Harrison Stropkay

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Education

Dartmouth College June 2025
Computer Science & Mathematics double major GPA: 3.96
Phi Beta Kappa, Magna Cum Laude, Jack Byrne Scholar of Mathematics

Relevant Coursework: Linear algebra*, Computer architecture*, Evolutionary game theory*, Set theory*, Statistics*, Object-oriented programming*, Machine Learning, Deep Learning, Deep Learning Robustness, Computer Vision, Computational Linguistics, Information Theory, Software Design
*Awarded Citation for Academic Excellence

Research

"On the Literary Landscapes of Vector Embeddings" September 2025
Rockmore et al.

- Co-author of a paper accepted for publication in Computational Humanities Research (publication pending)
- Conducted a large-scale evaluation of embedding models on preserving genre information in book snippets

Undergraduate Thesis: A Stylometric Application of LLMs Fall 2024 – Spring 2025
Advisor: Professor Daniel Rockmore
Awarded High Honors in Computer Science

- Trained small GPT models on individual authors' works to represent unique writing styles
- Achieved 100% authorship attribution accuracy across 8 authors using a cross-entropy loss comparison
- Confirmed Ruth Plumly Thompson's authorship of the contested 15th book in the *Oz* series

Generalized Mixup for Deep Learning Spring 2024
CS 78 (Deep Learning)

- Developed a confusion matrix-based adaptive sampling strategy for *mixup* data augmentation
- Improved ResNet18 accuracy by 0.5-0.6% over standard mixup on CIFAR-10/100 datasets

Work Experience

Johns Hopkins Applied Physics Laboratory Summer 2024, Summer 2025 – Present
Machine Learning Engineer

- Training a 5B-parameter LLM end-to-end for CBRN-related domain understanding
- Developed an internal Hugging Face–style web platform to support ML workflows
- Trained WGAN models to generate synthetic electronic warfare data
- Conducted security assessments and authored technical reports of open-source LLMs using Garak and Dyana

Dartmouth Computer Science Department Fall 2022– Winter 2023
Teaching Assistant

- TA for CS 10 (Object-Oriented Programming) and CS 50 (Software Design & Implementation)

Projects

Mini Search Engine

- Search engine with crawling, indexing, and querying capabilities, written in C

Y86 CPU

- CPU that executes assembly code, developed in Logisim

Sweeper

- Minesweeper solver that outperforms all human players, written in Python

Blackjack

- Self-improving agent using Q-learning, written in C

Certifications

Security Clearance: Secret, Top Secret interviews underway