Dongyue Li

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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 Univerisity, Shanghai, China*.
Minor in Mathematics and Applied Mathematics

Research Interests

I am interested in building principled methodologies for constructing multitask learning systems, learning with weakly supervised datasets, and analyzing graph-structured data. The research areas span multitask learning, transfer learning, data augmentation, and contrastive learning. 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 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
Interntional 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)

2022 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*, Zhuoran Song*, 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*, **Dongyue Li***, Hongyang R. Zhang
ICML Workshop on Updatable Machine Learning (UpML)

2021 Personalized and Environment-Aware Battery Prediction for Electric Vehicles.
Dongyue Li*, Guangyu Li*, Bo Jiang*, Zhengping Che, Yan Liu
KDD Workshop on Mining and Learning from Time Series (MiLeTS)

Remark: Asterisk indicates equal contribution

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.

Skills

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

Services

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

Honors and Scholarships

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