Guhan Iyer

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Skills

Languages	C, C++, Java, Python, Scala, VHDL, Verilog, Assembly
Tools & Technologies	Git, Processing, Arduino, FreeRTOS, CMake/Makefile, Django, NumPy, I^{2}C, TCP/IP

Experience

Research Assistant   **Waterloo, ON**
University of Waterloo   Sept. 2024 – Dec. 2024
- Developed a logic synthesis algorithm to optimize pre-synthesis **Verilog** circuits.

Systems Software Engineering Intern   **Waterloo, ON**
NCR Voyix   May 2024 – August 2024
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Firmware Developer   **Waterloo, ON**
UW Orbital   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.

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   **Waterloo, ON**
Candidate for BASc. in Computer Engineering   Sept. 2023 – Present
- **Relevant Coursework:** Algorithms & Data Structures, Digital Computers