Hillary Yang

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EDUCATION

Carmel High School
Carmel, Indiana

GPA: 4.0 W/4.71 UW *Aug. 2022 – May 2026*

- Relevant coursework: Multivariable Calculus & Linear Algebra; AP Calculus BC; AP Computer Science
- National Merit Scholarship Finalist; US Presidential Scholar Nominee

RESEARCH

Social Reasoning with Vision-Language Models
Jun 2025 – Aug 2025

Personal Robots Group, MIT Media Lab *Cambridge, MA*

- Benchmarked vision-language models on social error detection in anonymized human-robot interactions
- Presented findings at RSI 2025 symposium with an accompanying research paper

Private Linear Regression
Apr 2024 – Dec 2024

Purdue University CS Department

- Implemented and benchmarked privacy frameworks (Differential Privacy and novel PAC Privacy framework)
- Demonstrated PAC's utility advantage across multiple datasets and privacy levels
- Preprint: https://arxiv.org/abs/2412.02578

Rubik's Cube Scrambling
Aug 2024 — Oct 2024

Stanford University

- Proved the first rigorous lower bound on the Rubik's cube scrambling problem (≥ 26 moves)
- Ran supercomputer-assisted Monte Carlo simulations of 53 million cube solves
- Preprint: https://arxiv.org/abs/2410.20630

EXPERIENCE

MIT Research Science Institute (RSI)
Jun 2025 – Aug 2025

Center for Excellence in Education

- One of the most selective high school research programs in the world (<2% acceptance rate)
- One of 60 US students selected to complete original research at MIT

Summer Math Programs
2022 – 2024

Ross Mathematics Program; HCSSiM

- Advanced, college-level summer math programs for high school students

Speedcubing (Rubik's Cube Solving)
2019 – Present

World Cube Association

- **3rd fastest female Pyraminx solver in the nation; 5th globally** (2.80 second average, 1.83s single)
- President of Carmel Cubing Club

Indigo Coding Contest Head Organizer
September 2024

Indigo Coding Contest

- Directed international competitive programming contest drawing 250+ participants across 22 countries
- Secured $1,500 in funding through sponsor outreach and management
- Website: https://indigocode.org/

TECHNICAL SKILLS

Programming: C++, Python, Java, JavaScript, shell scripting (Shell, Bash)
Data & Research: PyTorch, Pandas, NumPy, Matplotlib, machine learning/linear regression
Systems & Security: Linux (Ubuntu/Debian/Mint), high-performance computing (SLURM), SSH