Aaditya Sahu

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github.com/MindqueBlast | mindqueblast.vercel.app

Education

Syosset High School Class of 2027
Syosset, NY

- GPA: 96.500 (A+)
- SAT: 1540
- AP Scores: 5 in English Language and Composition, Microeconomics, Physics 1, Precalculus, United States History, Statistics, Computer Science A, and World History.
- Dual Enrollment: ESG 100 Engineering and ESM 213 Introduction to Nanotechnology — Stony Brook University; Introduction to Artificial Intelligence — Long Island University.

Activities

Competitive Mathematics 2023 – Present
Arnold and Marsden Mathematical Olympiad Circle (AMMOC)

- Study advanced algebra, number theory, Euclidean geometry, combinatorics, calculus, linear algebra, and vector calculus.
- Submitted 46 original proofs to mathematical journals including *Mathematical Reflections* and *Crux Mathematicorum*.
- Prize Award, Australian Mathematics Competition — Top 0.3% (2025).
- Youth International Math Olympiad Gold Medal, Top 10% (2026). – Tied for 2nd Internationally; 2nd U.S.
- Honorable Mention, Stanford Math Tournament — Top 25–40% (2025).
- Distinguished Honorable Mention, Berkeley Math Tournament — Top 20% (2024).
- Silver Award, American Mathematics Olympiad (2024).
- Silver Medal, Math League International Summer Tournament Individual Competition — Top 15% (2024).
- Bronze Medal, Math League International Summer Tournament Speed Competition — Top 30% (2024).

Science Olympiad 2023 – Present
Syosset High School

- Varsity competitor; qualified for New York State and National tournaments.
- **Astronomy:** 1st Place Regional (2026), 5th Place New York State (2026), 5th Place Regional (2025).
- **Water Quality:** 2nd Place Regional (2026), 7th Place MIT Invitational (2026).
- **Experimental Design:** 3rd Place Regional (2026), 4th Place Regional (2025).
- **Bungee Drop:** 1st Place Regional (2025).
- **Robot Tour:** 3rd Place Regional (2026).

Teacher Jul. 2026 – Present
Sri Sri University — Remote

- Teach an intensive Agentic AI workshop to 102 students covering machine learning, model evaluation, data engineering, LLMs, Transformer architecture, prompting, PEFT fine-tuning, RAG, and autonomous AI systems.
- Guide students through practical AI system development using tools, memory, model specialization, and autonomous workflows.

Public Forum Debate 2023 – Present
Syosset High School

- Compete in varsity Public Forum debate, researching and analyzing economic, technological, and ethical issues.
- Degree of Special Distinction, National Speech and Debate Association (2026), for earning more than 500 NSDA points.
- Double Octofinalist, Yale Invitational (2025).
- 1st Place, October Long Island Forensics Association Tournament (2025).
- 1st Place, December Long Island Forensics Association Tournament (2025).
- 7th Place, NYC District Tournament.

Tenor Bass A Capella 2023 – Present
Syosset High School

- Vice President of Syosset High School's male a cappella group; manage social media, video production, graphic design, and group communications.
- Serve as Baritone Section Leader, organizing sectionals, conducting part checks, and supporting vocal preparation.

Vocal Performance 2023-2026
Syosset High School / NYSSMA

- Selected for the 2026 NYSSMA All-State Mixed Chorus as Tenor 2.
- Selected for the NYSSMA All County Chorus (2023 - 2026)
- A+ Rating, Level VI Vocal Solo, NYSSMA (2026); earned a score of 100 performing "Make Them Hear You" from *Ragtime*.

Independent Projects

ChessLoom — Chess Opening Training Platform Jun 2026 – Present Demo ;—; Source

- Built a personalized chess opening trainer that converts PGNs and Lichess Studies into adaptive recall exercises using FSRS, Stockfish analysis, server-authoritative move validation, and multi-device synchronization.
- **Technologies:** Next.js, TypeScript, React, Supabase, chess.js, ts-fsrs, Stockfish WASM, Vercel.

Debate Elo Tracker — Full-Stack Developer July 2025 – Present Demo ;—; Source

- Built a full-stack competitive debate platform with a custom Elo rating system, tournament management, historical analytics, and role-based authentication.
- **Technologies:** React, Tailwind CSS, Node.js, Express, MongoDB.

TerraWatch — Geospatial Environmental Change Detection Platform Mar 2026 Demo ;—; Source

- Built a geospatial analytics platform that processes Sentinel-2 satellite imagery to detect vegetation loss and regrowth through NDVI change detection and scalable tile-based processing.
- **Technologies:** Python, FastAPI, Next.js, React, Leaflet, xarray, SciPy, Microsoft Planetary Computer.

City Crisis Simulation Dashboard Feb 2026 Demo ;—; Source

- Developed a real-time infrastructure simulation using graph theory to model and visualize cascading failures across interconnected transportation, healthcare, energy, and utility networks.
- **Technologies:** Python, FastAPI, NetworkX, JavaScript, Canvas API, WebSockets.

Smart FocusDesk — Computer Vision Attention Tracking System Mar 2026 – Present Demo ;—; Source

- Designed a real-time computer vision system for attention and fatigue estimation using head pose, gaze, posture, and eye activity analysis with integrated hardware control and telemetry.
- **Technologies:** Python, React, TypeScript, FastAPI, OpenCV, MediaPipe, Firebase, PySerial.

Honors & Recognition

- **National Merit Semifinalist** — National Merit Scolarship Corporation (2026)
- **AP Scholar with Distinction** — College Board (2026)
- **School Recognition Award** — College Board (2026), Outstanding Academic Achievement
- **National Honor Society**
- **Science Honor Society**

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, C#, HTML, CSS, ProcessingJS

Frameworks & Tools: React, Next.js, Node.js, Express, FastAPI, MongoDB, Supabase, Git, Tailwind CSS, Unity, Vite

AI & Data: scikit-learn, Pandas, NumPy, OpenCV, MediaPipe, Hugging Face Transformers, LLaMA Fine-Tuning, RAG, Dataset Engineering

Hardware & Systems: Arduino, Raspberry Pi, VEX Robotics, PID Control, RTOS

Other: Computer Vision, Geospatial Analysis, Data Visualization, WebGL, GLSL, System Design

Certifications

- AI for Business Professionals — HP (2026)
- Introduction to Agent Skills — Anthropic (2026)
- Introduction to Model Context Protocol — Anthropic (2026)
- AI Fluency Framework and Foundations — Anthropic (2026)
- AI Fluency for Students — Anthropic (2026)
- Canva Essentials — Canva (2026)
- Full Stack Development — HackerRank (2026)
- Python (Basic) — HackerRank (2022)