Yiyang (Ian) Li

yli62@nd.edu +1 574-904-3747 Homepage LinkedIn Scholar GitHub

Research Summary

My research focuses on **agentic AI systems**, aiming to enable large foundation models to reason, act, and collaborate effectively, with applications spanning real-world societal challenges. Specifically, the topics cover the following aspects:

- **Agent System Optimization.** Planning and tool use in long-horizon agentic systems [1]; reinforcement learning for multi-agent coordination [2].
- **Retrieval-Augmented Generation and Knowledge-Guided Reasoning.** Interpretable graph–language modeling [3]; domain-specific knowledge graph question answering [4].
- **Foundation Models.** Foundation models on graphs [5, 6]; efficient foundation model architectures [7, 8]; LLMs for scientific discovery [9].

Education

University of Notre Dame *South Bend, IN*
Ph.D. in Computer Science and Engineering *Sept. 2024 – Present*

Northeastern University *Liaoning, China*
B.E. in Artificial Intelligence *Sept. 2020 – Jun. 2024*

- **Awards:** Outstanding Student Scholarship 2021-2023

Professional Experience

Notre Dame–IBM Technology Ethics Lab *Notre Dame, IN*
Student Researcher (Part-time) *Jun. 2025 – Dec. 2025*

- Develop an interpretable graph-based language modeling framework that achieved superior predictive performance and revealed latent behavioral patterns in youth illicit drug use.
- Evaluate LLM agents' capabilities in performing autonomous data analysis tasks involving complex, long-context documentation. Check this website for our benchmark.

Sony Research *Beijing, China*
Computer Vision Research Intern *Aug. 2023 – Feb. 2024*

- Improve person re-identification accuracy by training Convolutional Neural Networks with unsupervised domain adaptation techniques.

Selected Publications

* indicates equal contribution

[1] **LongDA: Benchmarking LLM Agents for Long-Document Data Analysis** [Preprint 2026]
Yiyang Li, Zheyuan Zhang, Tianyi Ma, Zehong Wang, Keerthiram Murugesan, Chuxu Zhang, Yanfang Ye

[2] **Food4All: A Multi-Agent Framework for Real-time Free Food Discovery with Integrated Nutritional Metadata** [Preprint 2025]
Zhengqing Yuan, **Yiyang Li**, Weixiang Sun, Zheyuan Zhang, Kaiwen Shi, Keerthiram Murugesan, Yanfang Ye

[3] **Interpretable Graph-Language Modeling for Detecting Youth Illicit Drug Use** [EACL Findings 2026]
Yiyang Li*, Zehong Wang*, Zhengqing Yuan, Zheyuan Zhang, Keerthiram Murugesan, Chuxu Zhang, Yanfang Ye

[4] **NGQA: a nutritional graph question answering benchmark for personalized health-aware nutritional reasoning** [ACL 2025]
Zheyuan Zhang*, **Yiyang Li***, Nhi Ha Lan Le, Zehong Wang, Tianyi Ma, Vincent Galassi, Keerthiram Murugesan, Nuno Moniz, Werner Geyer, Nitesh V Chawla, Chuxu Zhang, Yanfang Ye

[5] **Graph Foundation Models: A Comprehensive Survey** [Preprint 2025]
Zehong Wang*, Zheyuan Liu*, Tianyi Ma*, Jiazheng Li*, Zheyuan Zhang*, Xingbo Fu*, **Yiyang Li***, Zhengqing Yuan*, Wei Song, Yijun Ma, Qingkai Zeng, Xiusi Chen, Jianan Zhao, Jundong Li, Meng Jiang, Pietro Lio, Nitesh Chawla, Chuxu Zhang, Yanfang Ye

[6] **Exploring attention mechanism for graph similarity learning** [Knowledge-Based Systems 2023]
Wenhui Tan, Xin Gao, **Yiyang Li**, Guangqi Wen, Peng Cao, Jinzhu Yang, Weiping Li, Osmar R Zaiane

[7] **Vision-MoR: Scaling Vision Transformer via Patch-Level Mixture-of-Recursions** [AAAI 2026]
Yunhong He, Zhengqing Yuan, Weixiang Sun, **Yiyang Li**, Yixin Liu, Yanfang Ye, Lichao Sun

[8] **EfficientLLM: Efficiency in Large Language Models** [Preprint 2025]
Zhengqing Yuan, Weixiang Sun, Yixin Liu, Huichi Zhou, Rong Zhou, **Yiyang Li**, Zheyuan Zhang, Wei Song, Yue Huang, Haolong Jia, Keerthiram Murugesan, Yu Wang, Lifang He, Jianfeng Gao, Lichao Sun, Yanfang Ye

[9] **LLMs4All: A Review of Large Language Models Across Academic Disciplines** [Preprint 2025]
Yanfang Fanny Ye*, Zheyuan Zhang*, Tianyi Ma*, Zehong Wang*, **Yiyang Li***, Shifu Hou*, Weixiang Sun*, Kaiwen Shi*, Yijun Ma*, Wei Song, Ahmed Abbasi, Ying Cheng, Jane Cleland-Huang, Steven Corcelli, Patricia Culligan, Robert Goulding, Ming Hu, Ting Hua, John Lalor, Fang Liu, Tengfei Luo, Ed Maginn, Nuno Moniz, Jason Rohr, Brett Savoie, Daniel Slate, Tom Stapleford, Matthew Webber, Olaf Wiest, Johnny Zhang, Nitesh Chawla

Service

- **Outreach Program**
  - Instructor and science fair judge at Northpoint and Madison Elementary Schools

Teaching Experience and Mentorship

- **Teaching Assistant**, University of Notre Dame
  - Computer Security (CSE 40567), Spring 2026
  - Introduction to Artificial Intelligence (CSE 30124), Fall 2024
- **Research Mentor**, Lucy Family Institute Summer Internship Program, 2025

Skills

Programming: Python, C++ **ML/DL:** LangGraph, vLLM, PyTorch **Tools:** Git, Docker, Linux