

RUHAAN ARYA

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EDUCATION

The Village School, Houston	2024-26
• International Baccalaureate, Grade 11-12: Unweighted GPA - 96.23 Weighted GPA - 105.65	
Symbiosis International School, Pune, India	2022-24
• Cambridge IGCSE: 9 A*	

STANDARDIZED TESTS AND APS

• SAT Total: 1580 (Maths - 800; Reading & Writing – 780)	2025
• AP Calculus BC: 5	2025

ACADEMIC AWARDS AND HONORS

INTERNATIONAL AND NATIONAL AWARDS

• Gold CREST Award: British Science Association, 70+ hrs of research on EV Telematics & Sustainability	2025
• Certificate of Distinction, Sir Isaac Newton Contest: Physics Contest, University of Waterloo	2025
• Honor Roll, Fermat Contest: Mathematics Contests, University of Waterloo	2025
• Certificate of Distinction, Cayley, Galois & Hypatia Contests: Mathematics Contests, University of Waterloo	2024-25
• TAPPS State Science Competition: 7 th Place among the top 8 winners	2025
• ICE Distinction Award: Conferred by Cambridge Assessment International Education for 9A* in IGCSE	2024
• Bronze Award, The Duke of Edinburgh International Award (IAYP): 52+ hrs of Creativity, Activity & Service	2023-24
• Gold Medal & School Rank 1: National Olympiad for Mathematics & Science	2023-24
• Certificate of Distinction: Global Economics Olympiad	2023-24

SCHOOL AWARDS

• Subject Excellence Awards: Economics SL & English SL (Language and Literature) - Grade 11	2025
• Commitment Awards: Mathematics AA HL & Physics HL - Grade 11	2025
• School Rank 1: Cambridge IGCSE Additional Mathematics (0606) 98% - Grade 10	2024
• School Rank 2: ICE Achiever Award IGCSE - Grade 10	2024
• Gold Award, National Science Day Quiz Competition: Winner of a competitive High School Science Quiz - Grade 9	2023

LEADERSHIP

Treasurer, Mu Alpha Theta Honor Society (120 members)	
• Directed budgeting, managed income and expenses & fund allocation to strengthen events and led outreach initiatives.	2025-26
Treasurer, Science National Honor Society (100 members)	
• Directed financial planning, optimized event funding, and advanced chapter's STEM engagement initiatives.	2025-26
Co-President, Village Green Team	
• Organized 10+ sustainability drives (Earth Day, Biodiversity habitat design projects); expanded 200+ students in action.	2024-26
Village Academic Team (VAT)	
• Selected for elite interdisciplinary team; represented school in state/national tournaments; mentor junior students for contests.	2024-Present

CARBON FOOTPRINT ENERGY LITERACY DRIVE

Founder & Campaign Lead - REDUCE THAT FOOTPRINT (https://reducethatfootprint.org)	Mar 2025-Present
• Established a carbon footprint literacy initiative aimed at educating youth about sustainability and the environmental impact of daily activities.	
• Built a website providing sustainability resources, workshop information for 6 modules, and tools for users to share feedback or request future events.	
• Collaborated with <i>Sewa USA, AmeriCorps Texas, TBMSG Pune, local elementary & middle schools, and communities</i> to conduct workshops & awareness campaigns (plastic recycling, tree plantation etc) directly engaging 300+ students and collectively preventing more than 150+ kg of CO2 so far.	

SCIENCE & TECHNOLOGY RESEARCH AND EXPERIENCES

RESEARCH

Independent Research Paper - Mentored by Evangelos Lianos, CEO of elvoX	Mar 2025-Aug 2025
<i>"Leveraging Operational Data from Urban Transportation Vehicles for Efficiency Improvement, Environmental Sustainability, and AI based Operational Optimization"</i>	
• Investigated telematics and AI applications to optimize fleet operations, reduce carbon emissions, and improve cost effectiveness in urban logistics; awarded Gold CREST Award and sent for publication at the <i>Journal of Student Research (JSR)</i> .	
Co-Authored Research Paper - Collaborated with peers from MIT Beaver Works Summer Institute	Jul 2025-Aug 2025
<i>"Detecting Illegal Logging Using Deep Learning on Sentinel-1 SAR Imagery"</i> (https://www.journalijar.com/article/56534/detecting-illegal-logging-using-deep-learning-on-sentinel-1-sar-imagery/)	
• Developed a deep learning model using a U-Net-DeepLabV3 architecture to detect illegal logging from Sentinel-1 SAR imagery with 89.55% accuracy, demonstrating a novel application for environmental monitoring. Submitted for publishing at the <i>Internation Journal of Advanced Research (IJAR)</i> and poster presentation at URTC.	

EXPERIENCES

MIT Beaver Works Summer Institute (BWSI) – Remote Sensing for Disaster Response	2025-Aug 2025
• One of 30 students selected nationally for this prestigious 4-week STEM program applying satellite imagery, sensors, and AI to develop solutions for disaster response.	
• Learned Python, pandas, matplotlib, GIS, spatial joins, rasters, Google Earth Engine, image processing, and machine learning geospatial analysis.	
• Part of the planning team for final <i>Capstone Project</i> : predicted hurricane paths, identified evacuation zones, mapped storm surge areas, and created wind-speed probability maps to coordinate a simulated disaster response.	
Research Intern - elvoX, Greek Electric Vehicle Startup (https://www.elvox.net)	Mar 2025-Present
• Conducted sensor research, cost-benefit analysis & predictive maintenance analysis to assist in creating a prototype electric cargo vehicle.	
• Assisted in code development for sensor data integration and analyzed telematics systems for operational efficiency.	
• Proposed E/E architecture designs and conducted market research to support prototype development.	
• Gained hands-on startup experience, balancing innovation with practicality and contributing directly to prototype development.	

Engineering Intern - TXRX Labs, Houston**Jun 2025-Jul 2025**

- Gained hands-on experience with 3D printing materials (PLA, PETG, ABS, TPU), including their melting points, print settings, and behavior during fabrication.
- Designed and modelled parts using Onshape CAD software, applying tools like extrude, revolve, loft, fillet, chamfer, mirror, and extrude cut to create detailed components.
- Created and printed a complete chess set and a functional mechanical claw using CAD, Bambu Studio slicer software, and 3D printers.
- Earned CAD Level2 and Laser Cutting Level 1 certifications through project-based learning and tool proficiency.

Research Intern - Texas Center for Superconductivity (TcSUH), University of Houston**Jun 2025-Jul 2025***(Mentored by Dr. Liangzi Deng and PhD student Ms. Iqra Zahid in Professor Paul Chu's lab)*

- Conducted experimental research on high-pressure superconductivity in thin-film RuO₂/TiO₂ samples using Diamond Anvil Cells (150–200 GPa) and Clamp Cells (2–3 GPa).
- Operated advanced instruments (PPMS, MPMS, Raman spectroscopy) to measure low-temperature (2K) resistivity and magnetic properties.
- Prepared complex experimental setups: mounted diamond anvils, fabricated gaskets, wired platinum contacts, embedded samples in pucks, and built MPMS straws for cryogenic stability.
- Processed and analyzed superconductivity data using OriginPro, applying Ohm's Law and multiple resistance configurations to validate measurements.
- Gained hands-on expertise in precision alignment, cryogenic measurements, and high-pressure experimentation, contributing to cutting-edge superconductivity research.

COURSES & CERTIFICATIONS

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|---|--------------------------|
| • Stanford University Level Online Course: XM521 Multivariable Differential Calculus (8 weeks) - 99.3% | Jun 2025-Jul 2025 |
| • MIT BWSI Python core | 2025 |
| • MIT Version Control: Git & GitHub | 2025 |
| • Harvard University: Computer Science for Artificial Intelligence (5 months) | 2024 |
| ◦ CS50 Introduction to Computer Science (13 weeks) | |
| ◦ CS50AI Introduction to AI with Python (8 weeks) | |
| • ISRO Certification: Space, Science, Technology & Applications Course (2 weeks) | 2023 |

YOUTH EMPOWERMENT & COMMUNITY OUTREACH**Mentor - Bahujan Hitay Girls Hostel, Pune, India (TBMSG Trust); 180+ cumulative hours****2023-Present***Education Empowerment Initiative for under-represented girls - Advancing UNSDG #5 (GENDER INEQUALITY)*[\(https://www.instagram.com/p/DO7jTQ-iKEv/\)](https://www.instagram.com/p/DO7jTQ-iKEv/)

- The hostel, established in 1987, provides residence, education, health and healthcare to girls (aged 10-17) from marginalized communities; over 2300 girls have benefitted.
- Contributed to this initiative by mentoring 70+ girls (ages 10-14) in Science, Maths and Environment through 2 hours weekly interactive hybrid classes, fostering curiosity and confidence.
- Compiled online 50+ lessons to support self-paced learning.
- Fundraised ₹97,000 (\$1100) to provide for electricity bills and 4 desktops for hostel's computer lab.

STEM Educator at Eco Engineers (Village School Club)**Mar 2025-Present**

- Engaged 100+ kids so far with 2 hours weekly fun, practical engineering lessons through hands-on projects using recyclable material that encourage creativity and promoted sustainable thinking; Collaborating with NGOs and community organizations to expand outreach.

Participant 5K Run 4 Hope**Apr 2025**

- Supported Joseph's Warriors in promoting childhood cancer research and fundraising for families of children undergoing treatment in the Gulf Coast Area. Contributed to raise approx. \$5000 in financial assistance for affected families.

ACTIVITIES & INTERESTS**Black Belt Martial Artist (Karate), Japan Karatedo Nobukawa-ha Shito-Ryu-Kai****2021-Present**

- Earned Sho Dan Ho rank - 1st Degree Black Belt diploma (August 2025); 700+ hours of rigorous training, sparring and inter school tournaments.

Electronic Keyboard - Trinity College, London**2021-Present**

- Passed Grade 4 with distinction; advancing to Grade 5.

National Honors Society (NHS)**2025-Present**

- Active member, recognized for academic excellence, leadership and commitment to community service.

Tennis Club, Village School**2024-Present**

- Committed member engaging in intramural and recreational tennis.

National Level Basketball Team Player (Shooting Guard) - Symbiosis International School, Pune(India)**2022-2024**

- Qualified for the extremely prestigious ISSO U17 (International School Sports Organization) National Tournament; undertook 200+ hours of intense training and interschool tournaments; contributed to team strategy and peer motivation.

Speech & Debate Team**2022-24**

- Participated in school and inter school competitions in Grade 9 & 10.

EXPERIENTIAL & GLOBAL LEARNING**Science Expedition - Catalina Island, Los Angeles (1 week)****2024**

Conducted marine biology fieldwork, underwater observations, and ecosystem analysis.

Student Exchange Program - Spain (2 weeks)**2023**

Stayed with host family; attended partner school classes and finished CAS project; immersed in Spanish culture.

Kedarkantha Peak Trek - India (10 days)**2023**

Completed a rigorous high altitude (12,500 ft) trek; learned altitude management, resilience, and environmental stewardship.

LANGUAGES**English:** Fluent **Hindi:** Fluent **Spanish:** Intermediate **Mandarin:** Beginner