

# Bo Ni

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## EDUCATION

### 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

### Lab of Data Mining and Decision Making (DM<sup>2</sup>), 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 Oct 2021 – Present
  - Selected Projects: API Support for Athena's Parameterized Query; Native Support for Athena's Fine Grained Access Control (GA in Oct 2022); 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

- [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

- [P1] B. Ni, Z. Guo, J. Li, M. Jiang. "Improving Generalizability of Fake News Detection Methods using Propensity Score Matching" *Preprint*, Dec 2019.

## 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 undergraduate students in North American universities who show outstanding research potential in an area of 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.

**SELECTED  
PROJECTS**

**Action Sequence Augmentation for Early Graph-based Anomaly Detection**

- In this work, we propose Eland, a novel framework that uses action sequence augmentation for early anomaly detection. Eland utilizes a sequence predictor to predict next actions of every user and exploits the mutual enhancement between action sequence augmentation and user-action graph anomaly detection. Experiments on three real-world datasets show that Eland improves the performance of a variety of graph-based anomaly detection methods.

**Classical Poetry Recommendation with Visual Input on Social Media**

- In this paper, we present iPoemRec - a new image-driven poetry recommender system that takes a traveler’s photo as input and recommends classical poems that can enrich the photo with aesthetically pleasing quotes from the poems. The proposed iPoemRec system addresses the current challenges in the field by developing heterogeneous information network and neural embedding techniques

**API Support for Athena’s Parameterized Query**

- Parameterized queries are often used when a query has criteria that changes from one execution to the next and to protect user data from SQL injection. With the new change introduced to Athena, developers using parameterized queries in their applications can take advantage of an enhanced query execution API which allows you to provide the execution parameters and SQL in a single call.

**PROFESSIONAL  
SERVICE**

**Conference Reviewer**

- CIKM 21’
- KDD 20’ KDD 21’
- WSDM 20’

**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 2022-09-05]