Tim Hua

Independent AI Safety Researcher. Formerly on John List's economics team at Walmart timhua0@gmail.com Website: <u>timhua.me</u>

EDUCATION & SKILLS

Middlebury College

Middlebury, VT

BA, summa cum laude, Economics (GPA 3.97/4.00)

May 2023

D.K. Smith Economics Prize for best thesis (Fox News's Effect on Social and Moral Preferences).

• Thesis cited by Harvard economist Benjamin Enke in Moral Boundaries

Harvard College

Cambridge, MA

Visiting Undergraduate Student (**GPA: 4.0/4.0**)

2021 - 2022 School Year

• Coursework: Intermediate Microeconomics: Advanced, Great Theorems of Microeconomic Theory, Probability, Statistics. Taken at MIT: Real Analysis, Political Economy

General skills: Pytorch/Python, R, SQL, Stata.

AI SAFETY RESEARCH

Neel Nanda MATS Training Program

Remote

Scholar Apr 2025 - Current

Accepted (with funding) to Neel's training program in mechanistic interpretability.

Tyler Tracy's MARS Mentee in AI Control

Berkeley, CA

Researcher

Jan 2025 - Current

- Working with Tyler Tracy (Redwood) on evaluating and formalizing new control protocols.
- Modeling how to optimally allocate budget between human auditing, an expensive and accurate monitor, and a cheaper but less accurate monitor.
- Presented poster and gave a lightning talk at Control Conf.

Alice Rigg's AI Safety Camp Mentee in Mechanistic Interpretability

Remote

Researcher

Jan 2025 - Current

Working with Alice Rigg on mechanistic interpretability studying the functional role of SAE

Miscellaneous projects

error terms.

- BlueDot Economics of Transformative AI Course Facilitator (Feb 2025 Cohort)
- Wrote a critique of the bias in bios experiment in Sparse Feature Circuits on alignment forum.
- Conceived and explored a control protocol where the untrusted model writes a plan and delegates the execution to a trusted model. Writeup and <u>pilot results here</u>.
- Interpreting obfuscating jailbreaks together with Veniamin Veselovsky, some results are here.

PROFESSIONAL EXPERIENCES

Walmart Economics Team

New York, NY

Manager, Economist Intern in summer Worked on monetary incentives for drivers on Walmart's larger and the summer was a summer of the summer of the summer was a summer of the summer of the summer of the summer was a summer of the summer

Intern in summer 2022, full time July 2023 – Aug 2024

Worked on monetary incentives for drivers on Walmart's last mile delivery platform.

- Designed and executed numerous experiments, some with multiple treatment arms.
- Built ML models using causal random forests and other double ML methods, ran hyperparameter sweeps with out-of-sample off-policy validation following <u>Treatment Allocation Under Uncertain Costs</u>
- Wrote R code that conducts synthetic difference in differences estimation and calculates conformal inference-based confidence in parallel. Code reused by others on my team.
- Presented work to Walmart chief economist John List, fifth ranked economist in the world
- Translated technical findings and frameworks for non-technical partner business teams

As an intern, created pricing zones that minimized customers' cross-zone shopping by constructing a weighted graph of Walmart stores and partitioning the graph.

• Pricing zones are still used at Walmart today

Harvard Economics Department

Remote

Course Assistant for Professor Edward Glaeser

June 2022 – Dec 2022

• Wrote sections in the textbook of Econ 1011a: Intermedia Microeconomics: Advanced.

Harvard Kennedy School

Cambridge, MA

Research Assistant for Professor Desmond Ang

March 2022 – July 2022

• Scraped tytropes.org for an exploratory project investigating stereotypes in films.

Brookings Institution

Remote

Research Assistant for Professor Carol Graham

June 2021 – May 2022

• Coauthor on <u>paper</u> examining mental and physical ill-being during the COVID-19 pandemic.

Middlebury Economics Department

Middlebury, VT

Research Assistant for Professor Marin Abel

September 2020 - March 2021

• Investigate how different compensation schemes could help close the behavior-intention gap.