

Brian Teo

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EDUCATION

Rochester Institute of Technology

Bachelor of Science (BS) in Computer Engineering Technology

Rochester, NY

Expected Graduation May 2028

Relevant Coursework: Computational Problem Solving, Lab-based Circuits I and II, Digital Systems Design, Microcontroller Systems, Discrete Mathematics for Computing, Electronic Devices

SKILLS

Languages, Platforms & Protocols:

Embedded C, Javascript, VHDL, C++, Python, ARM Cortex-M4F (TI MSP432 LaunchPad), DE0-CV FPGA (Cyclone V), CC2650 module, SSD1306 display, UART/I2C/SPI communication protocols, TCP/IP, Allen-Bradley ControlLogix (Studio 5000)

Analysis/Database tools:

Multisim, MATLAB, Intel Quartus Prime, VS Studio, AutoCAD, Modelsim, Microsoft Excel, Studio 5000, Github, Rockwell Automation, FTOptix, FTView

EXPERIENCE

JCS Process & Control Systems

Software Controls Engineer Co-op

Rochester, NY

Aug 2025 – Dec 2025

- Programmed PLC ladder logic/Structured Text; developed HMI applications used by operators to run processing lines; and debugged, designed and deployed customer HMI screens and database applications reducing user input and installation errors
- Automated data transfer between the PLC and HMI design, streamlining recipe downloads and reducing manual efforts by 99%
- Implemented a structured I/O mapping process linking P&IDs, PLC modules, and HMI objects with 100% traceability, applying a verification discipline that minimized integration errors and ensured design intent matched deployed systems
- Configured and integrated SQL databases to store recipes, production data reducing data retrieval time from hours to minutes

PROJECTS

Firmware Engineer, EVT | *Visual Studio IDE, C++, Git, Github*

Oct 2025 – Present

- Developed and validated embedded software for RIT's electric bike racing team, utilizing code in the team's shared GitHub repositories, using EVT-core libraries to support communication between vehicle subsystems and maintain safe operation
- Collaborated with the Electrical subteam to validate test board firmware prior to PCB integration to ensure safe operation

Automatic Door Sensor | *CCSTUDIO IDE, Embedded C, TI MSP432, Autodesk Inventor*

Mar 2025 – Apr 2025

- Developed an automated locking system using the TI MSP432, CC2650 Bluetooth module, and SSD1306 OLED display, integrating ultrasonic distance sensing, servo actuation via PWM duty cycle control, and BLE smartphone commands
- Implemented finite-state machines with interrupt-driven timers to ensure deterministic control sequences

Collision Detection System | *CCSTUDIO IDE, Embedded C, TI MSP432*

Feb 2025 – Mar 2025

- Developed a collision detection system on the TI MSP432 using a bump sensor to measure distance and detect impact
- Achieved microsecond-level precision in echo delay measurement using interrupt-driven GPIO and hardware timer capture

Power Supply | *Multisim, Function Generator, Multimeter, Oscilloscope*

Feb 2025 – Mar 2025

- Designed a power supply bank by converting AC power to DC using transformers, resistors, capacitors and diodes
- Manipulated function generators and external power supplies to validate circuit behavior under different input conditions

Vending Machine | *VHDL, Quartus, Modelsim, Altera Cyclone V FPGA (DE0-CV)*

Nov 2024 – Dec 2024

- Programmed a finite-state machine, vending machine controller in VHDL, leveraging LUTs and flip-flops to assist modeling coin acceptance, product selection, and dispensing logic states for correct state transitions
- Verified functionality through observing cycle-accurate simulation in ModelSim (waveform output HEX displays) against expected behavior, and mapped I/O to switches, LEDs, and 7-segment displays for real hardware interaction
- Developed structured ModelSim testbench with clock/reset generation and stimulus sequences (coin insertion, overpayment, refunds, dispense), verifying correct FSM outputs under all edge cases