Henry Wang

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Skills Summary

Programming Languages: Assembler, C/C++, C#, Java, MATLAB, Python, VHDL
IDEs: Visual Studio, Eclipse, Keil, Unity
Tools/Frameworks: Android Development, Arduino, Git, MEX API, OpenCV, Perforce
CADs: AutoCAD, DipTrace, Multisim, Fritzing, SolidWorks

Education

University of Waterloo, Waterloo, ON Spring 2020
Bachelor of Applied Science, Computer Engineering
Dean's Honours List Winter 2015, Winter 2016
Relevant Courses: Operating Systems, Embedded Microprocessor Systems, Digital Computers

Work Experience

Firmware Engineering, Infinera, Ottawa, ON Winter 2017

- Optimized (C++) source code implementations to reduce runtime (25-33%) and improve accuracy (5-13 dB in SNR) of fixed-point fast Fourier transform functions
- Used an Eclipse-based embedded processor simulator to create and automate Makefile based unit tests
- Created Visual Studio MEX projects and MATLAB scripts to test C++ programs in MATLAB

Puzzle Engineering, Escape Games Canada, Toronto, ON Spring 2016

- Designed, programmed, built, debugged, and installed Arduino based embedded systems (e.g. keypad sequencers, electromagnetic locks, RFID readers, and illuminated pressure plates)

Project Experience

RoboHacks Winter 2017

- Used the Leap Motion Python API to control an Arduino robotic arm based on hand position and gestures

Hack the North Fall 2016

- Programmed a Python script to automate the selection of Tinder users based on facial image analysis

Remote Controlled Arduino Car Spring 2016

- Used SolidWorks to draft chassis before 3D printing and assembly
- Interfaced IR receiver with the Arduino and motor shield to decode remote control signals

Interactive Floor Display Spring 2016

- Manufactured, assembled and wired hardware for 160 sq. ft. of illuminated pressure plates
- Setup I2C bus between Pi master and Arduino slaves to transmit color and switch states
- Installed and interfaced Arduino Ethernet clients with Rasperry Pi LAMP server

Personal Facial Image Filter Spring 2016

- Implemented basic image processing concepts with OpenCV and C++
- Program superimposes a mask image onto the region of the video frame containing the face

University of Toronto Hacks Winter 2016

- Developed a 4x4x4 game of Tic-tac-toe in Unity (C#) that uses Leap Motion's hand motion and gesture recognition to provide a 3D interactive user interface