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Yili Wang

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Research Interests

Graph Data Mining, Heterogeneous Granph Neural Networks, Spatio-Temporal Data Mining

Education

Central South University

Changsha, Hunan

Master of Science in Computer Science — *Sep.2022 - Jun.2025(expected)*

- **GPA:** 3.7/4.0 • **Supervisor:** Prof. Gao Jianliang
- **Thesis:** Efficient Data Mining on Dynamic Heterogeneous Graphs with Attention Mechanisms
- **Core Courses:** Advanced Computer Networks (90), Applied Statistics (90), Advanced Distributed System (89)

Wuhan University of Science and Technology

Wuhan, Hubei

Bachelor of Science in Computer Science — *Sep.2018 - Jun.2022*

- **GPA :** 3.34/4
- **Graduation Project:** Mask wearing recognition system based on Convolutional neural networks
- **Core Courses:** Computer Organization (*90*), Computer Networks (*89*), Discrete Mathematics (*92*)

Honors

Outstanding Student, Awarded by Central South University	2023.10
The First Prize Scholarship, Awarded by Central South University	2024.10
The First Prize Scholarship, Awarded by Central South University	2023.10
CRRC Zhuzhou Institute Scholarship, Awarded by Central South University	2023.10
The Second Prize Scholarship, Awarded by Central South University	2022.10

Publications

Published 4 papers in international conference/journals, 3 papers under review.

[1]. Relation Time-aware Heterogeneous Dynamic Graph Neural Networks

Yili Wang, Jiamin Chen, Qiutong Li, Changlong He and Jianliang Gao

European Conference On Artificial Intelligence, 2024. **(CCF B, Oral)**

Paper link: https://github.com/wangyili00/Retag

[2]. Graph Neural Architecture Search with Heterogeneous Message-passing Mechanisms

Yili Wang, Jiamin Chen, Qiutong Li, Changlong He and Jianliang Gao

Knowledge and Information Systems, 2024. **(CCF B)**

Paper link: `https://doi.org/10.1007/s10115-024-02090-x`

[3]. MSLS: Meta-graph Search with Learnable Supernet for Heterogeneous Graph Neural Networks

Yili Wang, Jiamin Chen, Qiutong Li, Changlong He and Jianliang Gao

International Conference on Scientific and Statistical Database Management, 2023. **(CCF C)**

Paper link: `https://doi.org/10.1145/3603719.3603727`

[4]. Heterogeneous Dynamic Attention Graph Neural Network

Yili Wang, Jiamin Chen, Qiutong Li, Changlong He and Jianliang Gao

Annual AAAI Conference on Artificial Intelligence, 2025. **(CCF A, submitted)**

[5]. SRAD: Structural Representation Learning for Anomaly Detection on Dynamic Graphs

Tairan Huang, **Yili Wang**, Jiamin Chen, Qiutong Li and Jianliang Gao

Annual AAAI Conference on Artificial Intelligence, 2025. **(CCF A, submitted)**

Research Experience

Research on accelerating automated modeling of GNN. *June 2022 - Oct 2023*

This project is supported by the National Natural Science Foundation of China *project number: 62272487.*

- **Contribution:** To improve the performance and efficiency of the neural architecture search (NAS) method in heterogeneous graph neural networks, we propose a heterogeneous message passing mechanism based on meta-graphs to enhance the searched model's ability to fit various types of data. Additionally, we introduce a single-path training strategy and a constrained evolutionary algorithm to balance the efficiency and performance of NAS.

- **Outcome:** Published two research articles as the first author in the **Knowledge and Information Systems (CCF B)**, journal and the International Conference on Scientific and Statistical Database Management (CCF C).

Research on spatial-temporal Graph data mining. *Oct 2023 - Oct 2024*

- **Contribution:** The attention mechanisms used in previous works were designed for static graph data, leading to the loss of temporal information. To overcome this challenge, we propose a novel attention mechanism, which can dynamically adjust attention coefficients based on evolving features and historical weight. This helps to leverage temporal information to generate better representations.

- **Outcome:** Published one research articles as the first author for presentation at **European Conference On Artificial Intelligence (CCF B)**. Submitted a research article to the AAAI 2025 conference as the first author and contributed to the submission of two papers as the co-author.

Other Projects

2022.09-2023.09 | Participated in the construction of a financial data visualization analysis platform

The platform has applied for registration of software copyright registration, registration number: 2022SR1361093.

Mainly responsible for designing and implementing the backend database and interactive functions of data.