Jason Bens

390 La Strada Drive, San Jose, CA
Jason.L.Bens@gmail.com
linkedin.com/in/jasonbens
github.com/JasonBens

Biography

I'm a hardware engineer at Loon, previously part of Google X. I've been designing hardware for the past six years, but I'm also interested in and have experience in software and firmware development. I'll be relocating with my family to Berlin in April, and intend to take this opportunity to transition into a software-focused position.

Skill Summary

Languages (Familiar or Proficient)

Python C C++ MATLAB

Other Skills

Unix	Git	Bash
Machine Learning	Hardware Design	Embedded Firmware
RISC Assembler	TI BASIC	LaTeX

Software Experience

Electrical Engineer Seattle, Washington
Pensar Development *August 2015 - September 2018*

- Wrote several python utility scripts for firmware updates, log scraping, and reporting on prototype devices under development.
- Developed a suite of automated manufacturing tests in Python and NI Labview for circuit-board validation of my boards at the contract manufacturer.

Research Intern Keihanna Science City, Kyoto, Japan
Advanced Telecommunications Research Institute International *July 2012 - August 2013*

- Implemented a stacked denoising autoencoder in Python to generate hypothetical functional MRI (fMRI) activations.
- Developed stimulus routines in Matlab to collect data on behavioural tasks from human test subjects.
- Analyzed fMRI, MEG, EEG, and anatomical MRI data using Python to locate and visualize neural activations measured during experiments.

Projects and Extracurriculars

- Implemented a waveform generator in C and Assembler on an ARM microcontroller capable of generating arbitrary waveforms up to 1 MHz.
- Developed firmware and device drivers for LCD display, capacitive-touch, Wi-Fi, and I/O peripherals on an embedded microcontroller demonstration board.

Hardware Experience

Hardware Engineer Mountain View, California
Google X, Loon LLC *January 2020 - Current*

- As the main avionics engineer on Loon's next generation of flight vehicle, defined the requirements of, designed, and implemented a new avionics platform, launching Q1 2021 (Phase 1).
- Designed from scratch a new sensor fusion board for real-time flight data acquisition and controller actuation, forming the backbone of the next-gen flight vehicle's control system.
- Refactored an existing ballast dispenser board to simplify the design, removing or modifying several unnecessary power supplies and peripherals.
- Helped keep Loon weird by sneaking cat-themed art onto new circuit boards.

Electrical Engineer Seattle, Washington
Pensar Development *August 2015 - September 2018*

- Designed the schematics and circuit-board layout of several USB 2.0 and USB 3.0 hub boards for a medical ultrasound device.
- Spearheaded the EMC effort to reduce the device's RF emissions from 30 dB above the IEC-60601-1 limit to 15 dB below the limit using both electrical and mechanical modifications.
- Coordinated with local fabrication labs and larger contract manufacturers to prototype the device and bring it into production.
- Performed signal integrity measurements on high speed lines (DDR, USB 3.0, low MHz sine wave) and designed mitigations to reduce the effects of nearby RF coupling.

Electrical Engineer Mukilteo, Washington
Electroimpact *September 2014 - August 2015*

- Designed a sensor system to monitor the safety brakes on a carbon fiber placement gantry used in the construction of the Boeing 747.
- Integrated a positional control system with sensors for real-time control of a mobile gantry for carbon fiber placement.

Education

Bachelor of Engineering in Electrical Engineering University of Victoria
GPA: 7.58/9.00 *Graduated 2014*

- Specializations in Computational Intelligence and Electromagnetics & Photonics

Diploma in Electronics Engineering Technology Southern Alberta Institute of Technology
GPA: 3.82/4.00 with Honours *Graduated 2011*