

# MR. YUNFAN WANG

✉ yunf.wang@outlook.com, abe6fq@virginia.edu ☎ +1 (434) 995-8911

## EDUCATION BACKGROUND

### University of Virginia, USA

Sep 2024 - Now

- *Ph.D. in School of Computer Science*

Advised by Prof. Yue Cheng, Associate Professor of Data Science and Computer Science

Research Interests: Machine Learning System, Large Language Model, Graph Anomaly Detection

### Xi'an Jiaotong University, China

Sep 2021 - Jun 2024

- *Master of Engineering in Computer Science and Technology*

GPA: 3.57/4.0

Advised by Prof. Qinghua Zheng, Academician of Chinese Academy of Engineering

Research Interests: Data mining, Machine learning, Graph anomaly detection

### Xi'an Jiaotong University, China

Sep 2017 - Jun 2021

- *Bachelor of Engineering in Computer Science and Technology (Major)*

GPA: 3.94/4.3, Rank: 6/150

Thesis: Detection Method for Tax Purchase and Sales Deviation Based on Anomaly Detection

- *Bachelor of Economics in Economics (Minor, Second Degree)*

Thesis: Research of the Impact of Informatization on Economic Growth

## TECHNICAL SKILLS

**Programming:** Python, Matlab, R, C/C++

**Libraries&Software:** PyTorch, Scipy, Scikit-learn, Pandas, Networkx, MySQL

**System:** Linux system administration, Server group management

**Language:** English (IELTS: 7.0, Listening: 7.5, Reading: 7.0, Writing: 6.0, Speaking: 6.5)

## PUBLICATIONS

Zhen Peng, **Yunfan Wang**, Qika Lin, Bin Shi, Chen Chen, Bo Dong, and Chao Shen. End-to-End Abnormal Subgraph Detection via Subgraph-Level Contrastive Learning. *IEEE Transactions on Neural Networks and Learning Systems* (2025).

Zhen Peng, **Yunfan Wang**, Qika Lin, Bo Dong, and Chao Shen. When bipartite graph learning meets anomaly detection in attributed networks: Understand abnormalities from each attribute. *Neural Networks* (2025): 107194.

Chen Chen, **Yunfan Wang**, Gursharn Kaur, Aniruddha Adiga, Baltazar Espinoza, Srinivasan Venkatramanan, Andrew Warren et al. "Wastewater-based Epidemiology for COVID-19 Surveillance and Beyond: A Survey." *Epidemics*, Volume 49(2024): 100793.

Bin Shi, Bo Dong, Yiming Xu, Jiayang Wang, **Yunfan Wang**, and Qinghua Zheng. An edge feature aware heterogeneous graph neural network model to support tax evasion detection. *Expert Systems with Applications* 213 (2023): 118903.

## PROJECTS

### Data-driven Multi-View Brain Network Analysis for Disease Diagnosis with LLM Boost Aug 2024 - Dec 2024

- The first rotation project in the UVA Department of Computer Science.

- Developed a data-driven framework utilizing graph neural networks and LLMs for multi-view brain network analysis, addressing key challenges in disease diagnosis, including limited labeled data, biological semantics integration, class imbalance, and interpretability, with preliminary results achieved on self-supervised learning.

### Towards Mechanistic Interpretability for Graph Foundation Models

Oct 2024 - Nov 2024

- Submitted to ICDE 2025.

- Explored the mechanistic interpretability of Graph Foundation Models, focusing on identifying unified computational subnetworks and enhancing human-understandable reasoning processes.

- As the third author, participated in project inception, contributed to manuscript writing and visualizations, implemented synthetic data generation, and conducted experiments on three chemical molecular datasets.

### **Tax big data analysis and application**

**May 2023 - Dec 2023**

- State Taxation Administration of The People's Republic of China - Xi'an Jiaotong University Cooperative Project.
- A tax-payer network was constructed and the graph analysis method was used to detect anomalies among 1 million enterprises in Northwest China. Taxes of over 1 million RMB were recovered.

### **Research and development project on tax preference calculation and risk identification based on knowledge graph**

**Oct 2021 - Jul 2022**

- Servyou Software Group Co., Ltd. - Xi'an Jiaotong University Cooperative Project.
- Accessed to all tax data in China. A transaction network was constructed with sampled important enterprises. Then the anomalies were predicted by a graph neural network model.
- Applied to China's Golden Tax System, which redeems tens of millions of taxes.

### **Establishment of laboratory hardware environment**

**Jan 2022 - Dec 2022**

- Construction and administration of high-performance and highly available GPU server group with a shared storage pool for the lab.

### **NVRAM optimization based on LevelDB**

**Jul 2019 - Jul 2020**

- College student entrepreneurship and innovation provincial-level project.
- Role: project leader.

### **CVPR class experiment**

**Mar 2020 - Jul 2020**

- Morphing, Carving, Canny edge detection, Linear regression, Harris corner detection, CNN, Camera Calibration.

### **The 13th iCAN International Contest of Innovation**

**May 2019 - Nov 2019**

- A multifunctional desk lamp that integrates storage and charging capabilities.
- Role: project leader.
- Award: First Prize in the Northwest Region, Third Prize Nationwide.
- Patent: National utility model patent CN 210485397 U.

### **Computer Architecture class experiment**

**Oct 2019 - Dec 2019**

- Design and simulate single-cycle CPU and multi-cycle CPU with the decentralized interconnection structure.

## **HONORS AND AWARDS**

- |   |                           |
|---|---------------------------|
| • Outstanding postgraduate Student of Xi'an Jiaotong University               | 2023                      |
| • The First Prize Scholarship of Academic Records                             | 2022, 2023 (2 times)      |
| • Outstanding postgraduate Student Leader of Xi'an Jiaotong University        | 2022                      |
| • Outstanding Undergraduate Student Leader of Xi'an Jiaotong University       | 2019, 2020, 2021(3 times) |
| • The First Prize Scholarship of Xi'an Jiaotong University                    | 2020                      |
| • Academic Star of Nanyang College of Xi'an Jiaotong University               | 2020                      |
| • Scholarship of Shenzhen Stock Exchange                                      | 2019                      |
| • Outstanding Undergraduate Student of Xi'an Jiaotong University              | 2018                      |
| • The Second Prize Scholarship of Xi'an Jiaotong University                   | 2018                      |
| • Excellent Member of Xi'an Jiaotong University Nanyang College Student Union | 2018                      |

## **WORK EXPERIENCE**

- |  |           |
|--|-----------|
| • Teaching Assistant of The Introduction of Computer Science                                       | 2021-2022 |
| • Member of Xi'an Jiaotong University Postgraduate Student Union                                   | 2021-2022 |
| • Volunteer in Student Academic Tutoring Center: Tutoring others and developing tutoring materials | 2019-2021 |
| • Class Monitor of the undergraduate class   | 2018-2021 |