

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▪ Polarion, PRDs▪ CM, JDM Workflows	<ul style="list-style-type: none">▪ Ethernet 1-25G, -T1▪ CAN, USB, PCIe▪ I2C, SPI, I2S	<ul style="list-style-type: none">▪ Linux / Ubuntu▪ Python▪ Git, Ansible, JIRA	<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">▪ LV DC & AC Power▪ 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, Docker▪ HTML, CSS, JS	<ul style="list-style-type: none">▪ Automotive Harness▪ Zuken E3

EXPERIENCE:	INDUSTRY	VOLUNTEER
<i>Present</i>	Senior Hardware Systems Engineer Zoox, Foster City, CA <i>Vehicle Compute, Sensors & Networking Integration Tech Lead</i> <ul style="list-style-type: none">▪ Creation of network analysis tools & debug techniques▪ Gauge new platform readiness in lockstep with TPMs and PMs	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">▪ Intro to robotics support for our junior FTC 7316, 20392 teams▪ Design reviews and tutorials in MCAD, CAM, Electronics & Wiring▪ Root-cause, plan-of-action, and strategy at competitions▪ 2019 World Championship win with alliance teams 1323, 973, 4201 ironpanthers.com
<i>Oct 2021 (1½ years)</i>	Hardware Systems Engineer <ul style="list-style-type: none">▪ Set internal test specs. for vehicle ethernet (100M, 1G, 10G)▪ Drove first-build acceptance of new vehicle compute platforms▪ Built Mfg software change process & factory test automation	
<i>Mar 2020 (1½ years)</i>	Platform Hardware Engineer Embark Trucks, San Francisco, CA <ul style="list-style-type: none">▪ Led new truck platform design including compute rack layout, HVAC integration, seating, and contract requirements▪ Intel Xeon + NVIDIA HPC compute selection and roll-out▪ HW design with review, revision control, and CM production for all cable harness, PCBA, and Compute▪ Standardized AC & LV DC power distribution and E-Stops	
<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 Intel CPU Motherboards▪ Review & Test of PCIe 3, RoCE 2, 25G Ethernet, 12G SAS▪ Field Failure analytics dashboard - Python 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
<i>Aug. 2015</i>	<i>FlashArray Intern</i>	
<i>May. 2015</i>	<ul style="list-style-type: none">▪ Developed tools to margin first-gen NVMe FlashModules	
<i>Aug. 2014 (1 year)</i>	Hardware Engineering Co-Op Apple, Cupertino, CA <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>		

EDUCATION:	DEGREE	EXTRACURRICULAR
<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 (Real-Time) & 18-549 (HW)</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	