

Guhan Iyer

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Skills

Languages C, C++, Java, Python, Scala, VHDL, Verilog, Assembly
Tools & Technologies Git, FreeRTOS, CMake/Makefile, Django, I²C, TCP/IP

Experience

Systems Software Engineering Intern

NCR VOYIX

Waterloo, ON

MAY – AUGUST 2024

- Designed and maintained various systems to support critical engineering infrastructure.
- Created an internal tool with **Django** to verify patch compliance for over **10000** devices.
- Refactored **Python** scripts to periodically update internal documents with correct user information.

Firmware Developer

UW ORBITAL

Waterloo, ON

JULY 2023 – PRESENT

- Developed a thermal monitoring system and essential functions for command & data handling.
- Leveraged **FreeRTOS** to develop an event handler for fatal over-temperature shutdowns.
- Improved system resiliency by integrating stack overflow handling and interrupt service logging.

Electrical and Telemetry Lead

LAUREL HEIGHTS SECONDARY SCHOOL ELECTRIC VEHICLE CLUB

Waterloo, ON

SEPT. 2022 – JUNE 2023

- Designed, assembled, and maintained the electrical systems of student-built electric vehicles.
- Implemented a telemetry system by interfacing a radio frequency module with **Arduino**.
- Competed in the Waterloo Electric Vehicle Challenge, placing **1st** in the 24-volt category.

Projects

Maze Solving Firefighter Robot 🤖

BASIC, PIC MICROCONTROLLERS

- Built a robot to solve complex mazes in which it must locate and extinguish a lit candle.
- Developed an embedded system to manage sensor readings and allow for autonomous operation.
- Calibrated robot to be capable of **sub-five second** solves in standard competition mazes.

Neural Network Cellular Automaton 🤖

JAVA, PROCESSING, GIT

- Created a cellular automaton which models the formation and operation of a biological neural circuit.
- Designed and documented a finite state machine and path-finding algorithm.
- Implemented ruleset with **Java**, visual output with **Processing**.

Education

University of Waterloo

CANDIDATE FOR B.A.Sc. IN COMPUTER ENGINEERING

Waterloo, ON

SEPT. 2023 – PRESENT

- **Relevant Coursework:** Algorithms & Data Structures (C++), Digital Systems (VHDL)