

Ahnaf Shahriar

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EDUCATION

University of Waterloo

Waterloo, ON

Bachelor of Applied Science in Computer Engineering

Sept. 2021 – May 2026

- Recipient of Richard & Elizabeth Madter Entrance Scholarship and President's Scholarship of Distinction
- **Relevant Courses:** Algorithms and Data Structures II, Digital Computers(ARM), Digital Circuits and Systems.

EXPERIENCE

Digital IP Verification Intern

May 2023 – Sep. 2023

NXP Semiconductors Canada

Kanata, ON

- **UVM SystemVerilog:** Designed testbench stimulus environment for an IP Block in Dataplane processing.
- **Test Planning:** Created Simulation scenarios for testing IP block features and edgecases.
- **Simulation:** Worked on Simulation Environment programming to reach total functional coverage.

Software Engineering Intern

Sept. 2022 – Dec. 2022

Synapse Product Development

Seattle, WA

- **Prototyping:** Leveraged Zephyr RTOS to create a proof of concept on *NRF52 BLE* device.
- **Python APIs:** Developed company specific lab automation software for equipment from *Agilent, Keysight, NI, Tektronik*.
- **Automation:** Streamlined testing and in house procedures using *Python* and *Bash*.
- **Driver Development:** Designed and implemented *drivers* for the controls of PCB testing Device(*I2C, UART*)

Firmware developer

Jan. 2022 – April 2022

Ford motor Company of Canada

Remote

- **Unity/Cmock Test framework:** Lead developer for optimization for unit testing, achieving up to *30% faster* runtime while using *50%* less manually written test cases.
- **Automation:** Improved *Jenkins CI/CD* pipelines to support unit testing automating using *Python* for Linux server.
- **Embedded Trace Debugging:** Tested logging and interrupt algorithms and debugged on hardware test benches through CAN and Serial.
- **Automotive Design:** Maintained *AUTOSAR* standard design with *ISO26262 safety design* using *Davinci Configurator*.

Firmware Team Member

Sept. 2021 – Present

UW Midnight Sun Solar Rayce Car Team

Waterloo, ON

- **functional Macro:** Helped in abstracting RTOS functionalities through macros for ease of use in embedded programming.
- **Testing:** Programmed smoketesting firmware in C for *STM32* processors in Linux virtual machine using Vagrant Virtual Box.
- **CAN API autogeneration:** Implemented C file autogeneration using input yaml files through Python and Jinja2.

PROJECTS

Game Of Life: Cellular Automata Simulation in C++ visualized using 2D OpenGL Rendering

LC VM: A C functional approach to implement an educational ISA. Improves on Online Design using Python data logging.

Cube Solver: A Program that can solve any Rubix Cube you scramble. Optimized for bitwise operations.

TECHNICAL SKILLS

Languages: Python, C/C++, Tcl, Bash scripting, ASM, VHDL, SystemVerilog/Verilog,

Tools: Quartus, Git, Linux, Qemu, GNU Tools, Docker, WireShark, UVM, Matlab

Hardware: Oscilloscopes, Logic Analyzer, Multimeters

Protocols: TCP/IP, JTAG, Serial, Ethernet, CAN/CAN-FD, LIN