

Lucas Bucht

443-254-3303 | buchtlu@gmail.com | [linkedin.com/in/lucasbucht](https://www.linkedin.com/in/lucasbucht) | lucasbucht.github.io

EDUCATION

University of Pittsburgh

Bachelor of Science in Electrical Engineering, Concentration in Integrated Circuits

Pittsburgh, PA

Expected May 2028

TECHNICAL SKILLS

Analog & Small-Signal Design: Op-amp circuit design (LM386), signal path analysis, frequency response & filter/tone-shaping design, noise reduction & stability testing

Circuit Simulation & Layout: LTspice (SPICE simulation), Altium Designer (PCB design/fabrication)

Lab & Debugging: Oscilloscope & multimeter-based debugging, protoboard prototyping & soldering

Digital Logic & HDL: VHDL, datapath design (ALU, registers, decoders, multiplexers), Siemens HDL Designer, ModelSim (testbench verification)

Embedded & FPGA: Quartus Prime, FPGA synthesis (DE10-Lite), Arduino IDE (C/C++)

CAD & Fabrication: Fusion 360, 3D printing, CNC, laser cutting

Tools: Git/GitHub, technical documentation

PROJECTS

Guitar Fuzz Pedal | LM386 Op-Amp, LTspice, Altium, Fusion 360

2024 - 2026

- Designed the full analog signal path using circuit analysis for an LM386 op-amp-based pedal
- Synthesized the amplification and frequency response in LTspice and Altium to verify component choices
- Prototyped and soldered on a protoboard, testing across 4 iterations to reduce noise and improve stability
- Created a scale enclosure in Fusion 360 to plan out jack placement and mounting points

Parking Garage Embedded System | NUCLEO, Embedded C, GPIO, I2C

Spring 2026

- Interfaced a NUCLEO microcontroller with stepper motors and 7-segment displays via GPIO, and controlled LCD screens over I2C, to simulate a functioning parking garage system
- Programmed system logic in embedded C and assembly to manage motor control, display updates, and sensor input handling
- Resolved cross-subsystem communication issues over GPIO and I2C, working directly with teammates to streamline integration between hardware modules

VHDL Calculator | Siemens HDL Designer, ModelSim, Quartus Prime

Fall 2025

- Built a complete datapath in Siemens HDL Designer, including a 4x8 register and ALU
- Developed core components like an 8-bit register, 2:4 decoder, and multiplexer
- Wrote 10+ do-file testbenches covering all datapath components and verified functionality in ModelSim
- Synthesized the design to a DE10-Lite FPGA in Quartus Prime

UV-C Light Bar Waste Reduction System | Fusion 360, Arduino IDE

Fall 2024

- Led CAD development across 5+ design iterations in Fusion 360 and programmed a virtual prototype in Arduino IDE, collaborating on a 3-person team

EXPERIENCE

Panther Leadership Academy Peer Facilitator

Sept. 2026 - Present

University of Pittsburgh

Pittsburgh, PA

- Mentor 30 students on leadership philosophies, communication, conflict resolution, and group dynamics

Engineering Makerspace Mentor

Aug. 2026 – Present

University of Pittsburgh Swanson School of Engineering

Pittsburgh, PA

- Train students on safe operation of 3D printers, CNC machines, and laser cutters for project fabrication
- Enforce equipment safety protocols during 4+ hours of weekly open shop coverage

Resident Assistant

Aug. 2025 – Present

University of Pittsburgh

Pittsburgh, PA

- Support 40+ residents through conflict resolution, crisis response, and community engagement
- Organize 10 educational and social programs per semester to promote student success and well-being

Floor Staff

May 2025 – Aug. 2025

Regal Cinemas

Crofton, MD

- Provided high-volume customer service and supported theater operations during peak hours
- Mentored new hires by sharing operational knowledge and helping them acclimate to team workflows