

Yinhan He

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EDUCATION EXPERIENCES

University of Virginia (UVa)

Charlottesville, USA

Ph.D. student in Electrical and Computer Engineering;

Jan. 2023 – Dec. 2027

- **Advisor:** Prof. Jundong Li
- **Research Interests:** Large Language Models, Interpretable / Explainable AI, Graph Machine Learning, Spectral Graph Theory.

University of Chinese Academy of Sciences (UCAS)

Beijing, China

B.S. in Mathematics and Applied Mathematics; GPA: 3.84/4.0

Sep 2018 – Jun 2022

- **College Entrance Examination: Top 0.01%** in Shaanxi Province, China.
- Graduated with **Excellent Bachelor Thesis Award**.

PROJECTS AND PUBLICATIONS

PUBLICATIONS

- [1] **Yinhan He**, Chen Chen, Song Wang and Jundong Li, *Demystify Epidemic Containment in Directed Networks: Theory and Algorithms*, WSDM 2025 (acceptance rate 17.9%)
- [2] **Yinhan He**, Zaiyi Zheng, Patrick Soga, Yaochen Zhu, Yushun Dong, Jundong Li *Explaining Graph Neural Networks with Large Language Models: A Counterfactual Perspective on Molecule Graphs*, EMNLP 2024 (Findings).
- [3] Yaochen Zhu, **Yinhan He**, Jing Ma, Mengxuan Hu, Sheng Li, Jundong Li *Causal Inference with Latent Variables: Recent Advances and Future Prospectives*. SIGKDD 2024 (Survey track).

PREPRINTS

- [1] Song Wang, Yushun Dong, Binchi Zhang, Zihan Chen, Xingbo Fu, **Yinhan He**, Cong Shen, Chuxu Zhang, Nitesh V Chawla, Jundong Li *Safety in Graph Machine Learning: Threats and Safeguards*. Arxiv.
- [2] Mucong Ding, **Yinhan He**, Jundong Li, Furong Huang *Spectral Greedy Coresets for Graph Neural Networks*. Arxiv.

SUBMISSIONS UNDER REVIEW

- [1] **Yinhan He**, Jing Ma, Yaochen Zhu, Saumitra Mishra, Natrij Raman, Ninghao Liu and Jundong Li *Global Graph Counterfactual Explanations: A Subgraph Mapping Approach*, under review of AAAI 2025.
- [2] **Yinhan He**, Wendy Zheng, Song Wang, Zaiyi Zheng, Yushun Dong, Yaochen Zhu, Jundong Li *Hierarchical Demonstration Order Optimization Order Optimization For Many-Shot In-context Learning*. under review of ICLR 2025.
- [3] Yushun Dong, **Yinhan He**, Patrick Soga, Song Wang, Jundong Li *Graph Neural Networks Are More Than Filters: Revisiting and Benchmarking from A Spectral Perspective*. under review of ICLR 2025.
- [4] Xingbo Fu, **Yinhan He**, Jundong Li *Edge Prompt Tuning for Graph Neural Networks*. under review of ICLR 2025.
- [5] Zhen Tan, Song Wang, Shyam Marjit, Zihan Chen, **Yinhan He**, Xinyu Zhao, Pingzhi Li, Jundong Li, huan liu, Tianlong Chen *Understanding Prejudice and Fidelity of Diverge-to-Converge Multi-Agent Systems*. under review of ICLR 2025.
- [6] Yaochen Zhu, **Yinhan He**, Xingbo Fu, Liang Wu, Qi Guo, Liangjie Hong, Jundong Li *Bounding Spillover Effect under Structural Uncertainty*. under review of AISTATS 2025.
- [7] Wendy Zheng, **Yinhan He**, Jundong Li *GCSGNN: Towards Global Self-Explainable Graph Neural*

Networks. under review of WWW 2025.

[8] Xingbo Fu, Zihan Chen, **Yinhan He**, Song Wang, Binchi Zhang, Chen Chen, Jundong Li *Virtual Nodes Can Help: Tackling Distribution Shifts in Federated Graph Learning*. under review of AAAI 2025.

RESEARCH EXPERIENCES

University of Virginia

Charlottesville, USA

Ph.D. Student and Research Assistant

Jan. 2023 – Dec. 2027 (Expected)

- Explored graph modulation to generate frequency profiles for different graph neural networks, expanded people's understanding from convolution to the entire network, and first introduced frequency profiles for GNNs with learnable kernels.
- Designed a global graph counterfactual explanation method that generates human-understandable graph recourse rules with good validity, proximity, and interpretability.
- Explored spectral behaviors of directed graphs and proposed an efficient and effective method for solving epidemic containment problems on directed social networks.

Institute of Automation, CAS

Beijing, China

Research Intern

Jan. 2022 – Apr. 2022

- Designed a new method to alleviate the over-smoothing issue in temporal knowledge graph prediction tasks by Hawkes Process.
- Finished graduate thesis and win very competitive excellent bachelor thesis.

TEACHING EXPERIENCES

Teaching Assistant (2024 Fall, Graduate): ECE 6501 & CS 6501 Convex Optimization, University of Virginia

AWARDS AND HONORS

SIAM SDM Student Travel Award (Apr 2023): Awarded to senior doctoral students with more concrete ideas for their dissertation, as well as junior doctoral students who may not have a full plan for their dissertation yet but have a promising direction.

Excellent Bachelor Thesis of UCAS (June 2022): Awarded to graduating students who achieve excellence in their Bachelor Thesis.

PROFESSIONAL SERVICES

Invited Reviewer & External Reviewer: SIGKDD, ICML, SDM, ICLR, NeurIPS, IJCAI, etc.
Held **Graph Theory and Graph Machine Learning Seminar** in UCAS.

SKILLS

Programming: C, Python, R, MATLAB

Libraries: OpenAI (OpenAI API), Transformers (Huggingface API), PyTorch, PyG, Networkx