# Guhan Iyer

guhan.iyer@uwaterloo.ca
linkedin.com/in/guhansiyer
github.com/guhansiyer

## Education

**University of Waterloo** - Candidate for BASc in Computer Engineering Expected Graduation: April 2028

- **Coursework:** Systems Programming & Concurrency, Embedded Microprocessor Systems, Integrated Circuit Design and Tapeout, Digital Computers, Algorithms & Data Structures

## Skills

- **Languages:** C, C++, Python, MATLAB, Assembly (ARM, RISC-V, x86), VHDL, Verilog, Bash
- **Libraries & Tools**: Pytest, Valgrind, CMake, Make, GDB, Android Tools (ADB, Fastboot)
- **Technologies:** Unix (Linux, QNX), FreeRTOS, ARM (Cortex-M, STM32, TI)

## Work Experience

**Firmware Engineering Co-op** – Nokia – Ottawa, ON Sept. 2025 – Dec. 2025

- Incoming Fall 2025.

**Software Development In Test Co-op** – Ford Motor Company – Waterloo, ON Jan. 2025 – Apr. 2025

- Developed scalable infrastructure in Python to test embedded software services across in-vehicle systems.
- Created a modular library in Python to simplify and scale testing for a universal security component.
- Rewrote a deprecated utility in Python, using the Slash framework to integrate with existing infrastructure
- Migrated 30+ legacy tests to utilize the new library, standardizing test structure for future development.
- Executed sanity tests and managed deployments with Jenkins, ensuring 98% functionality in 3 ECUs.

**Systems Software Engineering Co-op** – NCR Voyix (Candescent) – Waterloo, ON May 2024 – Aug. 2024

- Utilized Python to integrate an internal query utility into a newly-initiated patch management project.
- Individually developed a service to validate device compliance data for use organization-wide.
- Developed a patch verification tool to serve over 10,000 devices across 10+ device platforms.

## Projects

**TT-TPU (GitHub)** – Verilog, Python, Raspberry Pi May. 2025 – Aug. 2025

- Collaborated in a team of four to create a simplified tensor processing unit for submission to Tiny Tapeout.
- Implemented memory to hold matrix computations and a control unit to interface with Raspberry Pi I/O.
- Verified overall design integrity with Python and Cocotb, performed static timing analysis with OpenSTA.

**wintop (GitHub)** – C, CMake, Windows API April 2025 – May 2025

- Developed a Windows thread and process inspector in C with detailed scheduling information.
- Leveraged Win32 functions to create process snapshots, retrieve active threads and their metadata.
- Designed a terminal interface to provide real-time diagnostics, emulating top and ps in *nix systems.

**osh: The Open Shell (GitHub)** – C, Linux March 2025 – April 2025

- Created a rudimentary system shell in C for Linux systems, with support for various commands.
- Utilized Linux system calls to implement piping, redirection, and custom shell built-ins.
- Improved responsiveness by adding a persistent command history and parallel execution.