

Chengpei Wu

Chengdu, China

+86-13540954901

✉ chengpei.wu@hotmail.com

🐙 GitHub: <https://github.com/chengpei-wu>

🏠 Homepage: <https://chengpei-wu.github.io/>

PERSONAL PROFILE

I am currently pursuing a masters degree in the School of Computer Science at Sichuan Normal University, Chengdu, China. Under the supervision of Prof. Junli Li.

My research interests include Complex Networks, Graph Machine Learning, and Graph Representation Learning. Recently, my research work mainly focuses on using deep learning approaches (graph neural networks, convolutional neural networks) for efficient and accurate robustness approximation of complex networks. Additionally, I am exploring the integration of graph machine learning and complex network knowledge, as well as the application of graph neural networks in complex network research. I am also interested in exploring the integration of Large Language Models (LLMs) with graph learning techniques and associated graph-based tasks.

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, MySQL, VS Code, PyCharm.
- **Frameworks:** PyTorch, Scikit-Learn, Networkx, DGL, Numpy, Pandas, Scipy, Matplotlib.
- **Language:** Chinese (native), English (CET-6)

JOURNAL PUBLICATIONS

- [1] **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 (IF=5.1)
- [2] 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 (IF=10.4)
- [3] **Chengpei Wu**, Siyi Xu, Zhuoran Yu, and Junli Li "Influence of Removing Leaf Node Neighbors on Network Controllability," *Entropy*, doi:10.3390/e25060945 (IF=2.7)

CONFERENCE PUBLICATIONS

International Joint Conference on Neural Networks (IJCNN), 2024, Yokohama, Japan. (Oral)

- [1] 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.

IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2023, Oahu, Hawaii, USA. (Oral)

- [1] **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.
- [2] **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.
- [3] **Chengpei Wu**, Siyi Xu, 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.

International Joint Conference on Neural Networks (IJCNN), 2022, Padua, Italy. (Oral)

- [1] **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.

NetSci, July 2529, 2022, Shanghai, China. (Conference Volunteer)

SELECTED TECHNICAL PROJECTS

- **MiniTorch** (<https://github.com/chengpei-wu/MiniTorch>) An autograd deep-learning python library, MiniTorch includes the most fundamental and essential features of a deep-learning framework, such as tensor computing, autograd mechanism, dataset (dataloader), neural network modules, loss functions, and gradient decent optimizers (SGD, Adam...).
- **Complex Network Tools** (<https://github.com/chengpei-wu/ComplexNetwork>), I have developed and maintained 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.
- **Paper Reproduction Hub** (<https://github.com/chengpei-wu/PaperReproductionHub>), A repository for reproducing classic machine learning algorithms, deep learning models, and the latest interesting research papers.
- **Graph Machine Learning Notes** (<https://github.com/chengpei-wu/Graph-ML-notes>), This repository has been created to document the learning journey in the field of graph machine learning. It includes study notes, code implementations, and other useful resources collected during the learning process.