

# Ryan Donnellan

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## Education

### **Rensselaer Polytechnic Institute**

May 2025

Master of Science in Electrical Engineering, GPA: 3.54

Bachelor of Science in Electrical Engineering, GPA: 3.69

Honors/Certifications: Cum Laude, RPI CMDIS Cleanroom Certification.

## Experience

### **Hardware Engineer Intern**

Summer 2022, Summer 2023

*Rockstar Games, Santa Monica, CA*

- Designed and built custom hardware and user interfaces to streamline setup and calibration of performance capture systems.
- Programmed embedded systems to log high-speed performance capture data.
- Diagnosed and repaired electronic equipment while conducting experimental tests to support hardware development efforts.

### **Undergraduate Teaching Assistant**

Spring 2022, Spring 2023

*Rensselaer Polytechnic Institute, Troy, NY*

- Prepared lab equipment and instructional materials for the course *Computer Components and Operations*.
- Instructed students in digital circuit design and FPGA programming with VHDL during lab sessions and office hours.
- Mentored students in debugging and resolving design issues in Xilinx Vivado.

### **Makerspace Room Manager**

November 2021 – May 2022

*The Forge@RPI, Troy, NY*

- Diagnosed and resolved hardware issues to maintain uptime of 3D and resin printers.
- Trained new volunteers on machine operation and safety policies.
- Oversaw daily makerspace operations, including equipment upkeep, room maintenance, and policy enforcement.

## Projects

### **Pinball Machine** (*Altium Designer, C, Fusion 360, Python, Soldering*)

- Designed and built a custom electromechanical pinball machine from scratch as a Master's project, including full system integration.
- Created schematics and PCB layouts in Altium; soldered and wired all custom boards for cabinet and playfield integration.
- Developed Python and C software to manage game logic, matrix display, lighting, audio, and scoring across devices, integrating subsystems via USB/UART and I2C and resolving communication and performance issues.

### **Pressure Stabilization System** (*LTSpice*)

- Designed and built an analog circuit capable of detecting depressurization events and autonomously actuating a servo to mitigate adverse effects until repairs can be made.

## Skills

Hardware Design: Altium Designer, Cadence Virtuoso, Fusion 360, LTSpice, Quartus, Siemens NX, Soldering, Xilinx Vivado.

Programming: C, SystemVerilog, VHDL, MATLAB, Python.