

IAN C. HARTWIG

San Francisco, CA

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SKILLS:	EE SYSTEM DESIGN	BRINGUP & TEST	SOFTWARE	FABRICATION & CABLING
<i>Fluent</i>	<ul style="list-style-type: none">■ Orcad / Allegro■ Functional Specs■ CM, JDM Workflows	<ul style="list-style-type: none">■ CAN, USB, PCIe■ I2C, SPI, I2S■ LV DC & AC Power	<ul style="list-style-type: none">■ Linux / Ubuntu■ Python■ Git, Ansible, Docker	<ul style="list-style-type: none">■ AutoCAD, Inventor, Solidworks■ 3D Printing
<i>Familiar</i>	<ul style="list-style-type: none">■ Altium Designer■ Performance Modeling	<ul style="list-style-type: none">■ Ethernet 1-25G■ Rework 0201, QFN	<ul style="list-style-type: none">■ C on X86, ARM■ Pandas, SQL, SFDC	<ul style="list-style-type: none">■ CNC Router, Laser■ Mill, Lathe
<i>Past Use</i>	<ul style="list-style-type: none">■ KiCAD, Eagle■ Stackup Sim	<ul style="list-style-type: none">■ Thermal Envelope■ SCPI, GPIB Scripts	<ul style="list-style-type: none">■ Bash, Java■ HTML, CSS, JS	<ul style="list-style-type: none">■ Automotive Harness■ Zuken E3

EXPERIENCE:	INDUSTRY	PROJECTS
<i>Mar 2020 (1½ years)</i>	Platform Hardware Engineer Embark Trucks, San Francisco, CA <ul style="list-style-type: none">■ Led 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	FIRST Robotics Mentor FRC 5026, Burlingame, CA <i>Guide dynamic group of 30+ high school students in mechanical and electrical design of 150 lb. robot in 6 weeks</i> <ul style="list-style-type: none">■ Design reviews, strategy, tutorials■ Debugging assistance under pressure at local and travel competitions■ 2019 World Championship win with alliance teams 1323, 973, 4201
<i>Aug 2018 (2½ years)</i>	Hardware Engineer Pure Storage, Mountain View, CA <i>FlashArray fault-tolerant x86 server design team</i> <ul style="list-style-type: none">■ 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	CMU Robo-Buggy <i>Built a self-guiding, gravity-powered vehicle with the CMU Robotics Club. Embedded SW, HW system integration, and power delivery HW.</i>
<i>July 2016</i>		Ace Monster Toys RFID Entry <i>Extended RFID locks at hackerspace in Oakland, CA. Custom microcontroller HW and SW with power relays and USB data.</i> github.com/ihartwig/amtdoor3 github.com/ihartwig/amtdoor2
<i>Aug. 2015</i>	<i>FlashArray Intern</i> <ul style="list-style-type: none">■ Developed tools to margin first-gen NVMe FlashModules■ SMD rework, measurement, threaded FW development in C, and test scripts in Python	
<i>May. 2015</i>		
<i>Aug. 2014 (1 year)</i>	Hardware Engineering Co-Op Apple, Cupertino, CA <i>iOS Device Accessories</i> <ul style="list-style-type: none">■ Drove schematic & PCB for internal developer kits in lockstep with engineers on Battery Case and AirPods	
<i>Jan. 2014</i>	<ul style="list-style-type: none">■ Sparked test automation sharing in Python across team	

EDUCATION:	DEGREE	PROJECTS
<i>May 2016</i>	Carnegie Mellon University M.S. Electrical & Computer Engineering <ul style="list-style-type: none">■ 18-623 Analog Integrated Circuits■ 18-625 Mobile and Server Product Design■ 18-649 Distributed Embedded Systems	Embedded Systems TA <i>18-349 & 18-549</i> <ul style="list-style-type: none">■ Wrote labs, exams for C on ARM■ Designed Raspberry Pi lab HW■ Built Gitlab check-in workflow github.com/ihartwig/rpi-labio
<i>May 2015</i>	Carnegie Mellon University B.S. Electrical & Computer Engineering <ul style="list-style-type: none">■ 18-578 Mechatronic Design■ 18-474 Embedded Control Systems■ 15-410 Operating Systems■ 18-349 Embedded Real-Time Systems	AB Tech Executive Board <i>Live audio engineer and electrician for student-run productions co.</i> <ul style="list-style-type: none">■ 2-64 ch. Networked Audio■ 200+A 3-phase AC power