Michael Hosue
2B Mechatronics Engineer

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SKILLS

Software Tools		Hardware	Courses
C++	Unix	Circuit design	Circuits
C	MySQL	Arduino	Sensors and Instrumentation
Java	QT	Photon	Linear Systems and Signals
Python	Bash	Raspberry Pi	Algorithms and Data Structures
Git	Firebase	MSP 430	Computer Structures and Real Time Systems
JavaScript	HTML & CSS	Microprocessors	Microprocessors and Digital Logic
PLC	Bootstrap	Microcontrollers	
Tomcat	NodeJS	Sensors	
Matlab	Cascade CMS	AutoCAD	
		Solidworks	

EXPERIENCE

Computer Engineer
AGFA Graphics - 2016

Developed and tested user control software for industrial printers in C++ and QT used for GUI.

Improved product safety by implementing a collision detection setting allowing the print head to scan for possible collisions prior to printing.

Increased bulk printing efficiency by 150% through implementing layered pauses; allowing users to set 'media change' pauses prior to printing.

Web Developer
Canada Company - 2015

Design, code and test functionality changes to web site in Java and database (MySQL).

Reduced time taken by 200% to authenticate members by optimizing loading time.

Identified and implemented solutions to patch bugs and security risks.

Security Researcher
BlackBerry - 2015

Planned and identified key steps in compiling Linux kernel fuzzer in C to run on Android firmware.

Developed strategy to optimize mobile debugging tools.

Analysed and documented Android specific kernel space applications and drivers.

PROJECTS

Bright Box
1st place at UofT Hacks
Created smart light switch using "Particle" prototyping board providing users control and ability to set alarms and schedules over HTTP requests via an android application.

Linear Variable Differential Transformer
An electro-mechanical transducer used to measure displacement through change in induced EMF. An Arduino collects the output and displays the final displacement with 3% uncertainty.

Lazy Car
Hack Western
Modified RC car using Arduino to allow users to steer using hand gestures (with the "Leap Motion") and see from a "real life" POV with the Oculus VR headset.

Nerf Guard Turret
Developed control software for NXT nerf turret with automated target lock on using ultrasonic sensors and remote control capabilities via Bluetooth connection.

Where Are You
Boston Hacks - "Greatest Impact Hack"
Made web application to help families find missing loved ones using facial recognition APIs, a NODE server and MySQL database.

R.unear.me
McHacks - "Top 10 Hacks"
Web app allows users to see friends on map with real time location updates, and directions. Used Firebase to provide real time updates.