

Aditya Sharma

✉ a729shar@uwaterloo.ca in Aditya Sharma 📧 aditya-146 🌐 Personal Website

Technical Skills

Languages: Python, C, C++, SQL, JavaScript, NodeJS, EJS, Express, HTML and CSS

Development Tools : Git, PowerShell, Altium, Arduino IDE, STM32Cube IDE and ESP-IDF

Experience

Firmware Team Member - UWaterloo Formula Electric Design Team

Sep 2024 – Present

- Developing firmware for the Hardware-in-the-Loop (HIL) system of the wheel sensor board using the ESP-IDF framework on the ESP32-S2 chip.
- Analyzing schematic drawings in Altium and designing HIL tests for each sensor on the wheel sensor board (STM32), demonstrating advanced problem-solving and critical-thinking skills.
- Collaborating in a dynamic, fast-paced team environment, utilizing tools such as Git, FreeRTOS, and Slack for efficient project development.

Electrical Design Lead - 4 X 4 Yas National Competition

Jan 2023 – Jun 2023

- Led the design and development of all electrical components and circuitry for a remote-controlled car, leveraging an Arduino Uno and programming in C++.
- Developed and integrated advanced security systems using RFID technology, along with temperature, water level, light, and gyro sensors, ensuring seamless hardware integration and wiring.
- Secured \$1000 (USD) in sponsorships and partnerships to aid funding our 3D-printing endeavors.

Robotics Student - Unique World Robotics

Jun 2022 – Jul 2023

- **Arduino (Basics)** - learned basics of Arduino programming, layout pin structures, incorporating essential sensors and fundamentals of C++.
- **Arduino (Advanced)** - practical and real-life applications of Arduino along with use of more complex sensors through contributions to various projects
- **Raspberry Pi (Advanced)** - learned integration of Python in robotics and building circuitry using raspberry pi microcontroller through working on multiple projects such as led systems, security systems, calculators and water alarms.

Projects

Automated Plant Watering System

- Designed and developed a smart watering system using an STM32 Nucleo board, soil moisture sensor, and servo motors to automate irrigation by detecting soil moisture and tilting a water reservoir.
- Integrated an LCD interface for real-time statistics, focusing on sustainability and usability for homeowners with minimal maintenance and energy efficiency.

Personal Website

- Developed a responsive personal website portfolio using HTML, CSS, and JavaScript, featuring interactive navigation menus, smooth scrolling, and mobile-first design.
- Implemented a fixed navigation bar, hamburger menu for mobile responsiveness, and social media links for seamless user experience.

Football Statistics App

- Created an app using Python, that displays Premier League stats : team tables, player stats, rankings, top scorers, assists, and clean sheets.
- Implemented a SQL-based log-in feature for users to view stats of their favorite team

Education

University of Waterloo

Expected Sept 2029

Candidate for Bachelor of Applied Sciences – Computer Engineering

- **Coursework:** Digital Circuits and Systems, Linear Circuits, Fundamentals of Programming (C++), Engineering Economics, Calculus 2 for Engineering, Discrete Mathematics and Logic 1