

Rehan Shah

Mobile no.: +91 7575815632 | Email: Rehansnehalshah1@gmail.com | [Github](#)

Links are coded in light blue. They direct you to papers or evidence of my extracurricular activities.

Academic Accomplishments and Standardized Test

Ahmedabad International School (AIS), Ahmedabad, India - Advanced Subsidiary Levels	2022 – Present
Received highest score of 4 A's in Math Economics Physics Further Math	
Ahmedabad International School (AIS), Ahmedabad, India - IGCSE	2019 – 2022
Attained A* across 7 subjects, awarded International Certificate of Education with Distinction	
SAT: 1560 (Math: 790, EBRW: 770)	Oct 2023
TOEFL: 109 (Reading: 30, Listening: 29, Speaking: 24, Writing: 26)	Oct 2024
AP Computer Science A: 5/5	May 2022

Honours and Awards

Notable Awards and Achievements in Science, Technology, and Innovation

School topper in IGCSE Economics, Additional Mathematics, and Further Mathematics	
3rd National and 27th Global Ranking, AAPT Physics Bowl (8,000 participants)	Mar 2024
Achieved USACO Gold in a single contest, with perfect scores in both the Silver and Bronze divisions	Dec 2024
AMC 12 Distinction, only awarded to the top 5 percent of the test takers globally	Nov 2024
Runners up in Indian and Regional Space Settlement Design Competitions	Jan 2024
2nd prize in Silicon Valley Challenge by (SST) bested 18k+ participants, awarded \$600 worth of prize	Jan 2023
Winner of the fall 2023 Junior Academy Challenge from The New York Academy of Sciences	Dec 2023
Received Microsoft & TKS's Future Founder Scholarship	Jun 2024
United First and United Nations honorary certificate for work in Scavenger Relief	Aug 2024
Awarded the best delegate by T.I.D.E & AMC for my leadership in the think tank	Sep 2024
CREST Gold Award for creating Global GPU Network	Jan 2024
Received Gold in Queen's Commonwealth Essay Competition	March 2024

Industry renowned Certifications

Multiple NSE Academy Certifications in Financial Markets (NCFM)	Aug 2023 - June 2024
Earned prestigious certifications from the National Stock Exchange of India, demonstrating expertise in Financial Markets and Mutual Funds	
Tableau Desktop Specialist Certification	Aug 2023
Microsoft Office Specialist: Excel Associate	Sept 2023

Research Publications for Rural Development and Welfare

Springer-Published Research: Big Data & ML for Groundwater assessment	Oct 2021 - Feb 2023
<ul style="list-style-type: none">Published research in Archives of Computational Methods in Engineering titled "The Potential of Big Data and Machine Learning for Ground Water Quality Assessment and Prediction"Co-authored with Manan Shah, a top 2% scientist by Stanford & Elsevier.I led the research on potential machine learning models, evaluating their suitability for data analysis. I also enhanced a section of the literature review for clarity and depth.	
Usage of Blockchain Technology in Welfare Schemes for Developing Countries	Feb 2023 - Jan 2024
<ul style="list-style-type: none">Studied blockchain applications in welfare schemes for developing nations.Reviewed 60+ articles, including case studies on the World Food Program and Indioids Zakat.First author of the paper, guided by Manan Shah. Published in the Iran Journal of Computer Science, revisions pending due to formatting errors.	
Global GPU Network: Performance Benchmarking and Comparison	Feb 2023 - Jan 2024
<ul style="list-style-type: none">Compared Global GPU Network (GGN) performance with traditional GPU models.Achieved a 2x performance increase and 50% cost reduction with GGN compared to traditional GPUs.Accepted for IRIS (National Fair), ISEF national round, for its 2nd cohort.Received acceptance from Informatics, a journal indexed in Web of Science, with an impact factor of 3.5.	

Innovative Projects in AI, Blockchain, and Space Exploration

Developed the Global GPU Network (GGN)

Jan 2023 - Present

- GGN uses idle GPU power from mobile devices in a decentralized way to make AI training cheaper and more accessible than traditional GPU systems.
- Secured 2nd place in the Indian Silicon Valley Challenge with 15K+ views on the pitch deck about GGN and was praise from Subhash Chaudhry, CEO of a \$71M company.
- Awarded the Golden Crest Award for enhancing Indie developers' lives and challenging NVIDIA and Google monopolies.

Created a Presentation on the Economics of the World After AGI

Aug 2024

Developed a presentation and paper analyzing the global economy post-AGI, focusing on UPI, Worldcoin, and blockchain startups. Received the Future Founder Scholarship.

Co-Authored a Solution Proposal for Junior Academy Challenge

Oct 2023 - Dec 2023

- Developed a solution to increase rare earth metal supply through asteroid mining with a 20-page presentation
- Was responsible for testing feasibility and implementation of the proposed solution through physics solution.
- Won the competition, earning an EdX scholarship and praise from NASA researchers.

Open Source Contributions and Robotics Projects

CubeSat Project for Forest Fire Detection

Jun 2024 - Present

- Developing a 3U CubeSat (30 × 10 × 10 cm) for detecting forest fires using AI-powered cameras.
- Equipped with a YOLO-based (You Only Look Once) system for real-time object detection.
- Monitors forests for early wildfire signs to enhance prevention efforts.
- Supported by ISRO and the school, with design and launch plans nearing completion.

Developed MLX Web UI, achieving 100+ stars and ~6000 downloads

Aug 2022 - Nov 2023

Engineered MLX Web UI, a high-performance web server for managing, running, and downloading AI models locally. Implemented advanced retrieval techniques for enhanced response accuracy and context-awareness. Designed an intuitive interface with real-time token processing display, customizable model parameters, and efficient conversation management.

Contribution to Chroma DB (13.4k+ github stars) Open Source Project

Jan 2024 - Aug 2024

extended the functionality of Chroma DB, a 10,000-line codebase utilized by over 10,000 developers. My enhancements improved database speed by up to 20% while reducing power consumption by implementing support for execution of code on the bare metal gpu layer.

Created multiple educational resources

2019 - Present

- Minute Math: Developed an educational resource that creates animated videos with voiceovers, featuring an AI-powered solver that delivers step-by-step solutions to various math problems. This tool enhances learning by providing explanations, received high accolades from my Homeroom/Mathematics teacher.
- SAT Preparation Web App: Created a comprehensive web app used by over 180+ students internationally, offering 200+ multiple-choice questions to improve EBRW scores. Utilized an AI scraper with Chain of Thought (CoT) methodologies and a customizable template to autonomously extract data from books in any format, guiding developers in optimizing data accuracy through a multiple-reflection approach.

Development of AI Transcription Models in Gujarati

May 2024 - Aug 2024

Created AI models using Whisper Small and Base for local language transcription in Gujarati. Currently utilized by TIDE to enhance communication with teachers and improve human computer interaction between rural educators and technology.

Internships

Development of AI Tools for T.I.D.E

May 2022 – Oct 2022

- Developed AI tools for T.I.D.E., a non-profit organization impacting over 32,500 lives through education across India.
- Led the AI department in creating an automated flashcard generator, study plan creator, and resource linking system.
- Implemented advanced techniques like Retrieval-Augmented Generation (RAG) and prompt caching, saving over 60 hours of manual work monthly.
- Assisted 200+ teachers in resource management and contributed to developing a React Native-based app to enhance accessibility.

Software Engineering Intern – Backend Revamp at D2Mech

Mar 2024 – Jun 2024

- Migrated part of the backend from Python to Golang, transitioning from microservices to in-house infrastructure.
- Achieved a 20% cost reduction and a 2.5x increase in database speed, handling 1.5x more requests per second.
- D2Mech is a startup that has serviced 1000+ cars and earned 200+ happy customers.

Software Engineering Intern – CI/CD Team at Tridhya Tech

Mar 2023 – May 2023

Worked as part of the CI/CD development team, improving production time delay by 15% and reducing production crashes. Tridhya Tech is an \$8 million SaaS company serving 100+ employees. The internship focused on enhancing the efficiency and reliability of the development pipeline, contributing to the company’s overall productivity.

Leadership in STEM and Academic Initiatives

Led AI department for T.I.D.E consisting of 4 members

VP of Structures, Nationals & Head of Structures, Regional Space Settlement Design

Sept 2023 – Jan 2024

Lead Mentor of National Space Settlement Design Competition for my juniors

Sept 2024

Head of Software department for CubeSat Project, collaborated with 20+ members

Jun 2024 – Present

President of School’s Mathematics community

Jun 2023 – Present

Created a robust mathematics program, expanding membership from 10 to 25 students and spearheading preparation for AMC 12 and 10, significantly enhancing the school’s competitive mathematics profile. Additionally, organized volunteering drives at Shreyas School.

Led a think tank of ~30 students which focused on slum development

Jul 2024 – Aug 2024

Rural Development and Social Impact Initiatives

Founder of Scavenger Relief NPO, United Nations and United First (Gujarat, India)

Apr 2023 – Present

- Founded a NPO in partnership with *Live to Inspire Trust* to support manual scavengers across India.
- Raised \$4,000 to provide safety kits to over 300 manual scavengers, with a goal to reach 1,000+.
- Operated in key regions including Uttar Pradesh, Maharashtra, Bihar, Tamil Nadu, and Rajasthan.
- Featured in local newspapers, Sandesh, for impactful work in improving the lives of manual scavengers.
- Qualified for the QS-Impact \$5K scholarship for social impact initiatives.
- Received an honorary certificate from United First and the United Nations for contribution to social change.

Volunteer with Will to Live Foundation and Guidance from Sajan Shah

Feb 2021 – Apr 2023

- Worked under the mentorship of Sajan Shah, a renowned motivational speaker and social activist, and local temples to improve the welfare of rural women,[view certificate](#).
- Contributed over 200 hours to community service initiatives impacting 500+ lives through the distribution of sanitary pads, hygiene education campaigns, UV protection kits for city cleaners, and biohazard bins for safer sanitation practices.

Co-Author, Proposal Paper on Building Public-Friendly Cities

Jun 2024 – Sep 2024

- Collaborated with the Ahmedabad Municipal Corporation (AMC) and T.I.D.E to create a think tank which developed a proposal focusing on transforming Ahmedabad into a public-friendly city by addressing key urban challenges.
- Analyzed three critical initiatives: slum redevelopment, access to clean public washrooms, and road safety, aimed at enhancing community well-being and inclusivity.

Educational Outreach and Program Development

Atam Vikas – Taught 100+ Students Math and Science

Oct 2022 – July 2023

- Taught over 100 underprivileged students in grades 3 to 5, focusing on math and science.
- Implemented interactive teaching methods and hands-on activities to improve students’ grades and conceptual understanding.

Shreyas School – Developed Cyclical Math Education Program

Aug 2024 – Present

- Developed a sustainable math program emphasizing cyclical learning as part of a math study group.
- Incorporated reusable resources and peer-led review sessions to increase student engagement.
- Achieved notable improvements in test scores within six months.

Recognizable certifications from reputed institutions

CS50: Introduction to Computer Science by Harvard University | ~160hrs

2024

Innovation Through Design: Think, Make, Break, Repeat by The University of Sydney | ~15hrs

2023

Financial Markets by Yale University (With Honor) | ~30hrs

2023

Share Data Through the Art of Visualization by Google | ~25hrs

2023

Skills

Languages: Hindi (native), English (proficient), Gujarati (native)

Technical: Python (proficient), JavaScript (proficient), GoLang (proficient), C++ (proficient), Blender (amateur)