

Summary

Motivated, skilled software engineer with wide-ranging technical and communications abilities proven over eight years of professional experience. Shipped numerous successful products across a wide array of fields in over a dozen languages and frameworks.

Proficient in: Python, Git, C, Linux, Bash, the Windows API, HTML/CSS/JS, network code, mathematical reasoning and technical communication.

Experience with: Vue.js, Node.js, C++, OpenGL, SDL, CPU and computer architecture, PLC ladder logic, hardware/software design for robotics, electronics engineering (especially digital systems)

Experience

Chief Technology Officer, Human Centered Tech LLC

September 2023 – present

- ◆ Designed, implemented, and tested user interface features and for the web-based control system of a robotic pipe repair system.
- ◆ Designed and implemented a HIPAA-compliant medical data interchange and ordering platform for cancer testing, including features for shipment tracking, result uploading, and integrations with major testing providers. Completed a security audit and implemented the auditor's recommendations.
- ◆ Collaborated to design a statistical model and three trading strategies for a futures trading firm, then implemented backtesting, analysis, and algorithmic trading software for those strategies.
- ◆ Designed and built a proof-of-concept for network monitoring software for small- to mid-size ISPs.
- ◆ Worked closely with customers to ensure satisfaction, assisting them in making informed decisions concerning infrastructure and acting as a liaison between the tech and non-tech sides of companies.
- ◆ In total, worked on eleven projects, serving as lead designer and developer on seven of them.

Independent Software Contractor

September 2022 – September 2023

- ◆ Implemented feature requests for a RESTful API backend for an online shopping platform.
- ◆ Worked with a product team to brainstorm and develop visual improvements for a web-based sensor data integrated view/analysis platform, then independently implemented those changes in Typescript using the Quasar and Vue.js web frameworks.
- ◆ Collaborated with the team to update and publish an iOS port of the same web app using the Capacitor framework.

Product Assistant, Green Rocket Security

May 2018 – September 2023

- ◆ Wrote and debugged PHP code for Green Rocket Security's primary product, a two-factor authentication and identity management platform.
- ◆ Independently designed and authored a browser-based GUI frontend for authentication/user administration in Python, HTML, CSS, and JavaScript.
- ◆ Created a series of demo websites for potential customers, exemplifying the product's ease of use, and wrote part of the technical manual for the product.
- ◆ Developed plugins and tools for use with the core product, including a PAM module in C++ to integrate the product with the Linux login system. These plugins were designed for high-security environments and passed code audits to ensure their safety.
- ◆ Developed a stress test unit to profile performance of the product's web API under high request loads.

Computer Course Teacher

September 2019 – March 2020

- ◆ Designed, marketed, and taught a paid course in which students construct a computer starting from first principles.
- ◆ Guided students through the principles behind computer engineering from with the properties of electric current and digital logic gates to Boolean combinatorial logic, CPU design, and software engineering in machine language.
- ◆ Designed and implemented a complete 8-bit CPU and surrounding computer system, with data and return stacks, 16-bit address space, and graphics acceleration via a coprocessing unit, along with a BIOS and applications for the computer. The CPU is assembled almost entirely from discrete chips in the 74xx and 40xx logic families.
- ◆ Wrote documentation and instructions for the computer, detailing the design and the rationale behind the design choices, along with the same principles covered in the course.

Teaching Assistant, Introduction to Programming, Live Oak Academy

Sept 2016 – May 2018

- ◆ Acted as teaching assistant to the instructor of a high-school course in Python.
- ◆ Independently designed and implemented hardware and firmware for a networked robotic arm to be used by the students remotely.
- ◆ Wrote a 20-page study guide for the course summarizing key concepts and their use in Python for the students.

Education

B.A. in Liberal Arts, Thomas Aquinas College, Northfield, Massachusetts (2022)