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## Education & Certifications

**Elizabethtown College** | Bachelor of Science | Elizabethtown, Pa 3.42 GPA | 2020  
· Majors: B.S. Computer Engineering, B.S. Computer Science

### Relevant Course Work

- Engineering: Calculus I,II,III + Differential Equations, Circuits, Electronics, Signals and Systems, Controls Systems, Digital Design I II. Advanced Computer Engineering.
- Computing: Data Structures, Systems Programming, Compiler Design, Software Engineering. Database Systems, Networking, Operating Systems, Algorithms

**Secret Level Department of Defense Security Clearance**

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## Experience

**Systems Engineering Intern at Lockheed Martin [AEHF]** | King of Prussia, PA Since May 2019  
· AEHF Operational Support Element. Supporting mission control development  
· Implementing DoD Risk Management Framework. Assessing compliance and performing remediation  
· Maintaining environment, standing up new servers, decommissioning old servers

**Software Engineering Intern at Lockheed Martin [Horizon C&C]** | King of Prussia, PA May 2018 – May 2019  
· Worked primarily with software defined radios and developing a large-scale command and control java application  
· Created a scalable platform on which C++ based GNU Radio flowgraphs can be deployed rapidly  
· Developed portions of command and control platform. Focused on scheduling and cross-process communication

**Computer Engineering TA at Elizabethtown College** | Elizabethtown, PA Since May 2018  
*Digital Design I II, Advanced Computer Engineering.*  
· Created new teaching material, lab projects, and documentation for lab hardware and software  
· Wrote a full manual for the Basys 3 FPGA. Includes a Verilog tutorial, and targeted C compilation  
· Assisted students with lab activities and projects

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## Projects

**Cosmic | Senior Project** Since August 2019  
Cosmic is a fully simulated 8-bit computer architecture. The entire architecture and instruction set was created from scratch and works in a rich environment. The environment includes a debugger, a full-fledged GUI and an assembler. Cosmic is hard to explain in words, but better in code: <https://github.com/clbx/Cosmic>

**Emulators | Personal Projects** Since February 2019  
A recent effort to learn more about processor design. I've been working on emulators for older architectures  
**Chip8:** A common first emulator implemented using C++ and SDL2. Accurate to original design. Has debugger  
**Intel 8051:** A effort to make an educational Assembler and Emulator for 8051 ASM. Made using C++, SDL2, ImGui  
Both are available on GitHub: <https://github.com/clbx/ChocolateChip> <https://github.com/clbx/Better51>

**Otis | Elizabethtown College** January 2019 – May 2019  
An affectionally named neural networking algorithm, Otis was developed by 5 students on an Agile team where I acted as our scrum master. Otis can learn based on binary data and make reasonably accurate assumptions about the data. Otis' development was fully automated with CI/CD, unit testing, automatic documentation, and code coverage. All code is available on GitHub: <https://github.com/etown-blue-team/Otis>

**HomeLab | Personal Project** Since 2016  
A continuing project in learning more about networking, security, and systems administration. "JuiceNet" is a home networking setup which is made of 2 Dell PowerEdge Servers. The lab runs off ESXi and supplies a NAS, web server, media server, private git source, game servers, ad blocker, VPN, full windows domain, CTF and Wargame challenges, and more

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## Skills & Abilities

**Languages:** C/C++, Java, PowerShell, Python, Go, Swift, HTML/CSS, Bash, C#, MySQL, Java/TypeScript, MATLAB, and more  
**Platforms:** Windows, Linux, and Unix server environments, Git, Agile, JetBrains IDEs, Eclipse, CI/CD [Gitlab and Travis CI], Hardware Expertise, Embedded Systems, Software engineering methodologies, retro-computing.