

Ryan Hausmann

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EDUCATION

B.S. in Electrical & Computer Engineering

Sep 2023 — May 2027 (expected)

Rowan University — *Glassboro, NJ*

Cumulative GPA: 4.0/4.0

- Minor in Computer Science, President's Scholar of Excellence, John H. Martinson Honor's College, Baja SAE Team

WORK EXPERIENCE

Optical Hardware Development Co-Op, Nokia Bell Labs, *Murray Hill, NJ*

May 2026 — Aug 2026

- Performed board bring-up for fan boards and wrote software to validate the functionalities of the board.
- Assisted with initial tests to verify that the fan boards were able to interface with existing hardware & software.
- Performed bring-up and initial integration tests on an upcoming product and assisted with assembly, debugging integration issues, and upgrading firmware for some of the components.
- Analyzed and improved documentation for a Distributed Acoustic Sensing (DAS) implementation in VHDL.

Optical Hardware Development Co-Op, Nokia Bell Labs, *Murray Hill, NJ*

May 2025 — Aug 2025

- Created and tested simulation models of a TCA9539 I^2C I/O expander and an AT24C02 I^2C EEPROM in SystemVerilog. Also wrote a controller module which generated I^2C traffic and signals to interface with the models.
- Performed board bring-up and initial tests for fan controller boards and wrote test validation software in Python.
- Created and tested a Universal Program and Debug Interface (UPDI) programmer in SystemVerilog, which was able to flash a compiled program to a connected microcontroller on an Arty A7-100T board.

Optical Hardware Development Intern, Nokia Bell Labs, *Murray Hill, NJ*

Jun 2024 — Aug 2024

- Used LiteX to generate a Linux-capable RISC-V SoC on an FPGA and wrote Linux device drivers to interface with logic.
- Designed and built a temperature-controlled AC power cutoff device to prevent thermal runoff during tests.
- Designed a PCB and wrote software for a common redundant power supply (CRPS) data logging device.

PROJECTS

Software-Defined FM Receiver (ryanha.us/projects/sdr-fm-receiver)

Apr 2026 — May 2026

- Wrote software in C++ to interface with a USB SDR receiver dongle
- Used digital signal processing techniques such as FIR filters and polar discriminators to filter out a particular channel and demodulate the incoming RF samples into playable audio.
- Used SDL and ImGui to create a simple GUI that allows a user to select which channel frequency will be played.

Baja SAE Data Acquisition System (ryanha.us/projects/rowan-baja-daq)

Sep 2025 — present

- Designed a custom PIC32-based PCB to connect various sensors around a Baja vehicle via CAN bus.
- Hand-assembled the PCBs, which contained components as small as 0402 and a QFN-48 component.
- Wrote software in C and created an automated compiler system with CMake that supports multiple target programs.

FPGA-based 3D Triangle Renderer (ryanha.us/projects/fpga-graphics)

Jan 2025

- Wrote a simple triangle rasterizer and 3D renderer in SystemVerilog and used Verilator to simulate the video output.

SKILLS

Hardware: PCB design with KiCad, Altium, and Eagle. Experience with soldering and component rework. Experience using oscilloscopes, logic and protocol analyzers, multimeters, function generators, etc.

FPGA: Design & verification with (System)Verilog using Vivado, Quartus, Verilator, LiteX, and more.

Software: Programming with C, C++, Python, Rust, JavaScript, Java, shell scripts, and MATLAB. Experience with Linux (embedded & desktop), Git, Docker, etc.

Design: CAD with OnShape and Fusion 360. Experience with rapid prototyping using 3D printers.