

# ISHAAN SINHA

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## EDUCATION

### Harvard University

Cambridge, MA

Bachelor of Arts, Mathematics and Computer Science (GPA: 3.98)

Sep 2024 - May 2028

Selected Coursework: Math 55a+ b, Data Structures and Algorithms, Theoretical Computer Science, Statistical Inference, Machine Learning, Probability I\* and II\*, Differential Analysis I\* and II\* (MIT), Linear and Generalized Linear Models\*, Quantum Learning Theory\*, AI Alignment\*, Foundations of Reinforcement Learning\*, Mathematics of Information Processing\*, Algebraic Combinatorics (MIT), Algebraic Geometry, Spectral Graph Theory\*. \* = Graduate Level courses

**Activities:** Harvard CS Club President, Harvard Math Club Sponsorships Chair, AI Safety Student Team, Harvard Quant Traders, Harvard Dharma, Harvard Chess, Teaching Assistant for Math 55, Putnam Score: 19, Neo Scholar Finalist, John Harvard Scholar

### South Brunswick High School

South Brunswick, NJ

Valedictorian (Rank 1/750)

May 2024

NJ Math Olympiad State Champion, 5x AIME Qualifier, USA Physics Olympiad Honorable Mention, Regeneron Science Talent Search Scholar, World Science Scholar, Stanford University Mathematics Camp, NJ Governor's School, Princeton Math Courses: Single Variable Analysis, Multivariable Analysis, Honors Linear Algebra, Topology, Fourier Series, Measure Theory

## EXPERIENCE

### Amazon Web Services AI

New York City, NY

Software Development Engineering Intern

May - August 2025

- Enhanced orchestration for LLM pipeline behind Amazon Web Service's enterprise language model solution, Amazon Q Business. Designed APIs to track and visualize LLM response steps.
- Created robust pipeline to remove data leakage over long throughput conversations.

### Kempner Institute for the Study of Natural and Artificial Intelligence

Cambridge, MA

Student Researcher with Dr. Carvalho

January 2025 - Current

- Developing novel learning algorithms for collaborative reinforcement learning agents. See work here.

### Princeton Summer School on Fluid Dynamics and Computer Assisted Proofs

Princeton, NJ

Selected for National Science Foundation funded program

August 2025

- Studied Partial Differential Equations and Neural Networks to solve Fluid Flow problems.

## PUBLICATIONS

NiceWebRL: a Python library for human subject experiments with reinforcement learning environments.

*NeurIPS 2025 Workshop for Language, Agent, and World Models*. Arxiv Preprint [here](#).

Feeling the Strength but Not the Source: Partial Introspection in LLMs. Arxiv Preprint [here](#).

Characterizing West-Nile Virus Dynamics with Explainable Machine Learning. *Regeneron Science Talent Search*

## ACTIVITIES

### Harvard Computer Society

Cambridge, MA

President

January 2025 - Present

- Lead the largest and oldest CS organization on campus with over 800 members.
- Organize academic, social, and career events, including course advice, career panels, and study breaks for the computer science community.
- Work with our corporate sponsors to run recruiting events.

### Harvard Undergraduate Mathematics Association

Cambridge, MA

Sponsorships Chair

September 2024 - Present

- Secured mid six figured budget in corporate sponsorship.
- Organized over a dozen events for the Harvard math community, with hundreds of attendees.

## INTERESTS

- Programming: Python, Pytorch, JAX, Julia, Java, Pandas, Statsmodels, Sklearn, Numpy
- Hobbies: Chess(rated 2300, top 99.8%, on chess.com)
- Violin, Tennis, Poker, Cricket