

## ARYAMAN AGARWAL

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## Education

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## The Hotchkiss School

September 2022 – May 2026

High school diploma with honors and accelerated courses

## **Standardized tests**

## Awards and Honors

- 2025 NCTE Achievement Award in Writing – First Class Distinction (Connecticut). | 2025
- 1 Honor roll at Hotchkiss for achieving GPA >10.5 during 1st semester grade 11 | 2024
- 2 Honor roll at Hotchkiss for achieving GPA >9.5 during 1st semester grade 10, grade 9; semester 2 grade 11| 2022-23
- Massachusetts Boys State Delegate | 2025

## **Science and Engineering Experience**

Captain, Hotchkiss FTC Robotics Team (EFX Gearcats) | 2022 - Present

- Dedicated two seasons to designing, programming, and competing with the Hotchkiss Robotics Team.
- Led the team to qualify for the Connecticut State Championship (2023) and the FIRST Robotics World Championship (2024).
- Appointed Team Captain (Fall 2024), overseeing strategy, collaboration, and technical development.

## Research

Author, Comparative Analysis of Stall Phenomena in Fixed-Wing and Rotary Aircraft. | 2024

Researched and authored a technical paper analyzing aerodynamic stall characteristics and recovery techniques in both fixed-wing aircraft and helicopters. Explored differences in stall behavior, underlying aerodynamic principles, and mitigation strategies. Mentored by Dylan Asmar, a PhD student in Aeronautical Engineering at Stanford University. Paper accepted by UCI and awarded **3 college credits** upon completion.

*Authored multiple research papers on Kamdhenu Limited's innovations | 2025*

- Mitigating Lead and VOC Risks Through Green Paint Technologies – examined hazards of traditional paints, proposed eco-friendly alternatives.
- Kamdhenu SS 10000: Redefining TMT Bar Technology in India – analyzed rib design, CNC rib-cutting, and double-rib innovations for safety and strength.
- Evolution of Reinforcement Steel at Kamdhenu Limited – studied the transition from CTD to TMT bars and adoption of Tempcore Technology for seismic resilience.

**Founder, Savor Sustainability | 2023 – Present**

Founded nonprofit using 3D food printing to address malnutrition. Conducted grassroots nutrition research in Indian slums; research paper accepted by a peer-reviewed journal (2025). Built partnerships with food-tech companies and ran outreach workshops, along with conducting interviews with nutritionists.

## **'Makers' Pursuits | 2022 - Present**

- Built 7 robots for FTC competitions; led the team to Connecticut State Championship (2023 and 2025) and Worlds (2024).
- Led rocketry outreach: taught elementary students to design and launch 200-ft rockets, incorporating CAD aerodynamic analysis.
- Civil engineering outreach: introduced younger students to urban planning and CAD (TinkerCAD).  
Built 7 robots to compete in the FTC robotics tournaments.

## **Technology Outreach**

### ***Rocketry outreach led by me | 2024 - 2025***

Taught elementary students the fundamentals of rocketry by guiding them in building and launching rockets reaching altitudes of 200+ feet. Integrated aerodynamics simulations using computer software to analyze and optimize rocket performance.

### ***Civil engineering and circuitry outreach | 2024***

Taught elementary students basic civil engineering and urban planning concepts, simplifying complex ideas through drawings and TinkerCAD software to create interactive, beginner-friendly design projects. Additionally, taught circuit building.

### ***Online course | 2025 - Present***

Six Sigma Yellow Belt Specialization at Coursera

## **Enrichment programs | 2024 - 2025**

- Columbia University SHAPE (2024): Built autonomous maze navigating and firefighting robot; built a prize-winning balsa wood glider.
- Yale Young Writers Workshop (2025): Selected participant under Prof. Emily Skillings.

## **Independent Research | 2025**

Brown University – Stolen Relations Project (2025): Research assistant under Prof. Linford Fisher; archival work on Indigenous slavery.

Civics Unplugged Fellowship (2025)

## **Community Outreach | 2022 - Present**

- Identified the lack of educational resources at *Jantar Mantar*, India's historic timekeeping site, and created an interactive website with QR code access and pamphlet, enabling students and tourists to easily learn about its history and cultural significance.
- Co-Head, Peer Listeners | Hotchkiss (2024–Present): Provide confidential student support and mental-health outreach.
- Founder, Science Bowl at Hotchkiss (2024–Present): Founded and trained team despite limited school funding; inspired by mentorship at Columbia SHAPE.
- Tutor, Learn to Be (2024–Present): Tutored K–12 students in maths and physics, including those with learning disabilities.
- Tour Guide, Hotchkiss (2022–2025): Guided prospective students and families through campus.
- Writer for *ink*, a Hotchkiss based English publication

## **Harmony in Practice | 2017 - Present**

Completed Grade 6 Rockschool Electric Guitar certification (2022). Currently performing as electric guitarist and soloist with *Right Brain Logic* Jazz Band under musician Michael Musillami (2022–present), contributing to original compositions. Also plays electric and bass guitar in the Hotchkiss Student Musical Showcase, a student-run cover band.

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**Languages:** Fluent in English and Hindi; proficient in Spanish (conversational)

**Interests:** Robotics, Math, Guitar, Golf, Comedy, Writing