Ian C. Hartwig

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San Francisco, CA

Education:

Degree

May 2016

Carnegie Mellon University
M.S. Electrical & Computer Engineering

Select courses:
- 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

Select courses:
- 18-578 Mechatronic Design
- 18-474 Embedded Control Systems
- 15-410 Operating Systems

Aug. 2011

Skills

- ECAD – *Orcad, Allegro, KiCAD, Eagle, Altium*
- EE Power – E-Load, Diff-Probe, Thermal Chambers, LVDC, 3-Phase AC
- EE Protocols – *I2C, SPI, USB cert., JTAG, I2S (Audio Precision)*
- EE Rework – *for 01005+, QFN, BGA, CSP*
- System Simulation – *Spice, System Verilog*
- Programming – *C, Python, Javascript, Java*
- Data Science – *Pandas, Tableau, Salesforce*
- Web – *Markdown, HTML, CSS, PHP, SQL*
- MCAD – *AutoCAD, Solidworks, Fusion360*
- Machining – *Metals & Plastics, Mill, Lathe, Laser Cutting, CNC Router*

Experience:

Industry

Present

Hardware Engineer
Pure Storage, Mountain View, CA
FlashArray fault-tolerant x86 server design team

- Design lead on new NVMe product
- Analysis of future memories & interfaces
- Multiphase Buck Validation for Intel CPUs
- Design Review & Validation incl. PCIe 3, NVMe, RoCE 2, 10G+ Ethernet, 12G SAS
- Field Failure Analysis for exec. reporting. Leverage Python/Pandas, Salesforce, JIRA, face-to-face across orgs. and datasets for all FlashArray HW esp. FC & PSUs.

July 2016

Aug. 2015

Hardware Engineering Intern
Pure Storage, Mountain View, CA

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

May. 2015

Aug. 2014

Hardware Engineering Intern
iOS Device Accessories, Apple Inc.

- Drove SCH & PCB changes for dev. kits in lockstep with design engineers
- Worked closely with project management and mechanical, layout, RF, and SI engineers to meet tight deadlines
- Sparked test equipment automation collaboration in Python to save engineer time

Jan. 2014

Academic

FIRST Robotics Engineering Mentor
FRC 5026, Burlingame, CA
Guide dynamic group of 30+ high school students in mechanical and electrical design process of custom 150 lb. robot in 6 weeks.

Embedded Real Time Sys. (18-349) TA
ECE Department, CMU

- Built labs and exams focused on ARM in C
- Designed HW lab kit around Raspberry Pi
- Implemented check-in workflow on private Gitlab instance

github.com/ihartwig/raspberrypi-debugger
github.com/ihartwig/rpi-labio

Embedded System Design (18-549) TA
ECE Department, CMU
Mentored several capstone design projects. Created coursework in HW design and Eagle.

AB Tech Executive Board
Student Life, CMU
Live audio engineer and electrician for student-run entertainment productions company.

Projects:

May 2016

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

Jan. 2014

Robotic Buggy
Built a self-guiding, gravity-powered vehicle with the CMU Robotics Club. Embedded SW, HW system integration, and power delivery HW.
github.com/CMU-Robotics-Club/RoboBuggy
upverter.com/ihartwig/d0e344870ae6db06