

Hengjia Yu

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EDUCATION

University of California San Diego

Sep 2025 - Jun 2027 (expected)

M.S. in Computer Science

University of Illinois Urbana-Champaign

Aug 2021 - May 2025

B.S. in Computer Engineering

GPA: 3.84/4.00

Zhejiang University

Sep 2021 - Jun 2025

B.E. in Electronic and Computer Engineering

GPA: 3.89/4.00

PROJECTS

Tensor-centric library for Graph Neural Network via Segment Reduction

UC San Diego

Supervised by: Prof. Jishen Zhao

May 2024 - Dec 2024

- Implemented a specialized segment reduction library that achieved 2.5x speedup in Sparse Matrix Multiplication (SpMM) compared to PyG baseline.
- Developed compute-graph transformation passes to integrate with PyTorch's compiler framework.
- Introduced novel tensor primitive operations specifically optimized for irregular graph structures.

Superscalar Out-of-Order Processor - ECE411: Computer Organization & Design

UIUC

Advisor: Prof. Nam Sung Kim

Oct. 2024 - Dec. 2024

- Developed a 2-way superscalar Out-of-Order RISC-V processor with Explicit Register Renaming, distributed Reservation Stations, and an extensive bypass network,
- Ranked **1st** among 40 groups. Achieved IPC over 0.75 on coremark (best case 1.15)
- Implemented several performance optimizations including Age-ordered issue scheduling, Split load/store queues, GShare branch predictor.

Operating System Design - ECE391: Operating System

UIUC

Advisor: Prof. Steven S. Lumetta and Prof. Zbigniew T. Kalbarczyk

Oct 2023 - Dec 2023

- Developed a Linux-like operating system from scratch with a team of 4 (team leader).
- Ranked **#4** among 50+ groups.
- Implemented basic OS functionalities and advanced features like round-robin scheduler, signals, writable file-system, and text-editor.

System for Temporal Graph Neural Networks (TGNN)

UIUC

Supervised by: Prof. Charith Mendis

Dec 2023 - Jun 2024

- Participated in TGLite – a TGNN framework reduces model redundancy through caching and de-duplicating.
- Implemented an adaptive mini-batch generation strategy that improved training throughput by 3x.
- Implemented a locality-aware data placement strategy on for distributed training.

WORKING EXPERIENCES

Teaching Assistant

UIUC

ECE391: Operating Systems (SP24) & CS225: Data Structures (SP25)

AWARDS

Provincial Government Scholarship of Zhejiang Province, China

2022 & 2024

Top 3% students overall in Zhejiang province

Dean's List, Grainger College of Engineering, UIUC

2022 - 2025

SKILLS

- **Programming:** Python, C, C++, Cuda, Matlab, x86, RISC-V
- **Others:** Pytorch, Docker, HuggingFace, Git, LaTeX, Sphinx, Markdown, Colab