# Shiraaz Haidar

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## Education

**University of Michigan–Ann Arbor** Expected May 2030
B.S. Computer Science. B.S. Applied Mathematics.
*Relevant coursework:* C++ Programming (in progress), Multiv. Calculus, AP Statistics

**Woodhaven High School** Sep. 2022 – June 2026
GPA: 3.9/4.0, Class Rank: Top 5%
Honors: Summa Cum Laude, Michigan 1st Place Gold Tier Award – CyberPatriots, QuestBridge Finalist

## Software Projects & Engineering Teams

– **Full-Stack Web Application** Sept. 2026 – Present
- Built and deployed Python APIs for the AWS Student Builder Group's grant and event management using Lambda, API Gateway, and DynamoDB.
- Integrated a React/TypeScript frontend with cloud APIs to support student organization finance workflows.

**University of Michigan Solar Car Team – Strategy Member** Sept. 2026 – Present
- Built a C++ race simulator modeling drag, rolling resistance, solar generation, and battery charge.
- Applied binary search to find the maximum sustainable speed under battery constraints.
- Developing stochastic weather simulations to evaluate race strategies under uncertainty.

**Michigan Rocketry (MASA – Dearborn) – Flight Software** Aug. 2025 – Apr. 2026
- Implemented predictive sensor filtering in C++ for rocket flight software, using motion predictions and sensor measurements to estimate flight states.
- Compared raw and filtered sensor measurements to evaluate noise reduction and stability.
- The filter operated onboard during the team's 10,466-ft rocket flight.

**Multiplayer Escape Game – Co-Developer & 3D Designer** July 2026 – Present
- Developing inventory, persistence, and player interaction systems for a cooperative Roblox puzzle game.
- Fixed multiplayer synchronization bugs caused by heartbeat timing inconsistencies.
- Created 30+ original 3D assets and completed maps for the game's first world.

**DIY Racing Wheelbase & Pedals – Embedded Hardware Project** Apr. 2026 – Present
- Assembled and verified Hall-effect accelerator and load-cell brake pedals in Windows Game Controller and driving tests.
- Building a direct-drive wheelbase using STM32F405-based ODESC motor controllers and MT6701 encoders; mechanical assembly and force-feedback validation are still in progress.

## Leadership & Experience

**Vice President & Founding Member** July 2026 – Present
*AWS Student Builder Group* *Ann Arbor, MI*
- Manage a $5,000+ annual budget, maintain financial records, and plan spending for student programs.
- Coordinate with AWS employees on technical workshops and industry engagement at MHacks.

**Mathematics Tutor** Sept. 2024 – June 2026
*Woodhaven High School* *Flat Rock, MI*
- Delivered 400+ hours of tutoring Algebra 1 through Calculus II, and SAT Math.
- Helped three students improve their SAT scores by an average of 90 points.

**Co-Founder & Lead** Feb. 2025 – Aug. 2026
*Humanitarian Outreach Project for Everyone (HOPE)* *Downriver, MI*
- Managed nonprofit filing and coordinated volunteers with local charity partners.
- Organized the distribution of 5,000+ meals across three Michigan counties.

**GM Student Corps Intern** June 2025 – Aug. 2025
*General Motors* *Detroit, MI*
- Planned budgets and logistics for infrastructure improvements and school-supply projects in Southeast Michigan.
- Collaborated with GM retirees, company leaders, and fellow interns to carry out community projects.

## Technical Skills

**Languages:** C++, Python, Luau, TypeScript
**Modeling & Methods:** Numerical Simulation, State Estimation, Sensor Filtering
**Tools & Frameworks:** Git, CMake, React, AWS (Lambda, API Gateway, DynamoDB)