RYAN J. BRENNAN

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OBJECTIVE

Computer & Electrical Engineering student looking for a hardware/low-level software role. Director of Citrus Racing's Electrical & Embedded sub-team and technical mentor for SU IT. Disciplined and Steady.

EDUCATION

Syracuse University – GPA: 3.96 *Expected Graduation: May 2026*

BS Computer Engineering | Minor Electrical Engineering

- Honors: Dean's list x6, Dean's Merit Scholarship, SUccess Merit Scholarship, Tau Beta Pi Honor Society
- Clubs: Citrus Racing Formula SAE, CuseHacks (Overall & Category Winner 2024!)

WORK EXPERIENCE

SRCTec Electrical Test Engineering – *Summer Intern* *(May – August 2025)*

- Researched and established strategy for parsing binary BIST output from legacy military radar system for analytics.
- Built flexible, type-safe Python library for generating test output data structures for SRCTec's analytics system.
- Assisted in production floor ATE troubleshooting, test-rig builds, and pitched lab equipment re-organization strategy.

Citrus Racing FSAE Team – *Electrical & Embedded Director* *(August 2024 – Current)*

- Built ESP32+DWIN dash and presently building revised STM32+Riverdi RTOS dash to interface with ECU bus.
- Wrapped & verified test-rig. Initiated, reviewed, and documented electrical characteristics of competition schematics.
- Recruited, mentored, and wrote 60-page, 3-month long project training program – growing EE sub-team from 2 to 25.
- Overhauled website, re-built team history, guested interviews, introduced Jira, delegated tasks, sparked EV transition.

Syracuse Whitman IT Department – *Student Technical Mentor* *(August 2022 – Current)*

- Promoted first year to highest student position. In charge of 2 leads, 15 consultants. Overhauled 400-asset database.
- *Daily Responsibilities:* respond to classroom emergencies, troubleshoot, update & image computers, manage rentals.

PROJECTS

C Embedded Microcontroller Virtual Elevator – *Lead & Driver Developer (3 members)*

- Bare-metal datasheet programmed ATSAMD21(ARM M0+) with hardware interrupts, timers, bit-wise operators.
- Digital GPIO interfaced with 2x16 LCD and 4x4 keypad through fully custom drivers, as well as LEDs, and a buzzer.

Autonomous ROS 2 Patrol Robot – *Chief Debugging Wizard (3 members)*

- Programmed $100 custom Rock Pi robot with ROS2 using Kalman filter and AprilTags to make 3-minute lab patrol.
- Made sharp optimization tradeoffs with limited compute. Worked within unknown constraints. Only team to succeed.

Semiconductor MOSFET & BJT Design – *Individual*

- Designed theoretical transistors for an LED strip and DC Motor. Verified designs with HSPICE & LTspice simulation.

C++ Ski Video Game (OpenGL, Glut) – *Individual (also was requested to be class T.A. following year)*

- Wrote 2,700-line game with geometry vectors, player & particle physics, collision, textures, lighting, Phong material.

ADDITIONAL INFORMATION

Practiced Skills: Embedded & Object-Oriented C/C++, Java, Python, x86 Assembly, Semiconductors, SPICE, VHDL, FPGA, Schematics, MATLAB, ROS 2, VLSI, Linux, Computer Architecture, Protocols (I2C, UART, CAN), DSP, Control Systems, OpenGL

WIP Skills: PCBs with KiCad & Altium Designer, RTOS, Fourier Analysis, Analog Electronics

Leisure Activities: Snow/water skiing, mountain/road biking, triathlon, hiking, computer animation, campfire dinners