

Daking Rai

Fairfax, Virginia, USA

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Research Interests

My research interest lies in the interpretability of neural networks and its practical usage. Although neural networks exhibit remarkable performance across a broad spectrum of tasks, their inherent opaqueness poses a significant challenge. This motivates my research to investigate the inner workings of neural networks through mechanistic interpretability, a subfield of interpretability that attempts to understand neural networks by reverse engineering them.

Education

George Mason University

Ph.D. student in Computer Science

Fairfax, VA

Aug 2021 – Aug 2026 (Expected)

- **Relevant Courses:** Machine Learning, Theory/Application Data Mining, Advanced NLP, Analysis of Algorithms, Software Testing, Computer Communication and Networking, Database Systems, , Research Methodologies in CS.

Tribhuvan University

Bachelors in Computer Science and Information Technology

Kathmandu, Nepal

Aug. 2012 – Aug. 2016

- Awarded "Outstanding Student of the Batch 2012" Award

Publications

PEER-REVIEWED PAPERS

Daking Rai, Bailin Wang, Yilun Zhou and Ziyu Yao. **Improving Generalization in Language Model-based Text-to-SQL Semantic Parsing: Two Simple Semantic Boundary-Based Techniques.** *Annual Meeting of the Association for Computational Linguistics (ACL)*, July 2023.

Daking Rai, Yilun Zhou, Bailin Wang and Ziyu Yao. **Explaining Large Language Model-Based Neural Semantic Parsers . AAAI Student Abstract and Poster Program**, February 2023.

Work Experience

Graduate Research Assistant

George Mason University NLP Lab

Fairfax, VA, USA

May 2022 - Present

- Advisor(s): Prof. Ziyu Yao
- Broad research on interpretability and explanation of neural networks.

Graduate Teaching Assistant

George Mason University

Fairfax, VA, USA

Aug 2021 - April 2022

- Teaching Assistant for Computer Systems and System Programming (CS531)
- Teaching Assistant for Essentials of Computer Science (CS110)

Artificial Intelligence Engineer

Infodev Pvt Ltd

Fairfax, VA, USA

April 2019 - June 2020

- Led computer vision team as a lead engineer.
- Worked on face recognition and aliveness detection as a prototype to replace biometric attendance system.
- Worked on a prototype for Object detection and localization for the application of product recognition.
- Worked on integrating semantic search with Named Entity Recognizer (NER) and Customer review sentiment analysis for an e-commerce website.

Lecturer/Instructor

Islington College

Kathmandu, Nepal

Oct 2018 – Feb 2019

- Taught classes on "The Introduction to Artificial Intelligence" course for 70+ undergraduate students.

Executive Committee Member / Tech Lead

Rose Foundation Nepal

Lalitpur, Nepal

Oct 2016 – Mar 2018

- Organized annual event called "Walkathon – Together For Hope" where more than 1500 people participated.
- Initiated and executed the airing of radio program in Kantipur FM called cancer clinic.
- Initiated and organized two editions of 'Shivangi's Night For Charity', a musical event fundraiser, which raised more than NPR 12,00,000 and supported 12 underprivileged children battling cancer at Kanti Childrens Hospital.

Volunteers

- Served as a secondary reviewer for **NeurIPS'23**.
- Volunteer for "The 10th annual Mid-Atlantic Student Colloquium on Speech, Language and Learning".
- Volunteer for "The third ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO '23)".
- Executive committee member (volunteer) for Rose Foundation Nepal, an NGO working to raise awareness about different types of cancers, especially breast cancer in Nepal.

- Organizer and mentor on 10+ machine learning and deep learning workshops conducted by AI Developer Nepal, an AI community based in Kathmandu.

Awards

- Graduate Student Travel Fund (GSTF) for ACL 23.
- Honorary mention in the poster session of GMU CS Research Symposium.
- “Outstanding Student of the Batch 2012” Award. Tribhuvan University, Kathmandu Aug. 2016 Bachelors in Computer Science and Information Technology.

Languages

English Professional proficiency

Nepali Native proficiency

References

Ziyu Yao (ziyuyao@gmu.edu)

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