

## Education

- 2021 – 2026 **Ph.D. in Computer Science**, *Northeastern University, Boston, MA.*  
Advised by Hongyang R. Zhang
- 2016 – 2020 **B.Eng. in Computer Science**, *Shanghai Jiao Tong University, Shanghai, China.*  
Minor in Mathematics and Applied Mathematics

## Research Interests

I am interested in understanding knowledge transfer in modern machine learning models and building principled approaches towards generalizable multitask and transfer learning systems. In particular, I have been studying how to identify negative transfers for task selection in multitask learning and how to improve the generalization performance of fine-tuned deep neural networks.

## Publications and Preprints

- 2023 Graph Neural Networks for Road Safety Modeling: Datasets and Evaluations for Accident Analysis. Abhinav Nippani\*, **Dongyue Li\***, Haotian Ju, Haris N. Koutsopoulos, Hongyang R. Zhang  
Advances in Neural Information Processing Systems (NeurIPS), Datasets and Benchmarks Track
- 2023 Boosting Multitask Learning on Graphs through Higher-Order Task Affinities.  
**Dongyue Li**, Haotian Ju, Aneesh Sharma, Hongyang R. Zhang  
SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)
- 2023 Identification of Negative Transfers in Multitask Learning using Surrogate Models.  
**Dongyue Li**, Huy L. Nguyen, Hongyang R. Zhang  
Transactions on Machine Learning Research (TMLR), *Featured Certification*
- 2023 Generalization in Graph Neural Networks: Improved PAC-Bayesian Bounds on Graph Diffusion.  
Haotian Ju, **Dongyue Li**, Aneesh Sharma, Hongyang R. Zhang  
International Conference on Artificial Intelligence and Statistics (AISTATS)
- 2023 Optimal Intervention on Weighted Networks via Edge Centrality.  
**Dongyue Li**, Tina Eliassi-Rad, Hongyang R. Zhang  
SIAM International Conference on Data Mining (SDM)
- 2022 Robust Fine-Tuning of Deep Neural Networks with Hessian-based Generalization Guarantees.  
Haotian Ju\*, **Dongyue Li\***, Hongyang R. Zhang  
International Conference on Machine Learning (ICML)
- 2021 Improved Regularization and Robustness for Fine-tuning in Neural Networks.  
**Dongyue Li**, Hongyang R. Zhang  
Advances in Neural Information Processing Systems (NeurIPS)
- 2021 DTQAtten: Leveraging Dynamic Token-based Quantization for Efficient Attention Architecture.  
Tao Yang, **Dongyue Li**, Zhuoran Song, Yilong Zhao, Fangxin Liu, Zongwu Wang, Zhezhi He and Li Jiang  
Conference on Design Automation and Test in Europe (DATE)
- 2021 AdaptiveGCN: Efficient GCN Through Adaptively Sparsifying Graphs.  
**Dongyue Li\***, Tao Tang\*, Zhezhi He, Li Jiang  
Conference on Information and Knowledge Management (CIKM), Short paper

- 2021 PIMGCN: A ReRAM-Based Processing-in-Memory Accelerator for Graph Convolutional Network.  
Tao Yang, **Dongyue Li**, Yilong Zhao, Yibo Han, Zhezhi He, Li Jiang  
Design Automation Conference (DAC)
- 2021 ReRAM-Sharing: Fine-Grained Weight Sharing for ReRAM-Based Deep Neural Network Accelerator.  
**Dongyue Li**<sup>\*</sup>, Zhuoran Song<sup>\*</sup>, Zhezhi He, Li Jiang  
International Symposium on Circuits and Systems (ISCAS)

### Workshop Papers

- 2022 Task Modeling: Approximating Multitask Predictions for Cross-Task Transfer.  
**Dongyue Li**, Huy L. Nguyen, Hongyang R. Zhang  
NeurIPS Workshop on Distribution Shifts (DistShift), 2022  
Also presented in ICML Workshop on Principles of Distribution Shift (PODS)
- 2022 Optimal Intervention on Weighted Networks via Edge Centrality.  
**Dongyue Li**, Tina Eliassi-Rad, Hongyang R. Zhang  
KDD Workshop on Epidemiology meets Data Mining and Knowledge Discovery (epiDAMIK)
- 2022 Robust Fine-Tuning of Deep Neural Networks with Hessian-based Generalization Guarantees.  
Haotian Ju<sup>\*</sup>, **Dongyue Li**<sup>\*</sup>, Hongyang R. Zhang  
ICML Workshop on Updatable Machine Learning (UpML)
- 2021 Personalized and Environment-Aware Battery Prediction for Electric Vehicles.  
**Dongyue Li**<sup>\*</sup>, Guangyu Li<sup>\*</sup>, Bo Jiang<sup>\*</sup>, Zhengping Che, Yan Liu  
KDD Workshop on Mining and Learning from Time Series (MiLeTS)

*Remark: Asterisk indicates equal contribution*

### Honors and Scholarships

- 2023 Student Travel Award from SIGKDD Conference on Knowledge Discovery and Data Mining
- 2023 Featured Certification Award from Transaction on Machine Learning Research
- 2020 Excellent Undergraduate Thesis Award from Shanghai Jiao Tong University
- 2018 Merit Student of Shanghai Jiao Tong University
- 2016-2019 Academic Excellence Scholarship of Shanghai Jiao Tong University

### Work Experience

- 08/20–05/21 **AI/ML Researcher**, supervised by Li Jiang.  
*Shanghai Qi Zhi Institute, Shanghai, China*  
Designed efficient machine learning algorithms for accelerating deep neural networks, including convolutional neural networks, graph neural networks, and transformers.
- 06/19–09/19 **Research Intern**, supervised by Yan Liu.  
*Didi Chuxing AI Lab, Beijing, China*  
Conducted time-series analysis on electric vehicle operating data and built interpretable machine learning methods for battery prediction with environmental and battery sensory data.

### Services

Reviewer for NeurIPS 2023, ICML 2023, AISTATS 2023, WWW 2022, KDD 2022, and NeurIPS 2022.

### Skills

Python, PyTorch, Tensorflow, C++, MATLAB, Java.