Chengpei Wu

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Personal Profile

I graduated from the School of Computer Science at Sichuan Normal University with a master's degree in Computer Science and Technology, under the supervision of Prof. Junli Li. Prior to that, I obtained my bachelor's degree from Chengdu University.
My research interests include machine learning and graph representation learning. Recently, my work has primarily focused on unsupervised graph representation learning, including topics such as graph contrastive learning. Previously, I explored deep learning methods for efficient and accurate robustness estimation in complex networks. In addition, I am also interested in robust machine learning, generative modeling, and large language models.

Education

- **Chengdu University** — Chengdu, China
  B.S., Internet of Things Engineering, *GPA: 3.53* — Sep. 2017 - Jun. 2021
- **Sichuan Normal University** — Chengdu, China
  M.S., Computer Science and Technology, *GPA: 3.7* — Sep. 2021 - Jun. 2024

Honors and Awards

- National Encouragement Scholarship — 2017-2018, 2018-2019, 2019-2020
- Outstanding Graduate, Chengdu University — 2021
- Academic Scholarship, Sichuan Normal University — 2021-2022
- National Scholarship — 2023-2024
- Merit Student, Sichuan Normal University — 2023-2024
- Outstanding Graduate, Sichuan Normal University and Sichuan Province — 2024

Skills

- **Programming**: Python, C, Java, HTML, Go.
- **Tools**: Git/GitHub, Linux.
- **Frameworks**: PyTorch, Networkx, DGL.
- **Language**: Chinese (native), English (CET-6)

Journal Publications

[1] **Chengpei Wu**, Yang Lou, Junli Li, Lin Wang, Shengli Xie and Guanrong Chen, "A Multitask Network Robustness Analysis System Based on the Graph Isomorphism Network," *IEEE Transactions on Cybernetics*, doi: 10.1109/TCYB.2024.3422430

[2] **Chengpei Wu**, Yang Lou, Lin Wang, Junli Li, and Guanrong Chen, "SPP-CNN: An Efficient Framework for Network Robustness Prediction," *IEEE Transactions on Circuits and Systems I: Regular*, doi:10.1109/TCSI.2023.3296602

[3] Yang Lou, **Chengpei Wu**, Junli Li, Lin Wang, and Guanrong Chen , "Network Robustness Prediction: Influence of Training Data Distributions," *IEEE Transactions on Neural Networks and Learning Systems*, doi:10.1109/TNNLS.2023.3269753

[4] **Chengpei Wu**, Siyi Xu, Zhuoran Yu, and Junli Li, "Influence of Removing Leaf Node Neighbors on Network Controllability," *Entropy*, doi:10.3390/e25060945

[5] Yang Lou, **Chengpei Wu**, Liang Chen, Wenli Huang, Lei Zhou, Lin Wang, and Guanrong Chen, "Exploring the Potential for Enhancing Structural Robustness of Complex Networks," *IEEE Computational Intelligence Magazine*, 20 (4): 83–98; doi:10.1109/MCI.2025.3599463 (2025)

Conference Publications

[1] Yiyang Zhao* and **Chengpei Wu*** and Lilin Zhang* and Ning Yang, "Negative Metric Learning for Graphs," *Proceedings of the Thirty-Fourth International Joint Conference on Artificial Intelligence (IJCAI)*, 2025.

[2] Lilin Zhang, **Chengpei Wu** and Ning Yang, "Weakly Supervised Contrastive Adversarial Training for Learning Robust Features from Semi-supervised Data," *2025 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Nashville, TN, USA, 2025.

[3] Yang Lou, **Chengpei Wu**, and Bo-Yu Chen, "Exploring Graph Representations in Machine Learning for Network Robustness Evaluation," *In Proceedings of International Joint Conference on Neural Networks (IJCNN)*, June 30–July 05, 2024, Yokohama, Japan.

[4] **Chengpei Wu**, Yang Lou, and Junli Li "Pyramid Pooling-Based Local Profiles for Graph Classification," *In Proceedings of IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, October 1–4, 2023, Maui, Hawaii, USA.

[5] **Chengpei Wu**, Siyi Xu and Junli Li, "Predicting Robustness Performance with Noises in Network Representation," *In Proceedings of IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, October 1–4, 2023, Maui, Hawaii, USA.

[6] **Chengpei Wu**, Siyi Xu, Zhuoran Yu and Junli Li, "A Nested Edge Addition Strategy for Network Controllability Robustness Enhancement," *In Proceedings of IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, October 1–4, 2023, Maui, Hawaii, USA.

[7] **Chengpei Wu**, Yang Lou, Ruizi Wu, Wenwen Liu, and Junli Li "CNN-based Prediction of Network Robustness With Missing Edges" *In Proceedings of International Joint Conference on Neural Networks (IJCNN)*, July 18-23, 2022, Padua, Italy.

Selected Technical Projects

- **MiniTorch (https://github.com/chengpei-wu/MiniTorch)**, An autograd deep-learning python library, MiniTorch inclues the most fundamental and essential features of a deep-learning framework, such as tensor computing, autograd mechanism, dataset (dataloader), nueral network modules, loss functions, and gradient decent optimizers (SGD, Adam...).
- **Complex Network Tools (https://github.com/chengpei-wu/ComplexNetwork)**, An open-source Python package for the generation, analysis, and optimization of complex networks. This package implements common complex network generation models (such as BA, SW, etc.), algorithms for network attack simulation, network robustness optimization, and network robustness prediction.
- **GNNTraining (https://github.com/chengpei-wu/GNNTraining)**, A DGL-based library for benchmark training of Graph Neural Networks (GNNs). It supports structure-tuned GCN, GAT, and GraphSAGE models on homophilous, heterophilous, and OGB datasets. The library provides unified data processing, flexible training pipelines, and reproducible results with scripts for training and hyperparameter tuning.