Brian Benchoff

Electronic / Embedded Engineer

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Professional Summary

Versatile Prototype Engineer with 10+ years of experience in hardware development and embedded systems. Expertise in designing and fabricating functional prototypes using various manufacturing techniques. Skilled in embedded programming and mechanical CAD. Passionate about transforming innovative concepts into functional products through rapid prototyping and iterative design.

Experience

Span.io **San Francisco**
Electronic Engineer *2022-2025*
Developed novel data acquisition system for thermocouple measurement, reducing costs by 90%. Created comprehensive data acquisition web interface using Flask/React, enabling real-time monitoring for 200+ sensor channels. Designed and fabricated specialized test rigs using KiCad, 3D printing, and traditional manufacturing techniques. Implemented Vehicle-to-Grid (V2G) home backup power solution utilizing Nissan Leaf with CHAdeMO interface, providing 4kW emergency power capability. Executed prototype work using CNC (HAAS, Shapeoko), 3D Printing (Stratasys PolyJet, Filament), laser cutting, and fiber laser technologies.

Self-Employed **San Francisco**
Embedded Engineer, Product Designer *2016-2022*
Designed, built, and sold consumer electronics. This included 3D CAD Fusion360, AutoCAD, PCB design Eagle, KiCAD, Design for Manufacturability and Design for Assembly. Closely integrated with PCB assembly, up to and including running pick and place machines. Fabrication of 3D printed and injection molded parts in plastic and silicone. Designed, marketed, and sold several successful products.

Supplyframe **Pasadena**
Content Specialist *2018-2022*
Produced electronic design and engineering content, engaged with engineers regarding new products. Responsible for hardware projects, PCB & firmware design. 3D modeling, injection molded and 3D printed plastic and silicone.

Hackaday **Pasadena**
Editor *2011-2018*
Wrote, edited, produced content for weblog Hackaday. Designed hardware products and projects.

Skills

Languages: C, C++, Python, LaTeX, SQL

Mechanical CAD: Fusion360, AutoCAD, OpenSCAD

Electronic CAD: Altium, Eagle, KiCAD

Embedded: I2C, SPI, Serial, Parallel interfaces, USB, USB-C, HDMI, PCIe, eMMC

Graphic: Adobe Photoshop, Illustrator, Premiere

Platforms: x86, 8085, AVR, ARM Cortex-M (M0 & M4), RP2040/2350 PIO, Linux SoCs (Microchip, Allwinner)

Misc: Microsoft Office, 3D Printing, Rapid Prototyping, Industrial Design

Embedded Linux: Buildroot, Yocto