

## Work

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### SPAN Systems Integration Tech Lead

2024-present

Systems integration and verification test lead for SPAN's next-generation smart electrical panel:

- Own the systems verification test plan for the smart panel, ensuring safety, stability, and functionality.
- Maintain the test report + risk assessment that directs the exec-level firmware release schedule.
- Drive coordinated test planning with partner companies integrating with our product.
- Design custom hardware test stations and work with the infrastructure team to get them built.
- Identify patterns in bugs to drive the priorities and direction of the firmware team.
- Identify needs for test automation tools, build them, and train other teams on their use.

### Sabbatical

- Cohort leader for Stanford's Ethics, Tech, and Public Policy course 2023
- Team member at Photo Laundry SF, a community darkroom 2022-present

### Perceptive Sensing Systems Software Engineer

2019-2021

Employee #6. Helped build an early stage Lidar hardware startup in a fast-paced environment:

- Built our sensor driver layer with ROS, including a gigabit UDP packet parser written in C++ and pointcloud generators pushing millions of points per second on consumer hardware.
- Built real time sensor fusion features (across camera, IMU, lidar, radar) including dynamic lidar steering and vision target tracking add value to our sensor stack and enhance investor demos.
- Implemented zero-copy memory mapping from 10GBASE-T NICs into NVIDIA GPUs for real-time processing of raw sensor data at 20 Gbps. Implemented and optimized custom CUDA kernels.

### Apple Sensor Integration Engineer

2016-2019

Hardware systems integration engineer within Apple SPG, working on autonomy sensors:

- Captured sensor system requirements from algorithm teams, then designed sensor calibration and characterization processes and factory stations to ensure the sensor system met the requirements.
- Characterized end effector pose accuracy of 6DOF robot arm with external ground truth system.
- Wrote robot arm motion plans for extrinsic calibration of sensor systems mounted on end effector.
- Deployed two robotic sensor calibration stations abroad in factories and met tight deadlines.

## Education

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### Olin College B.S. in Electrical and Computer Engineering

2016

**Patent** [US10627253B2](#) Electrical monitoring and network enabled electrical faceplate

**Course Assistant** Signals and Systems - Feedback Control Systems - Analog Circuit Design

## Skills and Technologies

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- C++, C, CMake, Python, MATLAB, Pandas
- Machine vision, GPU programming (CUDA, OpenCV)
- 6DOF robot motion planning (ABB RAPID)
- Networking (UDP, TCP/IP, gRPC, pub/sub)
- Linux, UNIX, command line, ssh, vim, etc.
- CAN, I2C, SPI, UART, Ethernet
- Full-stack web (REST, SQL, HTML, CSS, JS, etc.)
- Feedback control (PID, Kalman filter, lead-lag)
- Data + visualization (JMP, SQL, d3, Rviz)
- PCBA design (Cadence, KiCad)
- Circuit simulation (LTSPICE)
- Embedded (MSP430, PIC, ATmega)