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
  - Advisor: Dr. Meng Jiang
  - Research Area: Graph Machine Learning, Anomaly Detection, Behavioral Modelling
  - 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 (DM^2), 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

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*, 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 (Accpetance Rate 23%)*, Jul 2024.

[C3] <u>B. Ni</u>, 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] <u>B. Ni</u>, 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, <u>B. Ni</u>, 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

[P3] <u>B. Ni</u>, Z. Liu, L. Wang, Y. Lei, Y. Zhao, X. Cheng, Q. Zeng, L. Dong, Y. Xia, K. Kenthapadi, R. Rossi, F. Dernoncourt, 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] <u>B. Ni</u>, Y. Wang, L. Wang, 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] <u>B. Ni</u>, Z. Guo, J. Li, M. Jiang. "Improving Generalizability of Fake News Detection Methods using Propensity Score Matching" *arXiv Preprint arXiv:2002.00838*, Dec 2019.

AWARDS & SCHOLARSHIPS	■ Dean's List, All Semester, University of Notre Dame For attaining a semester GPA of at least 3.8.	2017 – 2021
	■ Honorable Mention, CRA Outstanding Undergraduate Research Award Awards undergraduates in North America who show outstanding research potential in computing research.	Dec 2020
	■ ASA DataFest, Best External Source Prize, $1000 Awarded for our project in sports data analysis.	Apr 2019
	■ 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

Conference (Sub)Reviewer

- KDD 20', 21', 24'
- 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 2025-03-14*]