Caitlin Miller

Software Engineer

cate.marie.m@gmail.com
215.837.9512
San Diego, CA
catemarie
catemarie

Skills

SOFTWARE

C/C++
Python
JavaScript
HTML/CSS
MATLAB
Go
Vue.js
Ansible

HARDWARE

VHDL
Verilog
Xilinx Vivado

Employment

SkySafe — San Diego, CA

Software Defined Radio Engineer — July 2017 to Current

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

- Developed high performance signal processing and control software in C++ and Python
- Reverse engineered commercial and hobbyist drone communication and control protocols
- Led the research and development of mitigation techniques for a common RF protocol, including the integration of detection and attack capabilities into a large piece of the final product
- Tested all software components extensively in simulation, anechoic chamber, and field test environments to ensure quality before demonstration and delivery to potential military, public safety, and commercial customers
- Contributed to the full stack development of the product's web application using CSS and JavaScript, particularly utilizing Vue.js, to provide a user interface for the system
- Implemented and submitted pull requests for bug fixes and new features to the open source GNURadio project to improve reliability
- Created and maintained the software team's continuous integration server and collection of unit tests using the Python-based Buildbot framework, automated and deployed using Ansible

Northrop Grumman — San Diego, CA

Software Engineer — Sept. 2016 to July 2017

Tested software applications as a software test engineer in the Aerospace Systems business sector

- Developed internal tools to enhance requirements management software and automatically manage documents and procedures
- Created and executed test procedures for qualification test activities
- Identified, documented, and verified the correction of software defects

Lockheed Martin — Cherry Hill, NJ

Research Engineer — July 2013 to Sept. 2016

Designed, implemented, and tested software applications and hardware prototypes as a research engineer in the Advanced Technology Laboratory's Spectrum Systems Laboratory

- Developed and implemented machine learning and signal processing algorithms, as well as performance analysis tools, for advanced research applications and demonstrations using C++, Python, and MATLAB
- Designed, implemented, and tested custom DSP FPGA cores using Verilog and Xilinx design tools
- Wrote embedded software drivers and applications in C for embedded Linux to integrate hardware platforms with new and existing software applications
- Built software defined radio applications with the open source GNURadio framework and Ettus USRP FPGA architecture
- Oversaw a technical relationship with a software subcontractor, including the integration, testing, and performance evaluation of their contributions
- Presented technical concepts to customers at design reviews and led the execution of several over-the-air field test events and real-time demonstrations

Education

The University of Texas at Austin — Aug. 2009 to May 2013

B.S. Electrical and Computer Engineering 2013