Jason Bens

Straßburger Straße 9e, Berlin
Jason.L.Bens@gmail.com
linkedin.com/in/jasonbens
github.com/JasonBens

Biography

I'm a hardware engineer turned embedded software developer. While working as an engineer, I designed high-frequency ultrasound devices and stratospheric telecommunications balloons. I've now moved to the other side of the IO pin, writing firmware to push bits around inside microcontrollers.

Skill Summary

Languages (Familiar or Proficient)

- C
- C++
- Python
- Stack Overflow

Experience

Product Design Consulting Engineer - Hardware/Firmware Berlin
Voxdale GmbH *October 2022 - July 2023*

- Conducted a deep refactor of a medical client's existing codebase to increase code clarity and extensibility.
- Acted as technical liason with the sales team, providing technical advice and informed engineering effort estimates during the initial project development period.
- Led the ground-up redesign of an e-mobility client's IoT/telemetry hardware, including requirements specification and project estimation.

Embedded Firmware Engineer Berlin
Teufel Lautsprecher *May 2021 - October 2022*

- Developed application code for a currently unreleased Bluetooth LE Audio device to enable synchronous audio streaming between multiple speakers concurrently.
- Dove deep into Qualcomm's Bluetooth SDK to support our headset division's latest product as it approached product release.
- Specified the firmware requirements for the hardware refresh of a successful portable speaker product.

Hardware Engineer Mountain View, California
Google X, Loon LLC *January 2020 - April 2021*

- As the main avionics engineer on Loon's next generation of flight vehicle, defined the requirements of, designed, and implemented the avionics hardware loadout for the new flight system
- Represented avionics interests in an interdisciplinary team of hardware, software, firmware, and mechanical engineers.
- Engaged in initial exploratory research and prototyping of a high-altitude wind direction sensor.
- 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.
- Developed a suite of automated manufacturing tests in Python and NI Labview for electrical and functional validation of circuit boards at the contract manufacturer.

- Wrote python utilities for firmware updates, log scraping, and reporting on prototype devices under development.
- 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 the electrical system for a multi-unit wing strut locator jig. Sensors were used to measure the position and force on ~100 pneumatic actuators. A PLC collected this data and determined whether the struts were positioned correctly for the rivet machine.
- 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.

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 MATLAB programs to run neuroscience experiments, controlling audio and visual stimulus generators and collecting EEG and behavioural data from human test subjects.
- Analyzed fMRI, MEG, EEG, and anatomical MRI data using Python to locate and visualize neural activations measured during experiments.

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*