# Scout S. Heid

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## EXPERIENCE

**Staff Mechanical Engineer – Halo Industries** **2024 – Current**

*Senior Mechanical Engineer* 2023 - 2024

- DRI for 75% of all motion systems in a new generation of tools, utilizing various pneumatic, valves, solenoids, and sensors.
- DRI for a dynamic 8 motor calibration light bridge that aligns high powered lasers to micron precision on our flagship tool.
- Built a high precision alignment and laser testing fixture for a multi-beam laser from concept to testing in 8 weeks.
- Designed in a safety interlock system and tested with various high precision measurement tools, including Keyence.
- Lead on the investigation of EFEM design with contract manufacturer and existing EFEM robotic arms suppliers.
- DRI for squiggle motors. Made a custom test fixture, and programmed the device using NewScale API with python.

**Product Design Engineer, Advanced Products – Amazon Lab126** 2019 – 2023

- Lead product design engineer for dynamic motion sub-assy on future product. DRI for 15+ parts and 5+ sub-assembly
- Manager & mentor for Summer 2022 interns across the org (PD/EE/Controls). Ideated and run intern presentation program.
- DRI for multiple functional and noise reduction parts in Astro pan sub-system. Interfaced with China DFM, IQC, OQC.
- Designed from scratch multiple robotics gearmotors for high and low torque actuators using custom torque/force sensing.
- Researched and prototyped devices and use cases for future home robotics in manipulation and grasping.
- Drove in-depth testing and investigation for materials, grades, adhesives, and foams utilizing SIM, FEA and TA analysis.

*Product Design Engineer, R&D Intern – Amazon Lab126* May 2018 – Aug 2018

- Prototyped concept development robot and ran a functional demo of 6 DOF dynamic device for VP & Directors
- Utilized ROS, wifi, serial, and firmware code to connect a network of complex systems and sensors for control and vision

**iPhone Power PD Intern – Apple** Jan 2017 – Aug 2017

- Lead PD engineer for architecture and development of JDM program with 3rd party vendor.
  - Reviewed DFMs, mold flow analysis, and overall design of the product. Enforced strict safety and design guidelines.
  - Mixture of design verification/testing, and managing communicating with China team to implement improvements.
- Oversaw the entire assembly, product line, and processes. Followed parts I owned through design/prod cycle.
- Researched optimized ultrasonic welding design using various cosmetic and weld quality metrics. Tested with DOE
- Implemented corrective action tests and tolerance analysis to verify design validity for manufacturing and assembly.

**Device & System Architecture – Curtis Instruments** May 2016 – Aug 2016

- Constructed a software architecture that added 10+ separately controlled devices to a dynamic User Interface in LABVIEW.
  - Used asynchronous calls, user events, and references to control devices in a unique variation of Actor Framework.
  - Wrapped existing code and reprogrammed devices for optimal efficiency and speed when attaining and sending data.
- Operated and tested on multiple testing devices, including a Dynamometer, Power Supply, DMM, Oscilliscope and the company's Controller, which used a variety interfacing methods (GPIB, USB, Serial, CANopen, VISA).

**Pioneers in Engineering (PiE)** - **UC Berkeley** Mar 2014 – May 2017

**Lab Researcher for Biomimetic Millisystems Lab** Feb 2014 – Dec 2016

## EDUCATION

**University of California, Berkeley** **Graduated: 2018**

Master's of Engineering, Mechanical Engineering Controls — **Focus**: Autonomous Vehicle Controls + Path Planning

Bachelors of Science, Mechanical Engineering — **Focus**: Product Design + Robotics/Manipulation

Minor in Electrical Engineering and Computer Science

## SKILLS

- Programming Languages: Java, Python, ROS, Arduino, MATLAB, Simulink, LabView, HTML & CSS, Ruby, LaTex
- CAD/CAM: SolidWorks, Autodesk Inventor, AutoCAD, Fusion 360, Mastercam, EAGLE, COMSOL, NX10, Creo, KISSSys
- Skills: Injection molding, Die-cut, Diecasting, GD&T, Tolerance analysis, Machine Shop, Circuit Board Production, Reflow Soldering, Casting, Milling, Laser Cutter, Microsoft Office, Git, Design of experiments, Design for manufacturability, Design for Assembly, Failure Analysis, Robotics, Baxter, Gearbox design, High volume and mass production manufacturing, statistical process control (SPC), electro-mechanical design integration, pneumatics, safety interlocks, Keyence
- Languages: English and fluent in conversational Japanese.