

# Daniel S. Castle

Website: danielscastle.com • Mobile: 1-302-332-3149 • Email: daniel@danielscastle.com • San Diego, CA

## WORK EXPERIENCE

### Apple Inc. | Cupertino & San Diego, CA

Prototyping/Incubation Electrical Engineer – Camera Systems Feb. 2021 – Present

- Apple's various depth & AR/VR algorithms teams require custom hardware platforms and ground truth systems that are representative of future shipping products in order to verify that their models are ready for planned product roadmaps. Our team is responsible for the full product lifecycle of each hardware platform that we build: scoping, defining requirements & specifications, design, build, test, and support. We bridge the gap between software teams requiring shipping hardware and the shipping hardware needing to be built by system teams, such as my former iPhone team.

### iPhone Hardware Systems Electrical Engineer

Jan. 2020 – Feb. 2021

- The iPhone HW Systems EE team is responsible for all system-level printed circuit boards (PCBs), including flexible PCBs (flexes) and the main logic board (MLB), for the iPhone. My role expanded from owning all RGB & IR camera flexes for the iPhone 12 Mini to eventually owning all 12 flexes within the phone as builds progressed. I then worked early field failure analysis (EFFA) for the Fall 2020 lineup, triaging incoming phones and finding solutions for how early production iPhone 12/Mini/Pro/Pro Max phones break after first customer ship (FCS).

### iPhone Hardware Systems Integration Co-op

Jan. 2019 – Aug. 2019

- Completed extensive work on subsystem coexistence within the iPhone 11 Pro and Pro Max, working with cross-functional teams to debug timeline-critical hardware & firmware issues
- Designed an interposer board to break out iPhone main logic board (MLB) signals for factory use during early field failure analysis (EFFA) of returned iPhone 11 Pro and Pro Max phones
- Performed iPhone subsystem signal integrity and power integrity validations to ensure reliable operation over voltage, temperature, and component manufacturing variability
- Schematic capture of a test board to characterize audible noise from singing ceramic capacitors
- Developed Python scripts for CPU thermal and peak power models during camera streaming

### RKF Engineering | Bethesda, MD

RF Communication & Systems Engineering Co-op

Jan. 2018 – June 2018

- Due diligence on a plan for NASA to secure additional government funding for future satellites through a feasibility study on the inadequacies of using present commercial satellite operators
- Modeled RF interference between cell towers on Earth's surface at frequencies of 0.1–50 GHz to understand frequency band sharing and worst-case performance of terrestrial cellular services

## TECHNICAL PROJECTS

- **Led** the development of a "Keurig for Cold Brew" 3-minute coffee machine with a 6 person team
- **Built** a thruster control board for 3 micro-Cathode Arc Thrusters for CubeSat propulsion
- **Made** a plasma arc speaker to be mesmerized while playing high fidelity music from a laptop
- **Designed** the printed circuit board (PCB) for sensors, control, and power of a custom RC car
- **Developed** the PCB for an alarmed, app-enabled e-scooter lock to address e-scooter littering
- **Prototyped** a wireless doorbell that will text the owner to indicate successful package arrival
- **Implemented** the circuitry for a smart measuring device that helps users find well-fitting clothing
- **Additional information** (demos and videos) available at [www.danielscastle.com/portfolio](http://www.danielscastle.com/portfolio)

## EDUCATION

Northeastern University, Boston, MA

December 2019

**B.S. Electrical Engineering**, Minor in Entrepreneurial Engineering, *magna cum laude*

GPA: 3.82

**Honors:** National Merit Finalist (\$30K/year), Honors Program, Honors Early Research Award (\$1K)

## TECHNICAL SKILLS

**Electronics:** PCB Design, Arduino, LabView, VHDL

**Programming/CAD:** C++, Matlab, Java, Python, AutoCAD, SolidWorks, HTML, CSS