

# Kaiwen Dong

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## Research Interests

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My research interests lie in graph machine learning, representation learning, and data mining. My research aims to enhance machines with greater capability of modeling real-world data in graph structures. Primarily, I focus on strengthening the model's expressiveness of capturing complex relationships and advancing its application in the link prediction task. Furthermore, I am interested in the application of molecular representation learning to propel advancements in chemical science. Additionally, I also build data-driven applications designed to helping people make better decisions.

## Education

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<b>University of Notre Dame</b> , Notre Dame, IN, US Ph.D. Candidate in Computer Science and Engineering Advisor: <a href="#">Prof. Nitesh V. Chawla</a> (ACM & IEEE & AAAI & AAAS Fellow)	Aug 2021 – Present
<b>University of Illinois at Urbana-Champaign</b> , Champaign, IL, US Master of Science in Statistics	Aug 2016 – May 2018
<b>Sichuan University</b> , Chengdu, China Bachelor of Science in Mathematics	Aug 2012 – July 2016

## Publications [\[Google Scholar\]](#)

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### [Selected Peer-Reviewed Publications](#)

- [Neurips'24] [Pure Message Passing Can Estimate Common Neighbor for Link Prediction](#)  
**Kaiwen Dong**, Zhichun Guo, Nitesh V. Chawla  
*The Conference on Neural Information Processing Systems*, 2024
- [LoG'22] [FakeEdge: Alleviate Dataset Shift in Link Prediction](#)  
**Kaiwen Dong**, Yijun Tian, Zhichun Guo, Yang Yang, Nitesh V. Chawla  
*The Learning on Graphs Conference*, 2022
- [ECML PKDD'21] [An Optimized NL2SQL System for Enterprise Data Mart](#)  
**Kaiwen Dong**, Kai Lu, Xin Xia, David Cieslak, Nitesh V. Chawla  
*The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*, 2021
- [AAAI'23] [Heterogeneous Graph Masked Autoencoders](#)  
Yijun Tian, **Kaiwen Dong**, Chunhui Zhang, Chuxu Zhang, Nitesh V. Chawla  
*The AAAI Conference on Artificial Intelligence*, 2023

### [Preprints and Under Submissions](#)

- [KDD'25] [Transaction Categorization in QuickBooks with Relational Deep Learning](#)  
**Kaiwen Dong**, Xiang Gao, Ayan Acharya, Maria Kissa, Hilaf Hasson, Mauricio Flores, Nitesh V. Chawla, Kamalika Das  
*Under Submission*, 2025
- [TKDD] [CORE: Data Augmentation for Link Prediction via Information Bottleneck](#)  
**Kaiwen Dong**, Zhichun Guo, Nitesh V. Chawla  
*Under Submission*
- [WSDM'25] [You do not have to train Graph Neural Networks at all on text-attributed graphs](#)  
**Kaiwen Dong**, Zhichun Guo, Nitesh V. Chawla  
*Under Submission*, 2025
- [WSDM'25] [Universal Link Predictor By In-Context Learning on Graphs](#)  
**Kaiwen Dong**, Haitao Mao, Zhichun Guo, Nitesh V. Chawla  
*Under Submission*, 2025

[ICLR'25]	<b>Node Duplication Improves Cold-start Link Prediction</b> Zhichun Guo, Tong Zhao, Yozen Liu, <b>Kaiwen Dong</b> , William Shiao, Mingxuan Ju, Neil Shah, Nitesh V. Chawla <i>Under Submission, 2025</i>
[AAAI'25]	<b>MolX: Enhancing Large Language Models for Molecular Learning with A Multi-Modal Extension</b> Le Huy Khiem, Zhichun Guo, <b>Kaiwen Dong</b> , Xiaobao Huang, Bozhao Nan, Roshni Iyer, Xiangliang Zhang, Olaf Wiest, Wei Wang, Nitesh V. Chawla <i>Under Submission, 2025</i>

## Professional Experience

<b>Research Assistant</b> University of Notre Dame Worked on robustness and efficiency of link prediction Advisor: Prof. Nitesh V. Chawla	August 2022 – Present
<b>Research Scientist Intern</b> Intuit Inc. Worked on transaction categorization with relational databases Mentors: Dr. Kamalika Das and Dr. Xiang Gao	April 2024 – July 2024
<b>Data Scientist</b> Aunalytics Inc. Worked on systems converting natural language to SQL Supervisor: Dr. David Cieslak	June 2028 – July 2021

## Teaching Experience

<b>CSE 21312 Data Structures</b> (Prof. Matthew Morrison) <ul style="list-style-type: none"> <li>Role: Teaching Assistant</li> <li>Duties: Review assignments, Q&amp;A during office hours, Grade</li> </ul>	Fall 2021
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## Professional Services

<b>Conference Reviewer</b>	
International Conference on Learning Representations ( <b>ICLR</b> )	2025
Neural Information Processing Systems ( <b>NeurIPS</b> )	2024
SIGKDD Conference on Knowledge Discovery and Data Mining ( <b>KDD</b> )	2025, 2024
Conference on Information and Knowledge Management ( <b>CIKM</b> )	2024
International Conference on Artificial Intelligence and Statistics ( <b>AISTATS</b> )	2025
<b>Journal Invited Reviewer</b>	
ACM Transactions on Knowledge Discovery from Data ( <b>TKDD</b> )	2023

*Last updated on Oct. 12, 2024*