Xiaoyan(Elena) Bai

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OBJECTIVE

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 September 2024 – Present
PhD student in Computer Science *Illinois, United States*

University of Michigan, Ann Arbor September 2022 – April 2024
B.S.E in Computer Science, Minor in Art and Design *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 November 2023 – May 2024
Undergrad Research Assistant in Language and Information Technology (LIT) Lab *Michigan,United States*
- Devle into the currect linear representations focusing on decision making process.
- Implement linear probing in language models to intervene the model behaviors.

Sparsity in Large Language Models August 2023 – May 2024
Undergrad Research Assistant in Prof. Atul Prakash's Lab *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

ICLR SCOPE workshop | *reviewer* 2025
ICLR DeLTa workshop | *reviewer* 2025
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