

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 2024 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

Shanghai Jiao Tong University

September 2020 – August 2024

B.S. in Electronic and Computer Engineering

Shanghai, China

GPA: 3.40/4.00

Relevant coursework: Intro to Logic Design

SKILLS

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

PUBLICATIONS

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

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

Learn To be Efficient: Build Structured Sparsity in Large Language Models. *Pre-print, 2024*

Haizhong Zheng, Xiaoyan Bai, Beidi Chen, Fan Lai, Atul Prakash

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 current 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 – Present

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.

PROJECT EXPERIENCE

Poetry-Generating AI Design Research

November 2022 – April 2023

Student Researcher

Michigan, United States

- Pre-process poetry data and fine-tune language model using Python to train it to generate model.
- Collaborated 1:1 with mentor to analyze the generated results to figure out the possible cause for repetition with Python.

Roboo

March 2023 – April 2023

Collaborator

Michigan, United States

- Created a puzzle-solving platform game where players can control bubbles to solve puzzles in Unity.
- Utilized project management skills to make sure project was executed based on timeline.

WORKING EXPERIENCE

Grader for Foundations of CS | University of Michigan

June 2023 – August 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.