

Nathaniel Budz

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SUMMARY

Computer Engineering and Cybersecurity student with hands-on experience in PCB design, embedded systems, and hardware prototyping. Co-founder of ASTRO Systems, an aerospace startup competing in the DARPA Heavy Lift Challenge. Experienced in digital circuit design (VHDL/FPGA), flight computer development, and electronics testing. Passionate about building hardware that works in the real world. U.S. Citizen.

EDUCATION

B.S. Computer Engineering and Cybersecurity — Minor: IT Management Expected May 2027
Illinois Institute of Technology, Chicago, IL

PROJECTS

Co-Founder & Systems Engineer | ASTRO Systems (DARPA Heavy Lift Challenge) 2025 – Present

- Co-founded a 3-person aerospace startup building heavy-lift drones with a 360° airfoil body and gimbaled VTOL propulsion for the DARPA Heavy Lift Challenge.
- Designing the flight computer and control algorithms; selecting and integrating sensors (IMU, GPS, barometer), ESCs, and power electronics.
- Performing CFD analysis to validate airfoil geometry; 3D printing structural prototypes and iterating on design-for-assembly improvements.
- Managing full bill of materials, vendor sourcing, and component procurement; building first flight-ready prototype.

Electronic Controls Lead | IIT Rocketry

Fall 2025 – Present

- Designed a custom avionics PCB in EasyEDA, hand-soldered all components (THT & SMD), and performed functional verification using oscilloscope and multimeter.
- Authored wiring diagrams, assembly procedures, and test documentation for repeatable avionics bay integration across team members.
- Debugged sensor-to-actuator signal path issues through systematic troubleshooting; validated the system during a launch achieving within 5% of the 10,000 ft target apogee.

VHDL Digital Circuit Design on FPGA

- Implemented and tested digital logic (BCD converter, FSM, display driver) on an Artix-7 FPGA using VHDL and Xilinx Vivado.
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WORK EXPERIENCE

Mentor | STEAM Academy | Chicago, IL

Aug. 2024 – Feb. 2025

- Mentored 20–30 students per class in hands-on electronics assembly, soldering, and circuit-building; achieved 90% project completion rate.

Sales Representative | Micro Electronics Inc. | Westmont, IL

Jul. 2021 – Aug. 2023

- Managed DIY electronics department; provided technical support for test equipment, soldering tools, PCB prototyping kits, and 3D printers.
 - Exceeded quarterly sales targets by 20% in a commission-only role; top performer for 7 consecutive months.
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SKILLS

Hardware: PCB Design & Assembly | Soldering (THT & SMD) | Oscilloscope | Multimeter | 3D Printing | Wiring & Harness Assembly

Design Tools: EasyEDA | KiCad | Altium | AutoCAD | Vivado | MATLAB + Simulink

Programming: Python | C/C++ | VHDL | Java | Assembly | Git/GitHub

Cybersecurity & IT: Linux | Wireshark | Nmap | Penetration Testing | Network Configuration | Microsoft Office Suite