

## Education

**Ph.D. in Electrical and Computer Engineering** 2019 - 2024 (Anticipated)  
with focus on Communication Electronics  
University of California, Santa Barbara - GPA: 3.96/4.00

**Bachelor of Science in Electrical Engineering** March 2016  
**Bachelor of Science in Computer Engineering** March 2016  
University of California, Davis - GPA: 3.86/4.00 with High Honors

## Work

**Graduate Student Researcher** - UC Santa Barbara in Santa Barbara, CA September 2019 - Present

- Radio frequency integrated circuit research and design under direction of Professor James Buckwalter.

**RFIC Engineer** - Internship at SpaceX in Redmond, WA June - September 2021

- Designed circuit improvements for an RFIC in an Earth terminal for a satellite internet system (Starlink).
- Used Cadence and EMX to investigate on-chip RF isolation.

**Product Support Engineer** - Tesla, Inc. in Palo Alto, CA February 2017 - August 2019

- Validated and maintained Tesla's Superchargers, a global electric vehicle charging network.
- Created an automation platform for engineers with Python and Supercharger telemetry to replace manual diagnostics, leading to improved customer experience and enabling rapid expansion of the network.
- Implemented fleet-wide analysis programs with data-streaming platforms and Apache Spark for real-time insights.

**NPI Electrical Engineer** - Internship at Keysight Technologies in Santa Rosa, CA June - August 2015

- Analyzed power and bias design of a vector signal generator with SPICE simulations, leading to a more reliable product.

## Projects and Activities

**BiCMOS SiGe Reconfigurable Receiver at 210 GHz** - Research Project at UC Santa Barbara May 2020 - Present

- Designed and taped-out a 210 GHz SiGe (130 nm) receiver using Cadence Virtuoso and EMX.
- Reconfigurable to IQ/Low IF with integrated x8 multiplier chain.

**InP HEMT Low Noise Amplifier at 210 GHz** - Research Project at UC Santa Barbara November 2020

- Designed and taped-out a 210 GHz InP HEMT (35 nm) LNA, using Keysight ADS and Momentum EM.
- Simulated gain of 25 dB and noise figure of 5.3 dB, using 22 mW. To be measured.

**High Frequency Transistorized Function Generator** - Personal Project January 2017

- Designed and fabricated a credit card-sized 40 MHz function generator made with only discrete transistors.

**Formula SAE Student Electric** - Race Car Design Team at UC Davis September 2013 - June 2015

- Designed, built, and raced an electric formula car with a team for the Formula SAE competition.

## Skills

### Hardware

- Electronics design: Analog integrated chips, RF circuits, and embedded systems.
- Use of oscilloscopes, signal generators, network analyzers, multimeters, and logic analyzers to verify circuits.
- Simulation and test-driven circuit design with SPICE, Keysight ADS, and Cadence Virtuoso.

### Software

- Python, C/C++, BASH, MATLAB, SQL, Git, Docker.
- Embedded software development for microcontrollers. Familiar with embedded communication protocols and peripheral devices in bare-metal and RTOS implementations.
- Software development with issue life-cycles, unit testing, continuous integration, and version control.