

Bo Ni

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EDUCATION

Vanderbilt University, Nashville, Tennessee, USA

- Ph.D in Computer Science Dec 2023 – Present
 - Advisor: Dr. Tyler Derr
 - Research Areas: Information Retrieval, Knowledge Enhanced Language Models, Trustworthy AI, AI Safety

University of Notre Dame, Notre Dame, Indiana, USA

- B.S in Mathematics and Computing Aug 2017 – May 2021
 - Graduated with *cum laude*.
 - Dean's List All Semester
 - Cumulative GPA: 3.93 / 4.00; Major GPA: 3.97 / 4.00

RESEARCH EXPERIENCE

Network and Data Science Lab, Vanderbilt University

- Graduate Research Assistant. Dec 2023 – Present
 - Advisor: Dr. Tyler Derr
 - Focus: Knowledge Enhanced Language Models, Trustworthy AI, Retrieval Augmented Generation, AI Safety, Temporal Network Modelling, LLM Reasoning and Planning

Lab of Data Mining and Decision Making (DM²), University of Notre Dame

- Undergraduate Research Assistant. Aug 2019 – May 2021
 - Advisor: Prof. Meng Jiang
 - Focus: Graph Machine Learning, Text Analysis, Social Network Analysis, Fraud Detection

Laboratory of Medical Imaging and Computation, Harvard Medical School

- Research Assistant. May 2019 – Jul 2019
 - Advisor: Dr. Synho Do
 - Focus: Medical Image Analysis on Chest X-Ray

Social Sensing Lab, University of Notre Dame

- Undergraduate Research Assistant. Aug 2018 – May 2019
 - Advisor: Prof. Dong Wang
 - Focus: Image-based Text Generation

INDUSTRY EXPERIENCE

Adobe Research, Adobe

- Research Scientist Intern May 2025 – Aug 2023
 - Advisor: Dr. Ryan Rossi
 - Focus: LLM Reasoning and Personalization, User Simulation.

Amazon Athena, Amazon Web Service

- Software Development Engineer Sep 2021 – Dec 2023
 - Selected Projects: API Support for Athena's Parameterized Query; Native Support for Athena's Fine Grained Access Control; Error Framework Improvements for Athena's DDL Queries.

The Jarvis Lab, Tencent

- Data Analyst Jun 2018 – Jul 2018
 - Project: Representation Learning from Medical Text Data. Extracted smoking habits from over 10000 patients' self reports and achieved a final 0.92 AUC with ensemble methods in lung disease prediction.
 - Focus: Natural Language Processing, Representation Learning, Machine Learning in Medical Application.

PUBLICATIONS

CONFERENCES

- [C6] [Bo Ni](#), Yu Wang, Lu Cheng, Erik Blasch, Tyler Derr "Towards Trustworthy Knowledge Graph Reasoning: An Uncertainty Aware Perspective" In *The 39th Annual AAAI Conference on Artificial Intelligence (Acceptance Rate 23.4%)*, Dec 2024.
- [C5] [Bo Ni](#) "Reliable Knowledge Graph Reasoning with Uncertainty Quantification" in *ACM International Conference on Information and Knowledge Management (CIKM) Ph.D Symposium Short Paper (Acceptance Rate 26%)*, Jul 2024.
- [C4] Yu Wang, Nedim Lipka, Ruiyi Zhang, Alexa Siu, Yuying Zhao, [Bo Ni](#), Xin Wang, Ryan Rossi, Tyler Derr "Augmenting Textual Generation via Topology Aware Retrieval" in *The Conference on Information and Knowledge Management (CIKM '24) Full Paper (Acceptance Rate 23%)*, Jul 2024.

- [C3] B. Ni, T. Zhao, W. Yu, M. Jiang. “Action Sequence Augmentation for Early Graph-based Anomaly Detection” in *ACM International Conference on Information and Knowledge Management (CIKM)*, Nov 2021.
- [C2] B. Ni, T. Zhao, W. Yu, M. Jiang. “Early Fraud Detection with Augmented Graph Learning” in *Spotlight Presentation at the Second International Workshop on Deep Learning on Graphs (DLG-KDD ’21)*, Aug 2020.
- [C1] DY. Zhang, B. Ni, Q. Zhi, T. Plummer, Q. Li, H. Zeng, Q. Zeng, Y. Zhang, D. Wang “Through The Eyes of A Poet: Classical Poetry Recommendation with Visual Input on Social Media” in *Advances in Social Analysis and Mining (ASONAM ’19)*, Aug 2019.

PREPRINTS

- [P5] B. Ni, L. Wang, Y. Wang, B. Kveton, F. Deroncourt, Y. Xia, H. Chen, R. Leura, S. Basu, S. Mukherjee, P. Mathur, N. Ahmed, J. Wu, L. Li, H. Zhang, R. Zhang, T. Yu, S. Kim, J. Gu, Z. Tu, A. Siu, Z. Wang, D. S. Yoon, N. Lipka, N. Park, Z. Lin, T. Bui, Y. Zhao, T. Derr, R. A. Rossi. “Large Language Models for Conversational User Simulation: A Comprehensive Survey” *HAL Preprint hal-05217179, version 1*, Aug 2025.
- [P4] L. Li, P. Cai, R. A. Rossi, F. Deroncourt, B. Kveton, J. Wu, T. Yu, L. Song, T. Yang, Y. Qin, N. K. Ahmed, S. Basu, S. Mukherjee, R. Zhang, Z. Hu, B. Ni, Y. Zhou, Z. Wang, Y. Huang, Y. Wang, X. Zhang, P. S. Yu, X. Hu, Y. Zhao. “A Personalized Conversational Benchmark: Towards Simulating Personalized Conversations” *arXiv Preprint arXiv:2505.14106*, May 2025.
- [P3] B. Ni, Z. Liu, L. Wang, Y. Lei, Y. Zhao, X. Cheng, Q. Zeng, L. Dong, Y. Xia, K. Kenthapadi, R. Rossi, F. Deroncourt, M. M. Tanjim, N. Ahmed, X. Liu, W. Fan, E. Blasch, Y. Wang, M. Jiang, T. Derr. “Towards Trustworthy Retrieval Augmented Generation for Large Language Models: A Survey” *arXiv Preprint arXiv:2502.06872*, Feb 2025.
- [P2] L. Wang, Y. Wang, B. Ni, Y. Zhao, T. Derr. “Large Language Model-based Augmentation for Imbalanced Node Classification on Text-Attributed Graphs” *arXiv Preprint arXiv:2410.1688*, Oct 2024.
- [P1] B. Ni, Z. Guo, J. Li, M. Jiang. “Improving Generalizability of Fake News Detection Methods using Propensity Score Matching” *arXiv Preprint arXiv:2002.00838*, Dec 2019.

IN-SUBMISSION

- [S4] B. Ni, T. Derr. “Event-Driven Cascade Updates in Knowledge Graphs” *ARR October*, Oct 2025.
- [S3] B. Ni, H. Fu, T. Derr. “Privacy-Preserving Knowledge-Injected LLMs: Ensemble Membership Inference Defense with LLM-as-a-Judge” *ARR October*, Oct 2025.
- [S2] B. Ni, B. Kveton, F. Deroncourt, S. Basu, P. Mathur, N. Ahmed, J. Wu, R. Zhang, T. Yu, A. Siu, Z. Wang, D. S. Yoon, N. Lipka, N. Park, Z. Lin, T. Bui, T. Derr, R. A. Rossi. “Reasoning-based Personalized Generation for Users with Sparse Data” *ICLR 2026*, Sep 2025.
- [S1] B. Ni, L. Wang, Y. Wang, B. Kveton, F. Deroncourt, Y. Xia, H. Chen, R. Leura, S. Basu, S. Mukherjee, P. Mathur, N. Ahmed, J. Wu, L. Li, H. Zhang, R. Zhang, T. Yu, S. Kim, J. Gu, Z. Tu, A. Siu, Z. Wang, D. S. Yoon, N. Lipka, N. Park, Z. Lin, T. Bui, Y. Zhao, T. Derr, R. A. Rossi. “Large Language Models for Conversational User Simulation: A Comprehensive Survey” *ARR July (Initial Score: 3/3/3.5)*, Aug 2025.

AWARDS & SCHOLARSHIPS

- Dean’s List, All Semester, University of Notre Dame 2017 – 2021
For attaining a semester GPA of at least 3.8.
- Honorable Mention, CRA Outstanding Undergraduate Research Award Dec 2020
Awards undergraduates in North America who show outstanding research potential in computing research.
- ASA DataFest, Best External Source Prize, \$1000 Apr 2019
Awarded for our project in sports data analysis.
- Whitman Family Fellowship, Notre Dame Career Center, \$4000 Apr 2019
- Liu Institute for Asian Studies Summer Fellowship, Notre Dame Career Center, \$1000 May 2018

CAMPUS ACTIVITIES

- CS For Good**, University of Notre Dame Aug 2018 – May 2019
 - Project Leader, Catholic Social Teaching Project
 - Worked with Prof. Sedmak to create a data base that would host his student’s reflections.
 - Volunteer, South Bend Code School
 - Taught technical skills to school-aged kids from traditionally under-represented background in tech community.

**PROFESSIONAL
SERVICE**

Program Committee

- AAAI 26'

Conference (Sub)Reviewer

- ARR 2026 July, October Cycle
- AAAI 25', 26'
- KDD 20', 21', 24', 25'
- WSDM 24'
- WWW 24'
- CIKM 21'
- WSDM 20'

Journal Reviewer

- TKDD

LANGUAGES

- English: Professional - TOEFL 116/120 (Reading: 30, Listening 30, Speaking 26, Writing 30).
- Chinese: Native Language.
- Japanese: Intermediate (reading); basic (speaking, writing).

[Bo Ni's Curriculum Vitae updated on 2025-11-04]