

# Chunhui Zhang

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Homepage:

<https://chunhuizng.github.io>

## EDUCATION & EXPERIENCE

*Ph.D. student, Computer Science*

Sep. 2021 - Present

**Brandeis University, Waltham, Massachusetts, US**

Michtom School of Computer Science

supported by GSAS Fellowship

*B.S., Computer Science*

Sep. 2017 - Jun. 2021

**Northeastern University, China**

School of Computer and Communication Engineering

GPA: 89.02/100.00

Research Assistant

Nov. 2018-Aug. 2021

**the Chinese University of Hong Kong, China**

Shenzhen Research Institute of Big Data (SRIBD)

Mentors: **Prof. Lei Cheng**, **Prof. Zhen Li**

Developed a differentiable method for neural architecture search that does not require much fewer GPU hours (80% computational cost/1,000 GPU hours reduction) on ImageNet.

## RESEARCH INTEREST

- Trustworthy Machine Learning (*e.g., my ICLR'23 on Robustness*)
- Efficient Machine Learning (*e.g., my ICML'23 and TMLR'23 on Sparse Contrastive Pre-training*)
- Generative AI (*e.g., my CIKM'22 on Vision-Language SSL*)
- Vision Foundation Model (*e.g., my CIKM'22, AAAI'W22, IEEE-IoTJ'22, ISBI'W19*)
- Large Pretrained Model (*In-progress work*)

## PAPER

- **Chunhui Zhang**, Chao Huang, Yijun Tian, Qianlong Wen, Zhongyu Ouyang, Youhuan Li, Yanfang Ye, Chuxu Zhang. When Sparsity Meets Contrastive Models: Less Data Can Bring Better Class-Balanced Representations, *Fortieth International Conference on Machine Learning (ICML)*, 2023. .
- **Chunhui Zhang**, Yijun Tian, Mingxuan Ju, Zheyuan Liu, Yanfang Ye, Nitesh Chawla, and Chuxu Zhang. Chasing All-Round Graph Representation Robustness: Model, Training, and Optimization, *The 11th International Conference on Learning Representations (ICLR)*, 2023.
- **Chunhui Zhang**, Hongfu Liu, Jundong Li, Yanfang Ye, Chuxu Zhang. Mind the Gap: Mitigating the Distribution Gap in Graph Few-shot Learning, *Transactions on Machine Learning Research (TMLR)*, 2023.
- Zheyuan Liu\*, **Chunhui Zhang\***, Yijun Tian, Erchi Zhang, Chao Huang, Yanfang Ye and Chuxu Zhang. Fair Graph Representation Learning via Diverse Mixture-of-Experts, *International World Wide Web Conference (WWW)*, 2023. *Note: Co-first author Liu is an undergraduate who was mentored by me. A pleasant first experience as a mentor. Thanks Liu!*
- Zhichun Guo, **Chunhui Zhang**, Yujie Fan, Yijun Tian, Chuxu Zhang, and Nitesh Chawla. Boosting Graph Neural Networks via Adaptive Knowledge Distillation, *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, 2023.
- Yijun Tian, Kaiwen Dong, **Chunhui Zhang**, Chuxu Zhang, and Nitesh Chawla. Heterogeneous Graph Masked Autoencoders, *Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI)*, 2023.

- Han Yue, **Chunhui Zhang**, Chuxu Zhang, and Hongfu Liu. Label-invariant Augmentation for Semi-Supervised Graph Classification, *Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
- Yiyue Qian, **Chunhui Zhang**, Yiming Zhang, Qianlong Wen, Yanfang Ye, and Chuxu Zhang. Co-Modality Imbalanced Graph Contrastive Learning, *Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
- **Chunhui Zhang**, Chao Huang, Youhuan Li, Xiangliang Zhang, Yanfang Ye, and Chuxu Zhang. Look Twice as Much as You Say: Scene Graph Contrastive Learning for Self-Supervised Image Caption Generation, *ACM International Conference on Information and Knowledge Management (CIKM)*, 2022.
- Jiele Wu, **Chunhui Zhang**, Zheyuan Liu, Erchi Zhang, Steven Wilson, and Chuxu Zhang. GraphBERT: Bridging Graph and Text for Malicious Behavior Detection on Social Media, *IEEE International Conference on Data Mining (ICDM)*, 2022.
- **Chunhui Zhang**, Chao Huang, Yijun Tian, Qianlong Wen, Zhongyu Ouyang, Youhuan Li, Yanfang Ye, Chuxu Zhang. Diving into Unified Data-Model Sparsity for Class-Imbalanced Graph Representation Learning, *Thirty-sixth Conference on Neural Information Processing Systems-New Frontiers in Graph Learning Workshop (NeurIPS GLFrontiers Workshop)*, 2022 & 37th AAAI Conference on Artificial Intelligence-Workshop on DL-Hardware Co-Design for AI Acceleration (*AAAI DCAA workshop*), 2023 *Best Paper Runner-up Award*.
- Qianlong Wen, Zhongyu Ouyang, **Chunhui Zhang**, Yiyue Qian, Yanfang Ye, Chuxu Zhang. Adversarial Cross-View Disentangled Graph Contrastive Learning, *Thirty-sixth Conference on Neural Information Processing Systems-New Frontiers in Graph Learning Workshop (NeurIPS GLFrontiers Workshop)*, 2022.
- **Chunhui Zhang**<sup>\*</sup>, Yongyuan Liang<sup>\*</sup>, Yifan Jiang<sup>\*</sup>. AdaSearch: Many-to-One Unified Neural Architecture Search via A Smooth Curriculum, *AAAI-22 Workshop: Learning Network Architecture During Training*.
- **Chunhui Zhang**, Xiaoming Yuan, Qianyun Zhang, Guangxu Zhu, Lei Cheng, and Ning Zhang. Towards Tailored Models on Private AIoT Devices: Federated Direct Neural Architecture Search, *IEEE Internet of Things Journal (IEEE-IoTJ)*, Feb. 2022.
- Qin Wang, Weibing Zhao, **Chunhui Zhang**, Liye Zhang, Changmiao Wang, Zhen Li, Shuguang Cui, Guanbin Li. 3d Enhanced Multi-scale Network For Thoracic Organs Segmentation, *IEEE International Symposium on Biomedical Imaging Challenge (ISBI-W)*, 2019

## SKILLS

**Programming Skills:** C++, Python, PyTorch, MATLAB, Java, Git, Hugging Face, LLM, PyG, DGL  
**Operating System:** Linux

## ACTIVITIES

- Publicity Chair for KDD2023 International Workshop on Resource-Efficient Learning for Knowledge Discovery
- Conference reviewer for NeurIPS2023, AAAI2023, NeurIPS2022, CIKM2022, ICDM2022, IEEE HPCC2020
- Journal reviewer for IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Network Science and Engineering, ACM Transactions on Intelligent Systems and Technology, Neurocomputing, Big Data

## TEACHING EXPERIENCE

- **Graph Mining**, 2023 Spring Semester, 2021 Fall Semester
- **Deep Learning**, 2022 Spring Semester, 2022 Fall Semester

## **AWARDS**

- Brandeis Graduate School of Arts and Sciences Fellowship
- CIKM Travel Grant Award 2022
- AAAI-DCAA 2023 Best Paper Runner-up Award 2023

Latest Update: April 2023