

BRIAN ELLSWORTH

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Software Engineer with experience in embedded software, project engineering, product development, lab research, and manufacturing of electro-mechanical devices. Background in biotechnology. Skilled in defining product specifications and developing software for both front- and back-end applications. Proficient in C, C++, Python, OOP. Detail-oriented MO and critical analysis of risk and security vulnerabilities. Background includes developing UI components and organizing application data with JSON and XML, and leveraging GIT, and version control best practices. Known for driving designs from concept through implementation, ensuring compliance with industry standards, and collaborating effectively across disciplines.

CORE SKILLS

Embedded Systems Development • Product Lifecycle Management • Hardware-Software Integration • Project Management Systems Performance Optimization • Quality Control & Compliance • Technical Issue Resolution • Cost Estimation • Budget Management Process Improvement • PCB Design & Testing • Data Structures & Algorithms • Technical Documentation

TECHNICAL SKILLS

Programming & Scripting: JavaScript • Python • C/C++ • Bash • PowerShell | **Software:** Git • VSCode • Cursor • LTspice • KiCad SysPro ERP Software • SolidWorks • OpenSCAD • UltiMaker Cura • Lychee Slicer • Microsoft Project • Microsoft Office (Excel • Word • PowerPoint • Visio) | **Operating Systems:** Manjaro Linux • Red Hat Linux • Windows 11/10/7/XP | **Electronics & Hardware:** Electronic Lab Equipment (Oscilloscope • DMM • LCR Meter • Digital Logic Analyzer) • Soldering • PCB Design • Debugging SPI • Electrical Testing (MIL-STD specifications) | **Design & Modeling:** CAD Modeling • Mechanical Drawings • Circuit Schematics • Component Selection | **Documentation:** BOMs • MPOs | **Machining & Fabrication:** FDM & SLA 3D Printing

PROFESSIONAL EXPERIENCE

Embedded Engineer • Prong Technologies LLC • Huntsville, AL Jul 2021 – Dec 2024

Created Python scripts to generate production-ready C/C++ code and memory maps for NAND flash integration. Authored and maintained product documentation, assembly guides, and testing procedures to support production workflows.

- Developed embedded C/C++ software for RP2040-based, bare-metal embedded systems.
- Tested web UI of self-hosted settings configuration page on flagship products, HID devices for professional arcade gaming.
- Enhanced company operations through the design and manufacture of tooling apparatuses and part prototypes using FDM/SLA 3D printing, laser cutting, and machining.
- Authored the Superslab User Manual found at prong.studio/superslab/manual
- Debugged PCBs using DMM and oscilloscope lab equipment to identify defective boards and resolve critical issues.

Project Engineer • Everson Tesla Inc. • Nazareth, PA Jun 2018 – Feb 2020

Led cross-functional teams, collaborating with customers, suppliers, procurement, CAD engineers, manufacturing technicians, and QA to meet project requirements, schedules, budgets, and quality standards. Supervised technicians and machinists to deliver critical operations on schedule. Prepared price quotations by assessing material costs, labor expenses, and profit margins as per customer specifications.

- Verified product reliability and quality through electrical and geometrical testing in compliance with MIL-STD specifications.
- Drove project outcomes by maintaining documentation, including schedules, BOMs, MPOs, test procedures, and QAs.
- Engineered CAD models in SolidWorks for tooling design and managed component procurement with suppliers.
- Managed the end-to-end manufacturing of electromechanical products, overseeing projects with production volumes from 5 to 200 units and budgets ranging from \$50K to \$10M.
- Reduced project delays and minimized part misplacement in large-scale, complex assemblies by optimizing BOM processes with a dynamic template featuring flat and hierarchical views, along with location and status tracking.

EDUCATION

B.S. Applied Physics, minor: Computer Science | Rutgers University, New Brunswick, NJ, 2018

B.S. Electrical & Computer Engineering | Rutgers University, New Brunswick, NJ, 2018

International Baccalaureate Diploma — IB Diploma Programme, Freehold, NJ

RESEARCH WORK

Undergraduate Physics Researcher • Andrei Research Group • Piscataway, NJ Jun 2017 – May 2018

- Improved material quality by optimizing graphene crystal diameter through CVD and electrochemical polishing techniques.
- Conducted microscopy-based research on graphene, contributing to material characterization and analysis for research advancements.
- Presented research at weekly meetings and APS March Meeting 2018.

VOLUNTEER EXPERIENCE

Executive Board Member • Society of Physics Students • New Brunswick, NJ Sep 2017 – May 2018

- Executed events with undergraduate students and physics faculty to promote academic engagement and community involvement.