

# Ahnaf Shahriar

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## EDUCATION

### University of Waterloo

Waterloo, ON

*Bachelor of Applied Science in Computer Engineering*

*Sept. 2021 – Apr. 2026*

- Recipient of Richard & Elizabeth Madter Entrance Scholarship and President's Scholarship of Distinction
- **Relevant Courses:** Computer Architecture, Computer Networks, Systems Programming and Concurrency, Embedded Microprocessing Systems, Analog Control Systems

## EXPERIENCE

### IC Design and Verification Intern

Jan. 2024 – May 2024

*NXP Semiconductors Canada*

*Kanata, ON*

- **IP Design:** Designed multiple IP blocks for NXP's flagship dataplane processing chips.
- **Timing Analysis:** Spearheaded critical path improvements for IP to meet 600Mhz from 400Mhz.
- **Functional Testing:** Designed brand new End-to-End functional tests in simulating traffic for IP.

### IC Verification Intern

May 2023 – Aug. 2023

*NXP Semiconductors Canada*

*Kanata, ON*

- **UVM SystemVerilog:** Designed Multi-threaded IP specific *UVM classes* for testing RTL Design.
- **Unit Test Planning:** Created Simulation scenarios and edge cases for testing IP block features.
- **Debugging:** Debugging regression testing and development in *Red Hat Linux*.

### Embedded 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 automation 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*.

## PROJECTS

**LC Emulator:** A C emulator for an educational ISA. Improves by 25% on research paper using *Python* data logging.

**Real Time Executable:** A RTOS implementation in STM32 capable of Pre-emptive task switching and its own Malloc

**Stereo System:** An embedded C implementation of a stereo playback system. Created with Quartus on Artix FPGA.

## TECHNICAL SKILLS

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

**Tools:** Keil, Quartus, Git, Linux, Qemu, LLDB/GDB, Docker, WireShark, UVM, Matlab

**Hardware:** Oscilloscopes, Logic Analyzer, Multimeters, Spectrum Analyzer

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