

Cheng Wan

Ph.D. Student

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School of Computer Science • Georgia Institute of Technology

EDUCATION

- **Georgia Institute of Technology** Atlanta, USA
Ph.D. Student in Computer Science Jan. 2023 – Present
 - Advisor: Yingyan Lin
 - Research Topic: Scalable training of large machine learning models
- **Rice University** Houston, USA
Ph.D. Student in Electrical and Computer Engineering Aug. 2018 – Dec. 2022
 - Advisor: Yingyan Lin
 - Research Topic: Scalable training of graph neural networks
 - Cumulative GPA: 3.9/4.0
 - Obtained a Master of Science degree under the guidance of Prof. Akane Sano
- **Shanghai Jiao Tong University** Shanghai, China
Bachelor of Engineering in Computer Science Sep. 2014 – Jul. 2018
 - Member of ACM Honors Class
 - Cumulative GPA: Overall 87.8/100 | Major 90.1/100

SELECTED PUBLICATION ([Full List](#))

(* equal contribution)

- C. Wan, D. Zheng, X. Song, and Y. Lin, Samsara: Improving the Convergence of GNN Training with Historical Aggregation and Balanced Neighbor Sampling, *Under Review*, 2023.
- C. Wan, Y. Zhao, and Y. Lin, MixGCN: Scalable GCN Training by Integrating Mixtures of Parallelism, Accelerators, and Experts Models, *Under Review*, 2023.
- S. Zhang, A. Sohrabizadeh, C. Wan, Z. Huang, Z. Hu, Y. Wang, Y. Lin, J. Cong, and Y. Sun, [A Survey on Graph Neural Network Acceleration: Algorithms, Systems, and Customized Hardware](#), *arXiv:2306.14052*, 2023.
- C. Wan*, Y. Li*, A. Li, N. S. Kim, and Y. Lin, [BNS-GCN: Efficient Full-Graph Training of Graph Convolutional Networks with Partition-Parallelism and Random Boundary Node Sampling](#), *Conference on Systems and Machine Learning Foundation (MLSys)*, 2022.
- C. Wan, Y. Li, C. R. Wolfe, A. Kyrillidis, N. S. Kim, and Y. Lin, [PipeGCN: Efficient Full-Graph Training of Graph Convolutional Networks with Pipelined Feature Communication](#), *International Conference on Learning Representations (ICLR)*, 2022.

RESEARCH EXPERIENCE

- **Efficient and Intelligent Computing Lab, Rice University → Georgia Tech** Jun. 2020 – present
Research Assistant
Adviser: Yingyan Lin
 - Improving the training efficiency and memory consumption of distributed training for graph neural networks, protein folding models, and mixture-of-expert models.
- **AGML Team, Amazon Web Service** Jun. 2022 – Aug. 2022, Jun. 2023 – Aug. 2023
Applied Scientist Intern
Adviser: Da Zheng
 - Studying distributed training of graph neural networks with external memory.

- **Amazon Web Services AI Shanghai Lablet** Oct. 2022 – Dec. 2022
Applied Scientist Intern
Adviser: Da Zheng and Mufei Li
 - Studying distributed training of graph neural networks with external memory.
- **Computational Wellbeing Group, Rice University** Dec. 2018 – Jun. 2020
Research Assistant
Adviser: Akane Sano
 - Applied machine learning and statistics to estimating human wellbeing indices using sensor data.
- **Knowledge Computing Group, Microsoft Research Asia** Aug. 2017 – Feb. 2018
Research Intern
Adviser: Chin-Yew Lin
 - Proposed models based on Skip-Gram and RNN for quantifying the life experience of a person. The model can estimate the probability of entering a specific stage based on previous experience.
- **Center for Brain-like Computing and Machine Intelligence, Shanghai Jiao Tong University** Jun. 2016 - Jun. 2018
Research Assistant
Adviser: Liqing Zhang
 - Applied and improved feature visualization methods in the field of computer vision to EEG data.

HONORS AND AWARDS

- NSF Student Travel Grant for MLSys 2022 2022
- The 2021-2022 REA Student Project Grant 2022
- IEEEExtreme Programming Competition 12.0 (Global: 10/4046, USA: 3/187) 2018
- Academic Excellence Scholarship of Shanghai Jiao Tong University (**Top 10%**) 2015, 2017
- **Gold Medal** in The 2015 ACM-ICPC China Shanghai Metropolitan Programming Contest (6/193) 2015
- **Honorable Mention** in The 2014 ACM-ICPC Asia Bangkok Regional Contest (7/102) 2014

TEACHING EXPERIENCE

- **Teaching Assistant at Georgia Institute of Technology** Spring 2024
CSE8803/CX4803 Machine Learning for Computational Biology
- **Teaching Assistant at Georgia Institute of Technology** Fall 2023
CS 7001: Introduction to Graduate Studies
- **Teaching Assistant at Rice University** Fall 2019, Fall 2021
DSCI 303: Machine Learning for Data Science
- **Part-Time Teacher at Shanghai Kongjiang High School** Fall 2016
Design and Analysis of Algorithms
- **Teaching Assistant at Shanghai Jiao Tong University** Fall 2015
CS 122: Introduction to Programming