

I am an undergraduate student reading Mathematics and Computer Science at Ashoka University. My research interests lie in quantum computation (error correction and fault tolerance) $\cup$ cryptography $\cup$ automata $\cup$ logic. Additionally, I learn, practice, and listen to *karnāṭik* music as a vocal student of the art form for over a decade. The wise words of Auvaiyār are my motto (similar things have naturally been said by other philosophers): “what is learned is but a handful of earth; what remains unknown is as vast as the cosmos” (*karṛatu kaimaṇ aḷavu, kallātatu ulakaḷavu*).

EDUCATION

- **Ashoka University** * BS (Hons) with Research in Math and CS Sonipat, HR, India
CGPA: 3.94/4.00. Aug. 2025 – Present.
- **Neev Academy** Bengaluru, KA, India
IB PYP, MYP (Final: 53/56), DP (Final: 45/45). May. 2009 – Jul. 2025.

SKILLS

- **Programming/Scripting:** Lean 4, Python, Julia, C, JavaScript, Java, GNU Bash.
- **Technologies:** React, Flask, Deno, OpenCV, Arduino, Qiskit, Yolo, Docker.
- **Other Tools:** HTML5, CSS3, $\text{\LaTeX}$, Vim, Git, Inkscape, GNU/Linux.
- **Languages:** English, Tamil, Hindī, Español.
- **Arts:** Vocal Carnatic Music (student for ~13 years).

AWARDS AND ACCOLADES

- **Academic Excellence Award** Neev Academy • Oct. 2024.
 - *Note/s:* Recieved the academic, mathematics, and physics excellence awards from my school for “the highest and most consistent academic achievement while maintaining [...] a well-rounded character.”
- **Special Award at ISEF '24** Mawhiba aff. Kingdom of Saudi Arabia • May. 2024.
 - *Note/s:* At the Regeneron International Science and Engineering Fair 2024, in which over 1500 students across the world participated (see previous award), we were awarded the King Abdullaziz and his Companions Foundation for Giftedness and Creativity award.
- **Grand Award at IRIS** Initiative for Research and Innovation in STEM • Jan. 2024.
 - *Note/s:* Created a vision correcting display, a project that was selected amongst the top 20 teams (shortlisted from thousands of applications) to represent India at Regeneron ISEF 2024.

EXPERIENCE

- **DiagonaLean** Sri City, AP, India
Research Assistant. May. 2026 – Present.
 - *Mentors:* Prof. T.V.H. Prathamesh (Krea University) + Prof. Aalok Thakkar (Ashoka University).
 - *Additional Note/s:* Working on formalizing undecidability proofs in Lean 4 as part of an effort to create a diagonalization/undecidability library for Lean, and implementing a tactic to traverse the reduction graph formed by the theorems formalized.

• **The Microscope Project**

Research Assistant, Centre for Climate Change and Sustainability.

Sonipat, HR, India

Feb. 2026 – Present.

- *Mentor*: Prof. Meghna Agarwala.
- *Additional Note/s*: Using image classification models and classical computer vision to identify pollen species from microscope slides filled with silica and plant debris.

• **Jawaharlal Nehru Centre for Advanced Scientific Research**

Student Researcher.

Bengaluru, KA, India

Jan. 2024 – Jan. 2026.

- *Mentor*: Prof. Vidhyadhiraja Sudhindra.
- *Additional Note/s*: Worked on quantum error correction; specifically, using the Lindbladian master equation formalism to analyze the effectiveness of quantum low density parity check codes implemented in cluster state quantum computers.

• **Ashoka University**

Student Research Intern, aff. Mphasis Labs.

Sonipat, HR, India

Apr. 2023 – Jan. 2025.

- *Mentor*: Prof. Partha Pratim Das.
- *Link*: <https://arxiv.org/abs/2501.01450> .
- *Additional Note/s*: Created a “vision correcting display,” an alternative to glasses that changes rendered images on digital displays to suit the viewer’s vision. Explored effective algorithm design through ideas such as double buffering, and delved into signal processing.

• **The Geekly**

President, Editor, Founder.

Bengaluru, KA, India

Jan. 2018 – Mar. 2025.

- *Founding Principles*: A science magazine emphasizing effective science communication, making complex ideas intuitive without oversimplifying to the point of factual fallacy.
- *Additional Note/s*: Published in collaboration with a peer.

OTHER PROJECTS

- **Saṅgītāmṛtaṁ Service Programme**: Since Jun. 2024, I have been collaborating with NGO Youth For Seva, to plan and teach secular and positive Carnatic songs in local languages to underprivileged children in government schools, thereby promoting Indian heritage and an inclusive mindset.
- **SkriptLearn** : An application to learn new writing systems and practice them. Currently working on including voice recognition of syllables.
- **(Q | uant)** : A quantum computing game aiming to visualize the operations of quantum gates on qubit state, in light of my effort towards effective science communication. Currently reworking the game with a different implementation.
- **Deconvolution-Based Sound Visualizer**: Working on a responsive sound visualizer that exploits ringing artifacts in Wiener deconvolution.
- **Periodic Trajectories of Dynamical Billiards**: *Not yet authorized to release the paper publicly.* My IB Extended Essay in Mathematics was on using analytical mechanics to model dynamical billiards. Acquired a background in non-smooth dynamics, multivariable calculus, PDEs, and some measure theory.