

XIAOYAN(ELENA) BAI

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OBJECTIVE

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I am a first year PhD student in CS from University of Chicago, seeking internship in Summer 2025 for research assistant or NLP researcher.

EDUCATION

University of Chicago

PhD student in Computer Science

September 2024 – Present

Illinois, United States

University of Michigan, Ann Arbor

B.S.E in Computer Science, Minor in Art and Design

September 2022 – April 2024

Michigan, United States

GPA: 3.866/4.00

Relevant coursework: Machine Learning, Intro to Natural Language Processing, Computer Vision

SKILLS

Programming Skill: Python, PyTorch, HTML, React, Unity, Java, Matlab, C/C++

PUBLICATIONS

Learn To be Efficient: Build Structured Sparsity in Large Language Models. (*Neurips 2024*), **Spotlight**
Haizhong Zheng, **Xiaoyan Bai**, Beidi Chen, Fan Lai, Atul Prakash

A Mechanistic Understanding of Alignment Algorithms: A Case Study on DPO and Toxicity. (*ICML 2024*), **Oral (Top 1.5% of submissions)**

Andrew Lee, **Xiaoyan Bai**, Itamar Pres, Martin Wattenberg, Jonathan K. Kummerfeld, Rada Mihalcea

RESEARCH EXPERIENCE

Interpreting Linear Representations in Language Models

Undergrad Research Assistant in Language and Information Technology (LIT) Lab

November 2023 – May 2024

Michigan, United States

- Devle into the current linear representations focusing on decision making process.
- Implement linear probing in language models to intervene the model behaviors.

Sparsity in Large Language Models

Undergrad Research Assistant in Prof. Atul Prakash's Lab

August 2023 – May 2024

Michigan, United States

- Experiment in the sparsity of models to improve the inference efficiency in GeLU-based LLMs.
- Introduce grouping methods to convert the model into Mixture of Experts to robust efficiency.

WORKING EXPERIENCE

Teaching Assistant | *University of Chicago*

October 2024 – December 2024

- Design course materials, including homeworks, lecture demos and reflection notes
- Hold office hours and recitation class to help student understand the materials

Grader for Foundations of CS | *University of Michigan*

September 2023 – December 2023

Teaching Assistant | *Massachusetts Institute of Technology Lincoln Lab*

June 2023 – August 2023

- Create course materials for combining modern methods in machine learning and game-like modeling to quantitatively analyze socially relevant technology and policy questions

AI Training Assistant Internship | *Emogent*

December 2021 – January 2022

- Preprocess and analyze the training data by Python for the interactive AI Irene, which serves in the museum as a guide.

SERVICE

ACL ARR | *reviewer*

2024

HONORS

China Collegiate Algorithm Design and Programming Challenge Contest | *Bronze Medal*

20, March 2021

Undergraduate Scholarship | *Awarded for excellent academic performances*

September 2020 - August 2021