derek@derekkozel.com
707 318 1844
U.S. Citizen

Derek Kozel

Mailing Address
1083 Vine Street #229
Healdsburg, CA 95448

Education

Carnegie Mellon University
M.S. in Electrical and Computer Engineering — May 2014
B.S. in Electrical and Computer Engineering — December 2012
Additional Major in Engineering and Public Policy — December 2012

Relevant Courses

Low Power System on Chip Architecture
Embedded Real Time Systems
Identification, Detection, and Estimation
Structure and Design of Digital Systems
RF Systems and Antenna Design
Advanced Mobile Robotic Development

Technical Skills

Programming in C, C++, Verilog, Python, Java, Perl, ASM
Proficient with Logic Analyzers, Oscilloscopes, Spectrum Analyzers, Network Analyzers
Production quality soldering skills including surface mount rework

Work Experience

Ettus Research (Consultant) Santa Clara, CA — January 2015 – Current
Providing technical and application support for software defined radios and digital signal processing tool kits including Verilog RF Network on Chip blocks

Nameloop Glasgow, UK — February – September 2015
Developing and extending the Android client
Added instrumentation, ported to modern libraries and IDE, improved responsiveness

Range Networks (Consultant) San Francisco, CA — January 2013 – May 2014
Finalized (Altium), manufactured, and debugged a software defined 3G cellular base station radio
Designed and implemented the Linux driver (C++) and embedded ARM firmware (C/ASM)
Improved the FPGA signal processing pipeline and added self test architecture (Xilinx, Verilog)
Performed RF characterization and improved the analog filter circuitry

Space Exploration Technologies Los Angeles, CA — Summer 2012
Designed, manufactured, and programmed an 802.14.5 wireless sensor network (MSP430, C)
Performed functional, thermal, and vibration qualification of flight electronics
Created assembly procedures and drawings for ground based communications equipment

Projects

Radio Direction Finding Hardware — 2012
Designed and manufactured a UHF log periodic antenna
Performed HFSS and Wipl-D EM simulation and RF anechoic chamber tests on the prototypes
Designed an offset variable attenuator and small form factor UHF transceiver

APRS VHF Transmitter — 2011 – Current
Designed and produced multiple revisions of a frequency agile position beacon
Implemented embedded firmware and communications protocols
Increased runtime to five months by reducing standby current by a factor of 150

Papers

Evolution of Digital Modulation Schemes for Radio Systems — GECCO — 2014

Talks

Optimization of Digital Modulation Schemes — GNU Radio Conference — 2015
A Short History of Hardware Abuse — GPU Technology Conference — 2014
SDR and GNU Radio Companion for Amateur Radio — Pacificon — 2013

Activities

Wireless Innovators Technical Operations Manager — Fall 2013 – Fall 2015
Carnegie Tech Radio Club President — Carnegie Mellon University — Fall 2009 – Fall 2012
Computer Club President — Carnegie Mellon University — Spring 2009 – Spring 2012

Volunteer Experience

Amateur Radio Relay League Assistant Section Manager — Spring 2014 – Present
Neighborhood Improvement Volunteer — Spring 2013 – Present