

Adi Varshney

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EDUCATION

West Windsor-Plainsboro High School North, Class of 2027

GPA: 4.73 weighted/ 3.86 unweighted

Relevant Courses: AP Computer Science A (5), AP Chemistry (5), AP Statistics (4), AP Calculus BC (5), AP Physics 1 (5), AP US History (4), AP Spanish Language and Culture, Multivariable Calculus Honors, Advanced Topics in Physics Honors (AP Physics C: Mechanics & E&M curriculum), AP Literature & Composition, AP Microeconomics

RESEARCH & ACADEMIC EXPERIENCE

Researcher | Stony Brook University CSIRE | Prof. Shuai Mu

Summer 2026

- Researched formal verification of dynamic membership in the Raft distributed consensus protocol, focusing on safety across changing server configurations.
- Developed a machine-checked Verus proof of committed-history safety for dynamic Raft membership and submitted the verified result through a project pull request.
- Investigated quorum intersection, joint consensus, configuration transitions, and preservation of committed log history while working with Professor Shuai Mu and Ph.D. researcher Zihao Zhang.
- Used Verus, Git/GitHub, formal verification techniques, and distributed-systems concepts to develop, test, and document the proof.

Student | Columbia University Science Honors Program

2026 - Present

- Selected for Columbia University's Science Honors Program (<20% acceptance rate), an academic enrichment program offering advanced university-level science and mathematics coursework.
- Enrolled in Quantum Matter, studying the collective behavior of electrons and the emergence of quasiparticles in condensed-matter systems.
- Explore superconductivity, quantum geometry and topology, and models of electrons in solids to understand how quantum mechanics gives rise to novel phases and properties of matter.

Qiskit Global Summer School 2026 | IBM Quantum

Summer 2026

- Completed the Quantum Excellence Badge requirements through advanced lectures and four hands-on quantum computing labs.
- Applied quantum-computing concepts using Qiskit, including quantum circuits, algorithms, and hardware-oriented programming.

LEADERSHIP & TECHNICAL EXPERIENCE

Platinum Division Competitor | USA Computing Olympiad

2023 - Present

- Advanced to USACO Platinum, the highest division (approximately top 5% of pre-college competitors), through sustained practice and contest performance.
- Solve time-bound algorithmic coding problems using graph algorithms, dynamic programming, and data structures in C++; analyze complexity, test boundary cases, and refine solutions under contest constraints.

Technical Intern | Adstep Labs Inc.

Q4 2025

- Evaluated AI image- and video-generation models using client feedback to identify performance issues and improve the quality and relevance of marketing outputs.
- Contributed to development of a full-stack, AI-enabled marketing platform integrating generative-AI capabilities into client-facing workflows.
- Worked with the CEO almost daily in a fast-paced startup to prioritize improvements and deliver reliably; developed practical experience with Cursor and prompt engineering.

Cofounder, Developer & Content Creator | The Finance Ledger

2024–Present

- Co-founded a student-run financial education and analysis platform (thefinanceledger.org) focused on making financial topics and market analysis more accessible, garnering over 15,000+ views, producing 35+ articles, 30+ social posts, and 2 podcasts with over 150 instagram followers.
- Lead website development, technical infrastructure, product implementation, and digital content strategy.
- Research and write financial articles and educational content spanning personal finance, investing, markets, and economic topics.
- Produce multimedia content, including video podcasts and short-form financial education content, to communicate financial concepts to a broader audience.

Intern | S&P Global Junior Summer Experience Program**Summer 2025**

- Participated in professional-development workshops focused on finance, technology, project management, agile/lean methodology, communication, and leadership.
- Collaborated with a team to analyze DoorDash and develop a corporate credit-rating recommendation for a simulated S&P Global rating committee.
- Evaluated the company through SWOT analysis, consumer and industry analysis, business risk, financial risk, financial ratios, financial forecasts, and future expectations.
- Synthesized research into a final ratings recommendation and presented the team's analysis and supporting rationale to a mock rating committee.

Programming Captain | FIRST Tech Challenge Team #25710, [Alpine Robotics](#)**2022 - Present**

- Lead robot software development in Java, including autonomous and teleoperated systems, localization, computer vision, and advanced motion-control algorithms.
- Train and mentor programmers through structured lessons, debugging support, and hands-on development while contributing to robot design, match strategy, and overall team leadership.
- Selected as a FIRST Dean's List Semifinalist, an individual recognition for leadership, technical contributions, and impact on both my team and the broader FIRST community.
- Earned 2nd Place Inspire Award at a 2025–26 regional competition, qualifying the team for the New Jersey State Championship.
- Team awards include Think Award–2nd Place, Innovate Award–2nd Place, and Motivate Award–1st Place.
- Contributed 100+ hours of volunteer service at official FIRST Tech Challenge competitions, including the New Jersey State Championship, assisting with scorekeeping, field setup, field resets, and event operations.

President, Developer, Instructor | [Dreams2Code](#) Foundation / Non-Profit**2025 - Present**

- Volunteer to teach Java and introductory programming to 30+ students in grades 1–8 through classroom instruction, one-on-one mentoring, and youth coding programs (30 hours to date).
- Develop programming lessons, projects, and activities while contributing to the organization's website and technical resources.
- Help organize and run community coding camps and outreach programs designed to make programming more accessible to younger students.
- Lead 3 cohorts, planning fourth in Q2 2027

Secretary | Computer Science Club**2023 - Present**

- Lead programming lectures, technical activities, and competitive-programming workshops.
- Grew club membership from 5 to ~25 members.
- Organize meetings and help make computer science topics accessible to students with varying levels of prior experience.
- Organized HSN Hacks ([hsnhacks.xyz](#)), High School North's first and second ever hackathon, securing \$2,000+ in funding and attracting 50+ competitors.

Treasurer & Competitor | Technology Student Association Chapter**2023 - Present**

- Support chapter operations by managing chapter finances and competition fees, competition preparation, and project development while serving as a Treasurer.
- Placed 3rd at the New Jersey TSA State Conference in Coding as part of a two-person team in 2026.

SKILLS AND INTERESTS

- **Languages:** Java, C++, Python, Rust
- **Web Development:** HTML5, CSS, Javascript, Typescript, React, Vue.js, Angular, Supabase, Stripe
- **Research & Systems:** Verus, Raft, Formal Verification, Distributed Systems, Git/GitHub
- **Robotics & Computer Vision:** FTC SDK, RoadRunner, OpenCV/EasyOpenCV, AprilTag Detection, Odometry & Localization
- **Quantum Computing:** Qiskit, Quantum Circuits & Algorithms
- **Areas of Interest:** Computer Science, Computer Engineering, Electrical Engineering, Applied Mathematics, Physics, Distributed Systems, Formal Verification, Algorithms, Robotics, Quantum Computing
- **Languages:** English, Hindi (Conversational), Spanish (Conversational)