AndrewPai

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Technical Skills

- **Java** (2 Years)
-**Android Development** (1 Term)
- **C++** (2 Terms)
- **Python** (1 Term)
- Git, Mercurial, and Subversion
- Arduino (1 Year)
- Circuits (2+ Years)
- VHDL (1 Term)
- ARM Assembly (1 Term)
- MATLAB (1 Term)
- PowerShell (2 Months)

- Applied OOP knowledge in Android Studio to develop a 2048 android game which took input from the phone sensors, processed it through a low pass filter, and then into a finite state machine to be interpreted
- Analyzed circuits using function generators and oscilloscopes to demonstrate theory taught in class
- Used Quartus Prime to develop FPGA designs and perform timing analysis
- Programmed an ARM Cortex-M3 using ARM Thumb Instruction Set

Hackathons

Carleton University Hackathon
Ottawa, Ontario - Mar 17

- Utilized/Learnt Bootstrap, HTML, and CSS to visualize a home network
- The home network displayed info about any connected devices to the network and warning notifications if there was a problem with the devices
- Runner-up winner for Martello's API challenge

Education

University of Waterloo
Candidate for Bachelor of Applied Science in Electrical Engineering
2016 – Present
1A - Top 30
1B – Top 25

Experience

Automation Engineer — Toronto, Ontario
Sensibill Inc. — Sep – Dec '17

- Created and updated test scripts to automate the testing of Web, Android, and iOS apps to more efficiently cover twice as many test cases
- Abstracted test code to make it object-oriented, resulting in better code maintenance, reusability, robustness, and readability
- Utilized Jenkins, Selenium/Appium, Maven, Bitbucket, and TestNG, to easily run sanity or regression tests on the newest builds anytime
- Assisted web team with front end by making core features of the web app accessible to meet Accessibility Ontario's requirements within 2 weeks

Junior Engineer — Ottawa, Ontario
Communications Research Centre Canada — Jan – Apr '17

- Wrote scripts in Python and PowerShell to automatically tag VM's in Azure and update IT asset information for asset management
- Reduced processing time of 900 assets from about 2 hours of manual work to 15 minutes automated with error catching of invalid items
- Researched, tested, and presented different programs/hardware to understand what their capabilities were and

Quality Control — Markham, Ontario
Markham City Hall – IT Department — Sep '14 – Jan '15

- Performed quality control on Markham website by completing test cases to ensure form functionality on various platforms and UI issues
- Systematically organized results onto Excel for easy tracking
- Cooperated with coworkers in other departments through phone and email by utilizing strong verbal and written communication skills

Projects

Shape Database — Nov '15
Java — ShapeInheritance

- Implemented core OOP concepts to create a database of various shapes
- Capable of adding/removing objects from database and retrieving info about each object, perimeter and area, using an unique ID
- Utilized abstract classes, hierarchical inheritance, polymorphism, and encapsulation for the shapes unique formulas but similar dimensions

Assembly Language Parser — Nov – Dec '16
C++ — AssemblyParser

- Parses each line of assembly code, recognising diverse types of instructions and parameters with varying number of parameters
- Output syntax errors, invalid parameters, and location of the error within the program code, while ignoring comments

Traffic Light Simulator — Apr – July '17
VHDL

- Two 7-segment displays displayed the various stages of two traffic lights, buttons to activate pedestrian crossing for each light, and switches to enable night or low power mode
- Implemented Moore State Machine to switch to the correct light stage depending on the current state, inputs, and the cycle generator
- Utilized D Flip-Flops to create a synchronizer that prevented metastable states by syncing with the leading edge of the clock