

Shreya Pawar Mamidi

647-679-3015 | spmamidi@uwaterloo.ca | LinkedIn | GitHub

EDUCATION

University of Waterloo

Candidate for Bachelor of Applied Science in Computer Engineering

Sept. 2023 - Present
Waterloo, Ontario

- Cumulative average: 4.0
- Coursework: Embedded Microprocessor Systems, Real-Time Operating Systems, Digital Hardware Systems

TECHNICAL SKILLS

Programming Languages: Python, C++, C, Bash, VHDL, Verilog, MATLAB, Shell

Tools & Debugging: Altium Designer, Vehicle Spy, DET, Wireshark, Multisim, LTspice, FreeRTOS, GDB, Valgrind

Communication Protocols: CAN, LIN, I²C, SPI, UART, Ethernet

Hardware: Oscilloscopes, Network Analyzers, Signal Generators, ADC/DAC, PWM, RISC-V, ARM

EXPERIENCE

Embedded Software Automation Test Intern

Ford Motor Company

Sept. 2025 - Dec. 2025
Waterloo, Ontario

- Refactored 20+ legacy Python automation tests, improving execution time, scalability, and readability by 5%.
- Diagnosed root issues by distinguishing between product, script, and hardware defects using Wireshark, DET, VehicleSpy, CANalyzer, PuTTY, and debug logs.
- Triageed 20+ ECG variants per release cycle, tracking issues through Jira and validating test results in TestRail, to support bundle integration.
- Verified DBC signal mappings and arbitration IDs using CANalyzer and in-vehicle logs to ensure deterministic inter-ECU communication.

Software Engineer Intern

Genesys

May 2024- Aug 2024
Toronto, Ontario

- Integrated Playwright tests into a 10-stage Jenkins CI pipeline to enforce performance thresholds and automate E2E testing.
- Designed a regex-based masking feature in TypeScript, enabling customizable data redaction to meet customer privacy and compliance requirements.

PROJECTS

Gesture-Controlled Robot Car | ESP32, SPI/UART, GPIO, C++, Arduino, I2C

Jan. 2025

- Implemented low-level drivers and protocol handlers (SPI, I2C, UART, GPIO) to enable sensor-actuator communication.
- Integrated MPU6050 via I2C using C++ and C, implementing RTOS-style task scheduling to simulate real-time sensor data processing.
- Validated signal integrity through serial monitoring and multimeter-based hardware debugging.

Semiconductor Charge Simulation | C++, OpenGL, GLSL, GLFW, RTOS

Oct. 2025

- Simulated conduction-band electron dynamics in C++/OpenGL, modeling Coulomb forces, Brownian motion, and electron drift for 100+ particles at 60 FPS.
- Implemented RTOS-style scheduling and probabilistic carrier events with millisecond real-time updates.

DESIGN TEAMS & HACKATHONS

Orbital Electrical Member (Satellite Design Team) | Python, OpenCV, Google Colab

Oct. 2023

- Re-engineered a facial recognition system using OpenCV to adapt it for detecting holes in automated vehicles.
- Improved detection accuracy by 95% through optimized algorithms and precise image analysis.

Toyota Innovation Challenge: Vehicle hole detection system | Python, OpenCV, Google Colab

Oct. 2023

- Re-engineered a facial recognition system using OpenCV to adapt it for detecting holes in automated vehicles.
- Improved detection accuracy by 95% through optimized algorithms and precise image analysis.