

# Cate Miller

---

## Experience

### **Iris Technology - Irvine, CA**

#### *Embedded Software Engineer*

July 2023 - April 2024

Developed embedded software, as well as related user applications, for devices used in space and industrial applications.

- Designed and implemented the embedded software component of a device used to monitor the condition and operating environment of mining equipment.
- Maintained control software for electronic components used on satellites.
- Designed and implemented interface modules in C for UART communication, I2C devices, and GPIO.
- Designed an algorithm to approximate position using accelerometer and gyroscope readings.
- Utilized LoRa technology to enable data transmission and reception between devices with integrated wireless transceivers.
- Implemented new features, using Python and JavaScript, for web and desktop applications which allow users to interact with systems of devices once deployed.

### **Cubic Transportation Systems - San Diego, CA**

#### *Principal Software Engineer*

May 2019 - June 2023

Designed and developed software solutions for the transportation industry, successfully deployed by multiple public transit agency customers, including New York, Boston, Chicago, and Brisbane.

- Developed C++ and C# software for public transportation payment validation devices, supporting both Linux and Windows platforms.
- Created embedded firmware for controlling and operating subway gates using the Kiel uVision IDE and debugging tools while maintaining API documentation.
- Became an expert in the low-level software that facilitates communication between payment devices and gate microcontrollers.
- Designed and developed a comprehensive simulation tool, including a user-friendly interface, to facilitate device testing in a laboratory environment.
- Authored software design documents and delivered presentations to program managers, systems engineers, and senior developers during software architecture governance reviews.
- Led the design and development of multiple new features, guiding junior engineers, overseeing integration efforts in a laboratory setting, and collaborating with program management and stakeholders to meet customer needs and requirements.
- Wrote unit tests, participated in integration testing for new features and bug fixes, and utilized version control systems such as Git.

- Operated in a Scaled Agile Framework (SAFe) environment and achieved SAFe Product Owner/Product Manager certification.

## **SkySafe - San Diego, CA**

*Software Defined Radio Engineer*

July 2017 - April 2019

Developed, optimized, and maintained RF signal processing software as an early team member of a drone defense and airspace control startup funded by Andreessen Horowitz and DIUx.

- Created high-performance signal processing and control software using C++ and Python.
- Reverse-engineered commercial and hobbyist drone communication and control protocols.
- Led research and development of mitigation techniques for a popular hobbyist drone RF protocol, integrating detection and attack capabilities into the final product.
- Thoroughly tested software components in simulation, anechoic chamber, and field test environments to ensure top-notch quality before presenting and delivering to military, public safety, and commercial customers.
- Contributed to the full-stack development of the product's web application.
- Submitted bug fixes and new feature requests as GitHub pull requests to the open-source GNURadio project, enhancing reliability.
- Established and maintained the software team's continuous integration server and collection of unit tests using the Python-based Buildbot framework, automated and deployed through Ansible.

## Education

### **The University of Texas at Austin**

*BS Electrical Engineering*

May 2013

**Technical Area** - Computer Architecture and Embedded Systems

### **The University of Texas at Austin**

*MS Computer Science*

In Progress