Falls Church, Virginia
(571) 395-5448
boernerc20@gmail.com

Christopher Boerner
Computer Engineer

U.S. Citizen
Eagle Scout

Computer Engineer with interests in computer/electrical hardware and embedded technology.
↪ Currently working on my Masters of Engineering in an accelerated program at Virginia Tech.

linkedin.com/boernerc20
github.com/boernerc20

Skills

Languages: Bash, C/C++, Java, MATLAB, Python, Verilog

Software: Altium Designer, Arduino, Cadence Virtuoso, CMake, Git, Linux, LTSpice, OpenCV, Pandas, PyTorch, Qt, SciKit-Learn, SolidWorks, Xilinx Vivado

Hardware: PCB Design, Breadboarding, Computer Architecture, Oscilloscope, Multimeter, Soldering

Education

Master of Engineering in Computer Engineering
Virginia Tech – Focused on Computer Systems – GPA: 3.8
    Advisers: Dr. Cindy Yi (Virginia Tech)

May 2025
Alexandria, Virginia

Bachelor of Science in Computer Engineering
Virginia Tech – General Computer Engineering – GPA: 3.6

May 2024
Blacksburg, Virginia

Technical Experience

Grading | Embedded Systems
ECE 2564 · Grader

Sep 2024 – Dec 2024
Blacksburg, Virginia

- Grade homework assignments and coding projects
- Use C language for TI MSP432 microcontroller-based systems.
- Collaborate with TAs and the professor to ensure smooth course operations

Embedded Systems Research | Expe-SmartHouse Project
Grenoble Electrical Engineering Laboratory · Research Intern

Jun 2024 – Aug 2024
Grenoble, France

- Developed a centralized broker network connecting miniature smart homes, an energy manager, and a photovoltaic panel using various microcontrollers and coding languages.
- Worked with the MAGE research team on an Ecodistrict mockup.

Cybersecurity Infrastructure Development | ICAM Framework
Deloitte · GPS Advisory Cyber Intern

Jun 2023 – Aug 2023
Rosslyn, Virginia

- Worked with a government client on improving their cybersecurity framework using an identity governance and administration solution
- Developed visuals and process cycles for a business requirements document
- Improved soft skills by participating in conferences and leading presentations

Computer Architecture Research | FPGA Systems
Systems Software Research Group · Student Researcher

Sep 2022 – May 2023
Blacksburg, Virginia

- Created a script to automatically run complex benchmarks on a FPGA-based heterogeneous computer system and collect data
- Implemented RISC-V 64-bit architectures on a Xilinx FPGA
- Modified the instruction execution phase of the processor to prevent cyber attacks

Information Technology Support | IT Sector
U.S. Department of State · Intern

May 2021 – Jun 2021
Riyadh, Saudi Arabia

- Upgraded the technological infrastructure of the U.S. Embassy Riyadh by replacing CPUs
- Maintained and managed the inventory of computers and peripherals

Projects

Master's Final Project | FPGA-Accelerated Echo-State Network for 2×2 D-MIMO

Nov 2024 – May 2025

- Implemented a TCP/IP file-reception engine on the Xilinx ZC702 SoC to recieve and parse large 2×2 D-MIMO datasets over Gigabit Ethernet
- Developed an ESN core and integrated recursive least-squares (RLS) training to adaptively compute weight matrices and deliver sub-microsecond symbol detection

Senior Design Project | Aircraft Data Acquisition Device (capstone_brochure.pdf)

Aug 2023 – May 2024

- Created a DAD that can read sensor data over a 60ft distance using a current loop
- Transmitted sensor data packets wirelessly using radio transceivers to a handheld unit

FPV Drone Design and Construction

May 2023 – Aug 2023

- Built and soldered a custom FPV drone for cinematic drone footage
- Integration of flight controller, ESCs, transmission system, and GPS

Integrated Design Project | Blood Oxygen Sensor

Jan 2022 – May 2022

- Created a multi-stage amplification and filtration circuit
- Multiplexes between two conditioned signals to calculate a person's blood oxygen