Aditya Saini

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(908) 912-6974 — U.S. Citizen

Education

Purdue University — West Lafayette, IN

B.S. in Computer Science — *Expected May 2028*

- **Concentrations:**: Machine Intelligence, Systems Programming
- **Coursework**: Data Structures & Algorithms, Systems Programming, Linear Algebra, Multivariable Calculus, Physics (Mechanics & E&M), Object-Oriented Programming, Discrete Math, Probability

Experience

Purdue Electric Racing — West Lafayette, IN

Firmware Engineer — *September 2025 – Present*

- Developed embedded firmware in C for STM32 microcontrollers (ARM Cortex-M4) supporting electric vehicle subsystems.
- Implemented CAN bus communication for reliable, low-latency inter-module data exchange.
- Designed real-time software for power management, safety systems, and sensor integration.
- Collaborated with mechanical and electrical teams to validate firmware on hardware-in-the-loop setups.

Kumon North America — Edison, NJ

Advanced Mathematics Teacher — *June 2023 – July 2025*

- Taught advanced mathematics (Pre-Algebra through Calculus II) to students aged 11–18, improving problem-solving strategies and test performance.

FIRST FRC Team 2554 — Edison, NJ

Build President & Programming Captain — *September 2021 – June 2025*

- Led the team to its best-ever season as Build President, earning three district awards through leadership and technical contributions, including the most effective autonomous routine at our first ever district championship in 18+ years.
- Programmed and created our team's first instance of Swerve Drive, tuned PID/Feed Forward loops, and wrote code for various subsystems

Projects

Natural Language Shell (NLSH) — Remote

Creator & Software Engineer — *July 2025 – Present*

- Created a lightweight command-line shell in C supporting natural language commands with tokenizer, intent parsing, and bash mapping.
- Developed cross-platform installer and documented architecture; exploring API integration for complex queries.

Custom Controller — Edison, NJ

Creator & Programmer — *October 2024 – April 2025*

- Engineered a custom gamepad with PSoC, writing low-level C firmware for input polling and USB communication.
- Integrated with robotics driver station, improving operator clarity and reliability in competition.

Skills

Languages: C, C++, Python, Java, JavaScript, Bash, HTML/CSS, LaTeX

Technologies: Git, OpenCV, React, Node.js, Flask, SQL, Arduino, Linux, VS Code