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

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

Chess Game Android Application Spring 2016

- Created a fully functional chess game for Android mobile (Java) with user friendly features such as tile highlights, unlimited undos, resets, automatic saving and reloading of game states

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