Shaheen Moubedi

ELECTRICAL ENGINEERING – 4TH YEAR

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TECHNICAL SKILLS

Experienced in analog and digital design
- Switching and linear power supplies
- SPI, I^2C, USB interfaces
- Knowledge of 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, Perfboard, Flex
- 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

GPIB and Ethernet automation scripting
- Agilent, Keysight, Keithley SCPI libraries
- Ruby, Python, MATLAB, Shell, Batch, SQL

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

WORK EXPERIENCE

Tyto Life
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
- Decreased standby 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, I^2C/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

PERSONAL PROJECTS

Signal Generator
Designed a single-channel analog and digital circuit to generate sine, triangle, and square waves of up to 5 MHz for high impedance loads. It utilizes an NXP ARM-based MCU to interface with a computer over Ethernet, and with a DDS component over SPI. Currently optimizing the analog output stages to feature higher driving capabilities and an improved reconstruction filter.

LED Music Visualizer
Developed an analog circuit to drive an array of LED's to the beat of any music source. Audio frequency sensitivity can be manually tuned based on the genre or quality of the source and it is capable of supplying up to 80mA to the lights. Board schematics and routing was done in EAGLE, 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.

EDUCATION

B.A.Sc. Candidate for Electrical Engineering – University of Waterloo
Waterloo, ON, Canada
Sept. 2012 – Present

- Transmission Lines and EM Waves, Analog Control Systems, Electronic Circuits, Digital Circuits and Systems, Linear Circuits, Semiconductor Physics, RF and Microwave Circuits (Planned)