

# Brian Benchoff

ELECTRONIC / EMBEDDED ENGINEER

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## Professional Summary

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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

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### Span.io

*Electronic Engineer*

**San Francisco**

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

*Embedded Engineer, Product Designer*

**San Francisco**

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

*Content Specialist*

**Pasadena**

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

*Editor*

**Pasadena**

2011-2018

Wrote, edited, produced content for weblog Hackaday. Designed hardware products and projects.

## Skills

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**Languages:** C, C++, Python, L<sup>A</sup>T<sub>E</sub>X, 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