

TECHNICAL SKILLS

Experienced in analog and digital design

- Switching and linear power supplies
- SPI, I²C, USB, Ethernet interfaces
- Familiar with antenna design
- Microcontrollers and FPGAs

Schematic capture, layout, routing, and simulation

- Allegro, OrCad, Altium, EAGLE, LTSpice, Multisim
- Proficient at reviewing boards and schematics

Board bring-up and prototyping on PCB, Flex, Perfboard

- Exposure to DFM and production ramping
- Soldering 0201 and various fine-pitch packages
- Power Analyzers, Network and Spectrum Analyzers, Various Probes, Signal Generators, Frequency Counters

Low-Level firmware development

- C, VHDL, Assembly - ARMv7 and x64

High-Level application development

- C++, C#, JavaScript, Java

Web-application development

- HTML5, CSS3, jQuery, Angular, Node

GPIO and Ethernet automation scripting

- Agilent, Keysight, Keithley SCPI libraries
- Ruby, Python, MATLAB, Shell, Batch, SQL

WORK EXPERIENCE



Tyto Life LLC

Burlingame, CA, USA

Hardware Engineer

Sept. – December 2015

- Lead the design of a full system development board
- Helped design an extremely low-power battery switch-over circuit
 - Consumes under 2uA of quiescent current
 - Dynamic switching through analog and digital controls
- Assisted in Radar/WiFi/BLE antenna design and tests
 - Feed point placement and routing studies
 - Efficiency and return loss studies for mechanical topologies
- Improved overall power consumption by roughly 70%



Apple Inc.

Cupertino, CA, USA

Watch Hardware Engineer

Jan. – May 2015

- Designed and fabricated test boards to:
 - Generate and inject 10Hz – 10Mhz sine waves onto a DC rail for noise rejection measurements under high capacitive loads
 - Dynamically bias flex connectors to log increases in dendrite formation and contact resistance
- Programmed an automated validation system for full power analysis, I²C/SPI interface tests, and clock stability



Genesys Labs

Toronto, ON, Canada

Software Developer

May – Sept. 2014

- Fully developed a front-end software framework for use in all current and future AngularJS based applications and tools
 - Full build process and unit testing with Grunt, Bower, and Jenkins
- Helped port applications from Backbone.js to AngularJS

EDUCATION

B.A.Sc. Candidate for Electrical Engineering – University of Waterloo

- RF and Microwave Circuits, Integrated Digital Electronics, Power Electronic Converters, Transmission Lines and EM Waves, Analog Control Systems, Electronic Circuits

Waterloo, ON, Canada
Sept. 2012 – Present

PERSONAL PROJECTS

Signal Generator

Developed a mixed analog/digital board to digitally synthesize sine, square, and triangle waveforms of up to 5 MHz. The phase, frequency, amplitude, and DC offset can be altered either manually on board, or through a custom web interface that is hosted locally over Ethernet. Currently working on improving the analog output's reconstruction filter and board bring-up.

LED Music Visualizer

Developed an analog circuit to drive a large array of LED's to the beat of any music source. The frequency sensitivity can be manually tuned based on the genre or quality of the source and it is capable of supplying up to 250mW. Board schematics and routing was done in Altium, and the final product was hand etched and soldered.

Benchtop Power Supply

Created a DC power supply with a 1.5A variable output ranging from 2V to 10V and a dedicated 3.3V digital rail from a spare computer PSU. It displays the voltage on a three-digit seven segment display with a PIC.