

Yijun Tian

Ph.D. Candidate
Computer Science and Engineering
University of Notre Dame

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Research Interests

My research interests center around artificial intelligence, machine learning, and data science. My research aims to empower machines with knowledge (from data, models, and external sources) to positively influence real-world applications, sciences, and health. Primarily, I focus on developing knowledge-centric machine learning algorithms that are effective, efficient, and trustworthy, particularly on graphs. Additionally, I apply them to improve nutrition and food services, strengthen security/privacy/fairness, advance chemistry and biology, and facilitate interdisciplinary studies.

Education

- 2020-2024 **Ph.D.** in Computer Science, University of Notre Dame, USA
 - Advisor: **Nitesh V. Chawla**, The Frank M. Freimann Professor, ACM/AAAI/IEEE Fellow
- 2018-2020 **M.S.** in Computer Science, New York University, USA
- 2014-2018 **B.E.** in Computer Science, Shandong University, China

Professional Experience


- Summer 2023 **Applied Scientist Intern**, Amazon, USA
- Summer 2022 **Research Scientist Intern**, Spotify, USA
- 2019-2020 **Researcher**, VIDA Research Center, USA
- Winter 2018 **Research Intern**, RiskEcon Lab for Decision Metrics, USA
- Summer 2017 **Software Engineering Intern**, Tencent, China






Awards and Honors

- 2023-2024 **Spotlight Paper**, The International Conference on Learning Representations
- 2023 **Oral Paper**, The AAAI Conference on Artificial Intelligence
- 2023 **Best Paper Runner-up**, DL-Hardware Co-Design for AI Acceleration
- 2023 **Spotlight Paper**, Resource-Efficient Learning for Knowledge Discovery
- 2023 **Student Scholarship**, The AAAI Conference on Artificial Intelligence
- 2020 **Spotlight Paper**, The International AAAI Conference on Web and Social Media
- 2019 **Best Paper**, The International Conference on Artificial Intelligence and Security

Selected Publications

Full list of my publications are provided in Google Scholar.

- AAAI'24 **Yijun Tian**, H. Song, Z. Wang, H. Wang, Z. Hu, F. Wang, N. V. Chawla, P. Xu, Graph Neural Prompting with Large Language Models, The AAAI Conference on Artificial Intelligence, 2024.
- AAAI'23 **Yijun Tian**, K. Dong, C. Zhang, C. Zhang, and N. V. Chawla, Heterogeneous Graph Masked Autoencoders, The AAAI Conference on Artificial Intelligence, 2023.
 Oral Paper Honor
- ICLR'23 **Yijun Tian**, C. Zhang, Z. Guo, X. Zhang, N. V. Chawla, Learning MLPs on Graphs: A Unified View of Effectiveness, Robustness, and Efficiency, The International Conference on Learning Representations, 2023.
 Spotlight Paper Honor

- RelKD'23 **Yijun Tian**, M. Aziz, A. Wang, E. Palumbo, H. Bouchard, Self-supervised Podcast Representation Learning on Graphs, International Workshop on Resource-Efficient Learning for Knowledge Discovery, 2023.
 [Spotlight Paper Honor](#)
- IJCAI'22 **Yijun Tian**, C. Zhang, Z. Guo, Y. Ma, R. Metoyer, N. V. Chawla, Recipe2Vec: Multi-modal Recipe Representation Learning with Graph Neural Networks, The International Joint Conference on Artificial Intelligence, 2022.
- IJCAI'22 **Yijun Tian**, C. Zhang, Z. Guo, C. Huang, R. Metoyer, N. V. Chawla, RecipeRec: A Heterogeneous Graph Learning Model for Recipe Recommendation, The International Joint Conference on Artificial Intelligence, 2022.
- Frontiers'22 **Yijun Tian**, C. Zhang, R. Metoyer, and N. V. Chawla, Recipe Recommendation with Hierarchical Graph Attention Network, Frontiers in Big Data, 2022.
- CIKM'21 **Yijun Tian**, C. Zhang, R. Metoyer, N. V. Chawla, Recipe Representation Learning with Networks, The ACM International Conference on Information and Knowledge Management, 2021.
- ICWSM'20 **Yijun Tian**, R. Chunara, Quasi-Experimental Designs for Assessing Response on Social Media to Policy Changes, The International AAAI Conference on Web and Social Media, 2020.
 [Spotlight Paper Honor](#)
- CMC'19 **Yijun Tian**, W. Ng, J. Cao, S. McIntosh, Geek Talents: Who are the Top Experts on GitHub and Stack Overflow?, The International Conference on Artificial Intelligence and Security, 2019. Extended version published in Computers, Materials & Continua.
 [Best Paper Award](#)
- ICLR'24 L. Wu, **Yijun Tian**, Y. Huang, S. Li, H. Lin, N. V. Chawla, S. Z. Li, MAPE-PPI: Towards Effective and Efficient Protein-Protein Interaction Prediction via Microenvironment-Aware Protein Embedding, International Conference on Learning Representations, 2024.
 [Spotlight Paper Honor](#)
- ICLR'23 C. Zhang, **Yijun Tian**, M. Ju, Z. Liu, N. V. Chawla, C. Zhang, Chasing All-Round Graph Representation Robustness: Model, Training, and Optimization, International Conference on Learning Representations, 2023.
- ICML'23 C. Zhang, C. Huang, **Yijun Tian**, Q. Wen, Z. Ouyang, Y. Li, Y. Ye, C. Zhang, When Sparsity Meets Contrastive Models: Less Graph Data Can Bring Better Class-Balanced Representations, The International Conference on Machine Learning, 2023.
- WWW'23 Z. Liu, C. Zhang, **Yijun Tian**, E. Zhang, C. Huang, Y. Ye, and C. Zhang, Fair graph representation learning via diverse mixture-of-experts, The Web Conference, 2023.
- IJCAI'23 Z. Guo, K. Guo, B. Nan, **Yijun Tian**, Y. Ma, O. Wiest, X. Zhang, W. Wang, C. Zhang, N. V. Chawla, Graph-based Molecular Representation Learning, The International Joint Conference on Artificial Intelligence, 2023.
- AAAI'23 Z. Guo, C. Zhang, Y. Fan, **Yijun Tian**, C. Zhang, N. V. Chawla, Boosting Graph Neural Networks via Adaptive Knowledge Distillation, The AAAI Conference on Artificial Intelligence, 2023.
- DCAA'23 C. Zhang, C. Huang, **Yijun Tian**, Q. Wen, Z. Ouyang, Y. Li, Y. Ye, C. Zhang, Diving into Unified Data-Model Sparsity for Class-Imbalanced Graph Representation Learning, The First Workshop on DL-Hardware Co-Design for AI Acceleration, 2023.
 [Best Paper Runner-up Award](#)

Invited Talks

- 2023 **Undergraduate Consortium**, Conference Panelist, KDD
- 2023 **Brandeis University**, Guest Lecturer, Self-supervised Graph Learning
- 2023 **Amazon**, Invited Speaker: Strategies for training Large Language Models
- 2023 **Lucy Family Institute**, Invited Speaker: Graph Representation Learning
- 2023 **AI and Society Panel**, Course Panelist, AI for Social Good
- 2022 **MenuDirections**, Invited Speaker: AI for Food: from Ingredients to Recipes
- 2022 **Spotify**, Invited Speaker: Graph Neural Networks for Podcasts
- 2019 **Big Data Symposium**, Invited Speaker: Investigating the Trend of CS Hot Areas
- 2018 **Tencent**, Invited Speaker: Deep Learning on Image Recognition

Teaching Experience

- **Tutorial Organizer and Presenter**
 - AAAI'24 (The AAAI Conference on Artificial Intelligence), Vancouver, Canada
Topic: Knowledge-enhanced Graph Learning
 - SDM'24 (SIAM International Conference on Data Mining), Houston, USA
Topic: Data Quality-Aware Graph Machine Learning
- **Guest Lecturer**
 - COSI 133A Graph Mining, Brandeis University, Spring 2023
 - Topic: Self-supervised Graph Learning
- **Teaching Assistant**
 - CSE 40113 Design/Analysis of Algorithms, University of Notre Dame, Fall 2020
Core course with both undergraduate and graduate levels
 - CSE 40113 Design/Analysis of Algorithms, University of Notre Dame, Spring 2021
Core course with both undergraduate and graduate levels

Professional Services

- **Organizer**
 - Tutorial at AAAI'24, Vancouver, Canada
 - Tutorial at SDM'24, Houston, USA
 - Local Meetup at LoG'23, South Bend, USA
- **Conference Program Committee Member and Reviewer**
 - 2022
NeurIPS, IJCAI, KDD, LoG
 - 2023 - Present
NeurIPS, ICLR, AAAI, IJCAI, KDD, WWW, EMNLP, CIKM, SDM, LoG, PAKDD
- **Journal Reviewer**
 - IEEE Transactions on Knowledge and Data Engineering (TKDE)
 - IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
 - IEEE Transactions on Multimedia (TMM)
 - ACM Transactions on Knowledge Discovery from Data (TKDD)
 - ACM Transactions on Intelligent Systems and Technology (TIST)
 - Journal of Artificial Intelligence Research (JAIR)
 - Frontiers in Big Data
 - Information Sciences
- **Workshop Reviewer**
 - NeurIPS New Frontiers in Graph Learning (2022, 2023)
 - NeurIPS New Frontiers of AI for Drug Discovery and Development (2023)
 - KDD Resource-Efficient Learning for Knowledge Discovery (2023)