Alex Boulay

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SUMMARY

Computer Engineering major, experience with software programming, Cisco network configurations and implementations using Cisco CLI, creating circuit and system simulations using Verilog. Looking for roles involving network administration, reverse engineering, and penetration testing. Currently working towards completing CompTIA Network and Security certifications. Looking for internships and research opportunities.

EDUCATION

Virginia Tech, Blacksburg, VA — Expected Graduation May 2027

B.S. Computer Engineering – Cybersecurity & Network Engineering

Relevant Coursework: Circuits and Devices, Integrated Design Project, Computational Engineering, Signals & Systems, Physical Electronics, Discrete Mathematics, Linear Algebra, Differential Equations.

Gilman School, Baltimore, MD — June 2023

Awards: Jostens Yearbook Program of Excellence, 2023, Varsity Volleyball Three Year Medallion Winner

PROFESSIONAL EXPERIENCE

The Diggeridoos, *Embedded Systems,* Blacksburg, VA — September 2025-Present

- Member of the Embedded Systems for the Diggeridoos design team. Tasked with digging a 30 tunnel in the most efficient manner over the course of a week at the Not-A-Boring competition annually.
- Working to test sensors used in our system so that they are able to be implemented by competition as well as creating PLC programming to send the data from our sensors to our backend and to create GUIs that display this data. We also handle many of the electrical wiring aspects as the sensors need to be connected to our PLCs.

Virginia Tech Dining Services, *Student Assistant Manager,* Blacksburg, VA — March 2025-Present

- Dining Employee for Hokie-Grille dining hall on campus at Virginia Tech, worked in the Chik-Fil-A. Tasked with preparing food on the front line of the shop for grab-and-go customers. Helped with the cleaning the shop after closing and ensuring food safety is ensured.
- Cashier trained and given certification on operating a cash register and customer service practices. Oversaw the operations of the dining hall floor, specifically logistics and the cleaning processes.
- Oversees delegation of work on behalf of student managers as well as helping to train new employees on the operations of the shops, including both Chik-Fil-A and cashier/floor.

Coppermine Summer Camps, *Specialty Instructor,* Baltimore, MD — Summer 2025

- Specialty Instructor for the rock-climbing wall and zipline. Worked with a team to help run activities for rock climbing as well as operating the zipline. Used proper techniques and precautionary steps to ensure the safety of every participant.
- Helped to routinely check the equipment for safety defects and to ensure its functionality. Performed weekly inspections of the rock climbing ropes as well as the trolleys for the zipline.

Design Build Fly, *Electronics & Propulsion,* Blacksburg, VA — Fall 2024-May 2025

- Member of the Design Build Fly design team at Virginia Tech, focusing on creating a remote-controlled airplane competing in the American Institute of Aeronautics and Astronautics (AIAA) Design Build Fly competition annually.
- Member of the Electronics and Propulsion sub team, helping to build airplane motor and battery configurations to maximize static thrust as well as flight time.

ESF Camps & Experiences, *Activity Specialist*, Baltimore, MD Summers 2022-2024

- Head specialist for the Alpine Tower, rock climbing tower, tasked with general maintenance of the tower and overall safety inspections of all equipment.
- Lead the Alpine Tower activity, where I was responsible for belaying children up the tower as well as delegating tasks for fellow team members.
- Received special training for tower maintenance and proper belay techniques, proper tower setup, and other safety techniques.

Johns Hopkins Medicine Technology Innovation Center, *Intern,* Baltimore, MD May-June 2023

- Participated in a 3-week internship with a senior product manager at the Johns Hopkins Medicine Technology Innovation Center.
- Collaborated in stand up and design meetings to help develop wearable technologies used to optimize research studies.
- Worked with data scientists and prompt engineers on a project that involved utilizing Large-Language Models (LLMs) and generative A.I to develop neural networks used for pneumonia detection in chest x-rays.

INTERESTS & PROJECTS

- Both competed in and designed challenges for CTF competitions using relevant knowledges relating to cybersecurity including, OSINT, Cryptography, Reverse Engineering, Forensics.
- Currently in a course titled, Integrated Design Project, where I am working with a partner to create a personal smart locker. We are utilizing a servo motor and keypad connected to a microcontroller and Arduino board to help store passwords and provide a safe package delivery locker.
- This project implements a standalone ATmega328p microcontroller and is controlled by writing C code that is non-blocking and uses no external libraries. Our system is able to store password to the microcontroller's memory as well as encrypt the passwords; Interact with a keypad and servo by moving through a finite state machine; Detect when the servo is being blocked and revert to the previous state; Minimize power consumption and run the system completely off a 9V battery.

SKILLS

- *Computer Skills:* Cisco CLI, Java/C++ Programming, MATLAB, SolidWorks, Verilog, Intel Quartus Prime, Questa Simulator, Diligent Waveforms Software, Visual Studio Code, Cryptography, LTSpice, Multisim, SQL, CompTIA Network+.