.

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**AWARDS AND HONORS****Henry Mitchell MacCracken PhD Fellowship, New York University**

Aug 2023 – Present

**Gold Medal, China National Olympiad in Informatics (NOI)**

Aug 2018

First NOI gold medalist from Zibo, Shandong (self-taught).

**Silver Medal, Asia-Pacific Informatics Olympiad (APIO)**

May 2018

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**ACADEMIC REFEREES**

Prof. Jinyang Li

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Prof. Aurojit Panda

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