Shiraaz Haidar

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Education

University of Michigan–Ann Arbor Expected May 2030
Intended B.S., Computer Science and Mathematics (Mathematical Sciences)
Relevant coursework: C++ Programming (in progress), Multivariable Calculus, AP Statistics

Woodhaven High School Sept. 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

Technical Projects & Engineering Teams

University of Michigan Solar Car Team – Strategy Member Sept. 2026 – Present
- Built a simplified 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 a Monte Carlo weather model designed to generate 10,000 scenarios of wind speed, direction, and irradiance along a 3,017-km race route.
- Designing energy-use analyses to assess countersteering losses and guide center-of-pressure optimization.

Michigan Rocketry (MASA – Dearborn) – Flight Software Aug. 2025 – Apr. 2026
- Implemented an alpha-beta-gamma filter in C++ to reduce sensor noise and estimate rocket flight states.
- Compared raw and filtered sensor measurements to evaluate noise reduction and stability.
- Filter operated onboard during the team's 10,466-ft rocket flight.

Grant & Expense Management Application Sept. 2026 – Present
- Built and deployed Python APIs using AWS Lambda, API Gateway, and DynamoDB for a grant and expense management application used by the AWS Student Builder Group's core team.
- Integrated a React/TypeScript frontend with cloud APIs to support the team's finance workflows.

Multiplayer Escape Game – Co-Developer & 3D Designer July 2026 – Present
- Developing inventory, persistence, and player interaction systems in Luau for a cooperative Roblox puzzle game.
- Resolved 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 Hall-effect accelerator and load-cell brake pedals; verified inputs in Windows Game Controller and driving tests.
- Building a direct-drive wheelbase with STM32-based motor controllers and magnetic encoders.

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*
- Provided 400+ hours of tutoring in Algebra I through Calculus II and SAT Math.
- Helped three students improve their SAT Math scores by an average of 90 points.

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

GM Student Corps Intern June 2025 – Aug. 2025
General Motors *Detroit, MI*
- Planned budgets and logistics for community infrastructure and school-supply projects in Southeast Michigan.

Technical Skills

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