

Yue Dai

PHD CANDIDATE · DEPARTMENT OF COMPUTER SCIENCE

University of Pittsburgh, Pittsburgh, PA 15260

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Education

University of Pittsburgh

PHD STUDENT IN COMPUTER SCIENCE

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

Pittsburgh, PA 15260

2018/09 - present

University of Maryland, College Park

MS OF SCIENCE IN TELECOMMUNICATION

- Advisor: Dr. Michael Dellomo

College Park, MD 20742

2015/09 - 2017/05

Beihang University

BACHELOR OF ENGINEERING IN ELECTRICAL ENGINEERING AND AUTOMATION

Beijing, China 100191

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. 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**)

Sheng Li, Qitao Tan, **Yue Dai**, Zhenglun Kong, Tianyu Wang, Jun Liu, Ao Li, Ninghao Liu, Yufei Ding, Xulong Tang, Geng Yuan. 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'23**).

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'23**).

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'23 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'22**)

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'22**.

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 of 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