

Daniel S. Castle

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WORK EXPERIENCE

Apple Inc. | Cupertino, CA

iPhone Hardware Systems Design Electrical Engineer

Jan. 2020 – Present

- New Fruit Development on the iPhone Hardware Systems Electrical Engineering Team

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 issues
- Designed an interposer board to capture iPhone main logic board (MLB) signals without rework for factory use during early field failure analysis 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
- Designed a tool for RF link budgets and propagation modelling for satellite telecommunications

Northeastern University | Boston, MA

Research Assistant, ALERT, Dept. of Homeland Security Center of Excellence

July 2017 – Dec. 2017

- Designed and validated the VHDL implementation of a rotary encoder for use in object imaging
- Created LabView scripts to control a stepper motor rotating RF transceivers for image capture
- Performed Matlab simulations to determine object shape and likeness to plastic explosives

Teaching Assistant for Embedded Design - Enabling Robotics

Sept. 2018 – Dec. 2018

- Troubleshoot C++ and Simulink code for 35 undergraduate students in class and during labs
- Held review sessions every week, going over in-class coding problems and best coding practices

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** a Printed Circuit Board (PCB) for Sensors, Control, and Power of an RC car
- **Developed** the PCB for a BLE-enabled, alarmed 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 of a Smart Clothing Device for a client that was acquired in 2018
- **Additional information** (demos and videos) available at www.danielscastle.com/portfolio.html

EDUCATION

Northeastern University, Boston, MA

December 2019

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

GPA: 3.82

Honors: University Honors Program, University Honors Early Research Award, National Merit Finalist

TECHNICAL SKILLS

Electronics: PCB Design, Arduino, LabView, VHDL

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