Yue Dai

PhD Candidate · Department of Computer Science

University of Pittsburgh, Pittsburgh, PA 15260

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Education

University of Pittsburgh — *Pittsburgh, PA 15260*

PhD student in Computer Science — *2018/09 - present*

- Advisor: Dr. Youtao Zhang
- Co-Advisor: Dr. Xulong Tang

University of Maryland, College Park — *College Park, MD 20742*

MS of Science in Telecommunication — *2015/09 - 2017/05*

- Advisor: Dr. Michael Dellomo

Beihang University — *Beijing, China 100191*

Bachelor of Engineering in Electrical Engineering and Automation — *2010/09-2014/06*

Professional Experience

2021-2024	**Graduate Research Assistant**, Department of Computer Science, University of Pittsburgh
2018-2022	**Graduate Teaching Assistant**, Department of Computer Science, University of Pittsburgh
2016	**Graduate Research Assistant**, Department of Computer Science, University of Maryland
2014	**Intern**, Information Department of Research Center of Automatic Control and Logistic Technology Engineering, Beijing Research Institute of Automation for Machinery Industry
2014	**Undergraduate Research Assistant**, Department of Electrical Engineering and Automation, Beihang University
2013	**Intern**, Department of Automatic System of Simons (China) LTD., Beijing Branch

Publications

**the authors contribute equally*

Yue Dai, Xulong Tang, Youtao Zhang. 2025. Cascade: A Dependency-Aware Efficient Training Framework for Temporal Graph Neural Network. 2025 ACM International Conference on Architectural Support for Programming Languages and Operating Systems (**ASPLOS'2025**)

Li, Yingheng, **Yue Dai**, Aditya Pawar, Rongchao Dong, Jun Yang, Youtao Zhang, and Xulong Tang. 2025. Using Reinforcement Learning to Guide Graph State Generation for Photonic Quantum Computers. The 52nd International Symposium on Computer Architecture (**ISCA'2025**).

Yue Dai*, Liang Liu*, Xulong Tang, Youtao Zhang, Jun Yang. MemStranding: Adversarial attacks on temporal graph neural networks. (Under Review, The Thirteenth International Conference on Learning Representations (**ICML'2025 Under Review**))

Sheng Li, Qitao Tan, **Yue Dai**, Zhenglun Kong, Tianyu Wang, Jun Liu, Ao Li, Ninghao Liu, Yufei Ding, Xulong Tang, Geng Yuan. 2025. Mutual Effort for Efficiency: A Similarity-based Token Pruning for Vision Transformers in Self-Supervised Learning. The Thirteenth International Conference on Learning Representations (**ICLR'2025**)

Yue Dai, Youtao Zhang, Xulong Tang. 2023. CEGMA: Coordinated elastic graph matching acceleration for graph matching networks. 2023 IEEE International Symposium on High-Performance Computer Architecture (**HPCA'2023**).

Yue Dai, Xulong Tang, Youtao Zhang. 2023. FlexGM: An Adaptive Runtime System to Accelerate Graph Matching Networks on GPUs. 2023 IEEE 41st International Conference on Computer Design (**ICCD'2023**).

Yue Dai*, Sheng Li*, Geng Yuan*, Youtao Zhang, Yanzhi Wang, Xulong Tang. 2023. Smartfrz: An efficient training framework using attention-based layer freezing. The 11th International Conference on Learning Representations (**ICLR'2023 *Spotlight***).

Yue Dai, Xulong Tang, Youtao Zhang. 2022. An efficient segmented quantization for graph neural networks. CCF Transactions on High Performance Computing, 4(4), 461-473.(**THPC'2022**)

Zhexiong Liu*, Meiqi Guo*, **Yue Dai***, Diane Litman. 2022. ImageArg: A multi-modal tweet dataset for image persuasiveness mining. Proceedings of the 9th Workshop on Argument Mining, International Conference on Computational Linguistics at **COLING'2022**.

Sheng Li, Geng Yuan, Yawen Wu, **Yue Dai**, Chao Wu, Alex K Jones, Jingtong Hu, Yanzhi Wang, Xulong Tang. 2024. EdgeOL: Efficient in-situ Online Learning on Edge Devices. arXiv preprint arXiv:2401.16694.

Justin Brody, Samuel Barham, **Yue Dai**, Christopher Maxey, Donald Perlis, David Sekora, Jared Shamwell. 2016. Reasoning with grounded self-symbols for human-robot interaction. 2016 AAAI Fall Symposium Series

Xuejun Liu, Haiying Luan, Wenbai Chen, **Yue Dai**, Jiandong Liu, Bo Lan. 2014. Electrical nonlinearity pre-compensation for CO-OFDM system. Optik, 125(2), 616-619.

Research Experience

University of Pittsburgh *Pittsburgh, PA*

Research Assistant *Sep. 2018 - Present*

- Develop efficient training frameworks for general Deep Neural Networks and Temporal Graph Neural Networks
- Design software-hardware co-designs and GPU runtimes for inference acceleration on diverse deep graph learning models
- Develop adversarial attacks and defenses for deep graph learning models, with a focus on Temporal Graph Neural Networks
- Optimize deep graph learning models for accurate and scalable graph similarity computing

University of Maryland, College Park *College Park, MD*

Research Assistant *2015-2017*

- Develop metacognitive intelligent system based on active logic machine
- Design a reliable and secure distributed data management method for cloud services

Beihang University *Beijing, CHINA*

Undergraduate Research *2010-2014*

- Design sensor and control system for solar panel maintaining robots and devices

Beijing Research Institute of Automation for Machinery Industry *Beijing, CHINA*

Research Intern *2014*

- Develop an electrical nonlinearity pre-compensation method for optical orthogonal frequency-division multiplexing systems

Research Talks

2023 **FlexGM: An Adaptive Runtime System to Accelerate Graph Matching Networks on GPUs**, at ICCD 2023, Washinton DC, USA

2020 **Effectiveness of Video Encoder for Adversarial Videos Defense**, at University of Pittsburgh, Pittsburgh, PA.

Awards

2024 **CS 50 Outstanding Research Fellowship**, Department of Computer Science, University of Pittsburgh

2023 **Orrin E. and Margaret M. Taulbee Graduate Award**, Department of Computer Science, University of Pittsburgh

Mentoring

2021-Now	**Sheng Li**, PhD, University of Pittsburgh Efficient ML system. One paper published on **ICLR'23**, one submitted on **ICLR'25**
2022-Now	**Tianyu Wang**, PhD, University of Pittsburgh Efficient ML system. One paper submitted to **OSDI'25**
2022-Now	**Yingheng Li**, PhD, University of Pittsburgh RL for Quantum Compilation. One paper submitted to **ISCA'25**
2021-2022	**Austin Tercha**, Master of Science, University of Pittsburgh GNN Quantization.

Teaching Experience

Fall 2022	**CS2210 COMPILER DESIGN**, Teaching Assistant
Fall 2022	**CS1622 INTRODUCTION TO COMPILER DESIGN**, Teaching Assistant
Summer 2022	**CS0007 INTRODUCTION TO COMPUTER PROGRAMMING**, Teaching Assistant
Spring 2022	**CS1550 INTRODUCTION TO OPERATING SYSTEMS**, Teaching Assistant
Summer 2021	**CS1501 ALGORITHMS DATA STRUCTURES 2**, Teaching Assistant
FALL 2020	**CS2510 COMPUTER OPERATING SYSTEMS**, Teaching Assistant
FALL 2020	**CS1621 STRUCTURE PROGRAMMING LANGUAGES**, Teaching Assistant
Summer 2020	**CS0007 INTRODUCTION TO COMPUTER PROGRAMMING**, Teaching Assistant
Spring 2020	**CS1550 INTRODUCTION TO OPERATING SYSTEMS**, Teaching Assistant
Fall 2019	**CS0008 INTRODUCTION TO COMPUTER PROGRAMMING WITH PYTHON**, Teaching Assistant
Summer 2019	**CS0007 INTRODUCTION TO COMPUTER PROGRAMMING**, Teaching Assistant
Spring 2019	**CS1520 PROGRAMMING LANGUAGE FOR WEB APPLICATIONS**, Teaching Assistant
Fall 2018	**CS0449 INTRODUCTION TO SYSTEMS SOFTWARE**, Teaching Assistant

Professional Development

Artifact Evaluation Committee MICRO'22, ASPLOS'23, PLDI'23,

Peer Review ICLR'24