Jack Sanderson
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EDUCATION

The University of Chicago — Chicago, IL
Bachelor of Arts in Computer Science
Bachelor of Arts in Statistics — Expected June 2027

EXPERIENCE & LEADERSHIP

UChicago Data Science Institute — Chicago, IL
Research Assistant — June 2024 – August 2024

- Utilized PyTorch and Transformers libraries to fine-tune transformer-based large language models for summarization of convoluted and lengthy (1500+ word) legal documents pertaining to international bank finances.
- Created multiple bespoke models capable of creating summaries of documents with 90% of relevant information at 10% of the original length.

UChicago XLab AI Safety Group — Chicago, IL
Research Assistant — October 2024 – Present

- Developing the first benchmark to evaluate memory in computer-using agents.
- Previously, analyzed the relationship between compute and algorithmic progress across AI architectures.
- Designed a framework for assessing whether algorithmic improvements at low compute scales generalize to large-scale systems; conducted experiments with PyTorch confirming key assumptions.
- Researched AI alignment challenges and security vulnerabilities in large language models, analyzing deceptive behavior, adversarial examples, and mitigation techniques such as RLHF.

UChicago Data Science Institute — Chicago, IL
Teaching Assistant — January 2025 – Present

- Mentor and provide code reviews for teams of undergraduate and graduate students in a project-based course where students act as data scientists, collaborating with real-world clients.

Illinois Science and Technology Coalition, Horizon Therapeutics — Chicago, IL
Student Intern — June 2022 – August 2022

- Reviewed literature on healthcare-access disparities within the Chicagoland area.
- Constructed prototype of healthcare access awareness website to address inequality; pitched website to local stakeholders.

TECHNICAL PROJECTS

Shell with LZW Compression Algorithm — Chicago, IL
Academic Project — February 2024 – March 2024

- Implemented an LZW-based file compression utility within a custom C shell, achieving up to 50% lossless file size reduction; optimized performance through variable encoding sizes and dynamic code pruning.

Interactive UChicago Crime Map — Chicago, IL
Independent Project — December 2023

- Utilized Python's Pandas and R's sf and leaflet to web scrape, clean, geocode, and map over 1000 UChicago-area crimes from the UChicago Police Department's website.
- Deployed map as a website to serve as a safety resource for the student body (uchicago-crime.github.io/map).

SKILLS

- Python, pytest, NumPy, pandas, scikit-learn, PyTorch, DeepSpeed, Transformers, Docker, R, tidyverse, sf, Leaflet.
- C, gdb, Assembly, make, Git, Linux command line, Google Sheets, Excel.