

Steven Elliott

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Overview

- 15 years as a full stack developer across multiple languages
- Base Skillset:
 - Rust (macros, async tokio, quinn, iced, actix, tauri, aws-sdk-* ...)
 - C++2b (Emscripten, SDL2, OpenGL, imgui, ...)
 - Web Frontends (Rust/C/C++ → Wasm+WebGL/WebGPU, Go+Angular/React, HTML5, JavaScript, ...)
 - Web Backends (TCP/IP, HTTPS, QUIC, HTTP3, Containerization, SR-IOV, aws-sdk ...)
 - Infrastructure (SQL/NoSQL, VmWare, hardware, VDI, ...)
 - Low Level Programming (C, ARM Assembly, VHDL, Verilog, ...)
 - Software Engineering Tools (gitlab, github, jira, ...)
 - Windows Development (UiPath, C#/WPF/XAML, Unity, Excel Macros, ...)
 - System Administration (VmWare, remote desktops, Unix Systems, Windows Systems, ...)
 - Graphics and 3D Design (Cuda, opengl, OpenScad, Blender, FDM, DirectX, ...)
 - Extensive Implementations of MILSTD / DataSheets / 3rd Party APIs
- Fast learning ability

Education

- B.S. Applied Mathematics from NJIT in 3 years with 8 graduate/PhD level courses: Applied Numerical Methods, Linear Algebra, Mathematical Analysis I & II, Complex Analysis, Advanced Applied Mathematics I & II, Computability and Complexity, Abstract Algebra.
- 3.8 GPA in math classes
- 1 year of D1 Track&Field, 3 years of Honors college, 3 years of Student Senate, Alpha Pi Omega, Pi Mu Epsilon, Undergraduate Research.

Work Experience

SeeYa LLC; Sole Proprietor – April 2024 to Present

- Conducted R&D, porting multiple C++ projects from Solar Crystal, LLC to Rust, leveraging modern technologies and cutting-edge coding techniques.
- Implemented lock-free asynchronous programming techniques and migrated networking protocols from TCP to QUIC for improved performance and reliability.
- Enhanced existing applications with advanced Rust features, optimizing for scalability and maintainability.

Peraton Labs; Senior Research Scientist – June 2023 to April 2024

- Administered VmWare IT infrastructure for deploying and testing systems, supporting large-scale network simulations.
- Worked on modernization of a multi-million-line legacy Windows codebase (early 2000s, C/C++) to a security-focused, microservice-based architecture (Kafka+ELK+etcd), using Python, Bash, and C++, with Docker and GitLab CI/CD DevOps pipelines.
- Utilized a ns-3-based tool for network modeling of proprietary communications protocols, testing network-management algorithms that incorporate machine learning and blockchain technologies.
- 100% Work From Home

SeeYa LLC; Sole Proprietor – February 2023 to June 2023

- Provided technology consulting to startup companies XcleaStream and Nedge.
- Independently Learned FPGA development on Lattice with Yosys, rapidly porting and extending Verilog LED Blink examples to VHDL.
- Independently created a MattThePrintingNerd's V.100: open source coreXY 3D printer with a 3D printed frame using a homemade Prusa

NCS Technologies; R&D Software Engineer – October 2022 to February 2023

- Quickly converted a webserver stack from Golang+React.js to Rust + React.js by learning Rust, Golang, and React, while testing other frameworks, for prototyping a patented cloud/edge computing technology focused on VDI software.
- Integrated containerization management into the Rust webserver stack to replace another backend component.
- Performed code reviews, identified bugs, improved functional and data coherence, contributed to engineering design decisions.
- Updated server hardware at Equinix data centers.
- Technology was sold to investors and I left to move to a contracting role.
- 40% Work From Home

Solar Crystal, LLC; Sole Proprietor – April 2018 to October 2022

- Designed and built a daisy-chainable AC/DC generator and renewable energy storage device that powered the production of its own plant-based container, trademarked as LightCube.
- Developed a C++ programming framework to automate cross-platform application production via frontend and backend code generation in Emscripten+SDL2+OpenGL+ImGui
- Used aforementioned framework to build applications: common Linux tasks GUI, patent reference tree viewer, ARM335x memory map modifier, automated asset trading interface, code building GUIs.
- Created a 3D-printed housing with embedded solar power to charge small Li-Ion battery packs for an internal IoT device.
- Converted a golf cart to solar power for personal use.

Marzen Group, LLC; Software Engineer – October 2012 to April 2018

- Wrote C#/CLI library wrappers for custom C/C++ hardware APIs for PCIe cards.
- Created C# software implementations of military communications standards, such as MIL-STD-3011, MIL-STD-6016F, S-TADIL J, MIDS, JREAP, DIS, etc.
- Built Windows WPF/XAML frontends & fail-safe multi-threaded C# library plugins for business expansion, using an internal API with MySQL.
- Introduced metaprogramming and scripting techniques to accelerate development.
- Traveled domestically and internationally to act as and support engineering staff on joint military exercises with hardware-in-the-loop, GS-15 equivalent.
- Identified and fixed errors in legacy code in offline secured locations with no prior knowledge of code base.
- Wrote Excel macros to process large amounts of automatically generated excel/csv files to assist in analysis.
- Created test simulations to verify requirements of developed code.
- Experimented with Microsoft HoloLens development on Unity. Worked with Ansys-STK and other APIs (e.g., DirectX, SilverLight, etc.)
- Transitioned to Work From Home

Johns Hopkins Applied Physics Laboratory; Associate Engineer – October 2010 to October 2012

- Tested and managed in-house and 3rd party models & simulations for ballistics and communications systems.
- Traveled to support testing in the field with hardware-in-the-loop.
- Researched Machine Learning techniques for optimization problems.

- Automated data analysis tasks using Perl.

Personal Projects

- Created a program utilizing udev linux input (mouse, keyboard, joystick, etc) and shared memory with a internal embedded ARM assembly program to create a universal adapter for Nintendo controllers using a touchscreen UI on a beaglebone black
- Created a parallel Newtonian model of the solar system with Cuda on Nvidia Jetson Nano.
- Created a standalone PIC32 microchip-based Nintendo console controller converter.
- Developed chaos-based pseudo-random number generators

Personal Info

- Aptera Accelerator #1263
- My hobbies include Tennis, Gym, Swimming, Volleyball, Chess, 3D printing, Radio and Electronic Engineering.