CAITLIN MILLER

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github.com/catemarie
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SKILLS

C++, Python, MATLAB, Git

EXPERIENCE

SkySafe July 2017 - April 2019
Software Engineer San Diego, California

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
- 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 September 2016 - July 2017
Software and Systems Engineer San Diego, California

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 July 2013 - September 2016
Associate Member of Engineering Staff Cherry Hill, New Jersey

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
- 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

Intel September 2012 - May 2013
Technical Marketing Engineer Intern Austin, Texas

Configured Linux and Windows servers to replicate Networking Division customer issues with wired Ethernet products, wrote scripts to automate network performance benchmarking applications, and authored a technical whitepaper detailing a proposed solution to a customer issue based on laboratory testing of hardware constraints

Lockheed Martin May 2012 - August 2012
Technical Intern Cherry Hill, New Jersey

Wrote a documentation and a development guide for radio hardware and FPGA development for reference in future laboratory efforts with an open source software defined radio platform

The University of Texas at Austin February 2011 - May 2012
Undergraduate Research Assistant Austin, Texas

Worked with a team of scientists and engineers in the Physics department's Texas Petawatt laser lab to write laboratory control software and user interfaces, set up and document experiments, and analyze results and performance metrics

Kimberly-Clark May 2011 - August 2011
Electrical Engineering Intern Paris, Texas

Developed quality control software for factory machines and supervised the installation of new electrical equipment on the production line

Lockheed Martin June 2010 - August 2010
Technical Intern Arlington, Virginia

Researched artificial intelligence algorithms and revised syntax for natural language processing software

EDUCATION

The University of Texas at Austin May 2013
B.S. Electrical Engineering Austin, Texas

Technical Area
Computer Architecture and Embedded Systems

Related Coursework
Digital Logic Design, Computer Architecture, Microprocessor Applications and Organization, Algorithms, Software Design and Implementation, Real-Time Digital Signal Processing Laboratory, Digital Systems Design Using VHDL, Electromagnetic Engineering, Solid-State Electronic Devices, Electronic Circuits