Ian C. Hartwig

San Francisco, CA mail@ihartwig.me

Skills:

	EE System Design	Bringup & Test	Software	Fabrication & Cabling
Fluent	▪ Orcad / Allegro ▪ Functional Specs ▪ CM, JDM Workflows	▪ CAN, USB, PCIe ▪ I2C, SPI, I2S ▪ LV DC & AC Power	▪ Linux / Ubuntu ▪ Python ▪ Git, Ansible, Docker	▪ AutoCAD, Inventor, Solidworks ▪ 3D Printing
Familiar	▪ Altium Designer ▪ Performance Modeling	▪ Ethernet 1-25G ▪ Rework 0201, QFN	▪ C on X86, ARM ▪ Pandas, SQL, SFDC	▪ CNC Router, Laser ▪ Mill, Lathe
Past Use	▪ KiCAD, Eagle ▪ Stackup Sim	▪ Thermal Envelope ▪ SCPI, GPIB Scripts	▪ Bash, Java ▪ HTML, CSS, JS	▪ Automotive Harness ▪ Zuken E3

Experience: Industry

Present (1½ years)

Platform Hardware Engineer
Embark Trucks, San Francisco, CA

- Lead requirements-driven design for new truck series including compute layout, HVAC integration, and contractor liaison
- Planned and rolled-out new Intel Xeon + NVIDIA HPC platform
- Drove Gen. 2 HW design with review, revision control, and CM production for all cable harness, PCBA, and HPC
- Standardized AC & LV DC power distribution and E-Stops

Aug 2018 (2½ years)

Hardware Engineer
Pure Storage, Mountain View, CA

FlashArray fault-tolerant x86 server design team

- HW Design Lead on new NVMe product
- Modeling of Future Memories & Interface options
- Multiphase VR Validation for designed-in Intel CPUs
- Design Review & Sample Testing for PCIe 3, NVMe, RoCE 2, 10G+ Ethernet, 12G SAS
- Field Failure statistic tracking of all FlashArray HW for exec. review - Python/Pandas, Salesforce, JIRA

July 2016

Aug. 2015

FlashArray Intern

- Developed tools to margin first-gen NVMe FlashModules
- SMD rework, measurement, threaded FW development in C, and test scripts in Python

May. 2015

Aug. 2014 (1 year)

Hardware Engineering Co-Op
Apple, Cupertino, CA

iOS Device Accessories

- Drove schematic & PCB for internal developer kits in lockstep with engineers on Battery Case and AirPods
- Sparked test automation sharing in Python across team

Jan. 2014

Projects

FIRST Robotics Mentor
FRC 5026, Burlingame, CA

Guide dynamic group of 30+ high school students in mechanical and electrical design of 150 lb. robot in 6 weeks

- Design reviews, strategy, tutorials
- Debugging assistance under pressure at local and travel competitions
- 2019 World Championship win with alliance teams 1323, 973, 4201

CMU Robo-Buggy
Built a self-guiding, gravity-powered vehicle with the CMU Robotics Club. Embedded SW, HW system integration, and power delivery HW.

Ace Monster Toys RFID Entry
Extended RFID locks at hackerspace in Oakland, CA. Custom microcontroller HW and SW with power relays and USB data.

github.com/ihartwig/amtdoor3
github.com/ihartwig/amtdoor2

Education: Degree

May 2016

Carnegie Mellon University
M.S. Electrical & Computer Engineering

- 18-623 Analog Integrated Circuits
- 18-625 Mobile and Server Product Design
- 18-649 Distributed Embedded Systems

May 2015

Carnegie Mellon University
B.S. Electrical & Computer Engineering

- 18-578 Mechatronic Design
- 18-474 Embedded Control Systems
- 15-410 Operating Systems
- 18-349 Embedded Real-Time Systems

Projects

Embedded Systems TA
18-349 & 18-549

- Wrote labs, exams for C on ARM
- Designed Raspberry Pi lab HW
- Built Gitlab check-in workflow

github.com/ihartwig/rpi-labio

AB Tech Executive Board
Live audio engineer and electrician for student-run productions co.

- 2-64 ch. Networked Audio
- 200+A 3-phase AC power