Nicholas Skupien

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Computer Engineering

Skills Summary

Programming Experience:
- Java, Android Dev
- Objective-C/Swift, iOS Dev
- PHP, JS/jQuery, HTML5, CSS
- C, Assembly
- C++
- VHDL

Software:
- Altium/Eagle CAD
- Circuit Simulation in Multisim
- Matlab
- Photoshop/Illustrator
- Chrome DevTools
- Git

Hardware:
- STM32, Arduino & FPGA's

Lab and Project Experience:
- Schematic & PCB design
- Board bring-up
- 3D Printers
- Oscilloscopes and DMMs

Projects and Extracurriculars

Waterloo Formula Electric – University of Waterloo **September 2017 to Present**

Electrical Lead (see nicholasskupien.com for project pictures and documentation) **May 2018 to Present**
- Took the responsibility of electrical lead in spring 2018; lead ~10 students on board bring-up, firmware, and testing
- Designed a sensor interface PCB located on each wheel that measures suspension force, tire speed, various temperatures, coolant pressure and other analog signals in Altium
- Routed PCBs for the battery management unit and vehicle control unit
- Board bring-up using solder paste + reflow on SMT and solder wire + iron on through-hole components
- Trouble shooting and problem-solving PCBs when getting unexpected outputs
- Wrote the firmware for an STM32 microcontroller on the battery management unit in C
- Interacting with the vehicle's CAN bus to transfer data from STM32s and motor controllers
- Managed time efficiently between school and working on the team

Mini Projects/Self Learning
- Created a desk backlight using an Arduino connected to 3 MOSFETS to control each colour of an LED light strip
- 3D printing useful tools
- Designed a phone case to 3D print using OpenSCAD
- Built my own PC and fixed water damaged motherboards
- Experimented with machine learning classifiers and regression methods and learned the algorithms behind the scenes

Education

Candidate for Bachelor of Applied Science at the University of Waterloo

Term Projects: **2016 to Present**
- Programmed on the kernel level with a RTOS in C
- Interfaced with a FPGA flashed with NIOS II microcontroller in C to play back audio files from an SD card using I2C
- Simulated amplifier circuits in Multisim for frequency response and filter analysis to improve on theoretical calculations
- Implemented a traffic light controller using a state machine in VHDL on an FPGA
- Created a gesture controlled Android game using OOP in Java and Android Studio

Work Experience

rBux – Bracebridge, Ontario

Full Stack Web and Mobile App Developer **January 2018 - April 2018**
- Reduced time to load notifications by 3 times in the mobile app through asynchronous loading and image/layout caching
- Expanded native content in the hybrid mobile app by using web requests to pull data from the database
- Trouble shooting and problem solving countless bugs with the mobile app
- Self-taught PHP, HTML, CSS, JS and jQuery
- Redesigned the UI and UX of the web app and mobile app for greater usability and simplicity
- Designed a responsive landing page seen by new customers
- Used Adobe Illustrator and Photoshop to create numerous new image assets for the company
- Gained an understanding of marketing and necessary strategies as a team member in a new e-commerce startup

Equitable/EQ Bank - Toronto

QA Analyst **May 2017 - September 2017**
- Converted manual regression testing methods to automated GUI and API testing using Visual Basic and Groovy scripts