ANDY REN

Computer Engineering at University of Waterloo

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EXPERIENCE

Software Developer
VirtaMove

📅 September 2019 – December 2019   📍 Kanata, Canada

- Built a robust internal test framework for VirtaMove using **Python** and **Robot Framework**, which executed release-critical manual tests nightly, reducing software testing and verification time by up to **50%**
- Implemented client features in **C++** and **C** which enabled V-Migrate host certificate regeneration, and resolved various runtime concurrency errors
- Configured the V-Migrate installer to automatically resolve TCP/IP port collisions, and perform closed network installation using **WiX Toolset**
- Redesigned migration agent key generation, enabling V-Maestro to communicate with previously linked agents after a system reboot, which improved product scalability
- Prototyped a new product activation graphical interface for migration licensing using **C#**, **.NET Core**, and **C++**

Web Analyst
Agriculture and Agri-Food Canada (AAFC)

📅 January 2019 – April 2019   📍 Ottawa, Canada

- Developed responsive web interfaces using **JavaScript**, **HTML** and **CSS** for intra-departmental clients on the AAFC **SharePoint** platform
- Rewrote web scraping scripts in **PowerShell** using the **SharePoint API** to improve parsing functionality for remote endpoint tabulation of departmental **SharePoint** usage statistics
- Communicated with clients regularly to build practical, maintainable solutions and ensured that sensitive information was properly handled per the **Access to Information Act** and **Privacy Act**

PROJECTS

home-monitor
github.com/ren-andy/home-monitor

📅 August 2020

- Built a multi-threaded home monitoring embedded system using a **Raspberry Pi 3B+** and **C++**, which was capable of detecting alerting nearby intruder movement, reading and displaying temperature and humidity, and playing music.

CareerCounsel
github.com/ren-andy/cuhacking-app

📅 February 2019   📍 CUHacking 2019

- Developed a **React** web application for CUHacking 2019 coupled with an **Express.js** backend that retrieves **Indeed** and **Github** job postings based on user inputted search parameters, and classifies them by levels of education and experience

SUMMARY

- Professional software development and automation testing experience in **C++**, **Python**, **C#** and **JavaScript**
- Practical experience in **RISC-V** assembly, **VHDL**, and programming **Arduino**-like micro-controllers

SKILLS

Languages

`C++` `Python` `C` `MATLAB` `JavaScript` `C#` `RISC-V` `VHDL`

Frameworks and Tools

`Linux` `Robot Framework` `.NET Core` `Git` `Node.js` `Raspberry Pi` `Arduino`

ACTIVITIES AND SOCIETIES

⚙ **ECE Society VP Academic**
Advocate for the academic interests of **ECE** students departmental level

💓 **Fitness Enthusiast**
Avid weightlifter and long-distance runner for the past two years

🎵 **Lifelong Musician**
Played **Piano**, and **Alto Saxophone** for over ten years

EDUCATION

Candidate for BASc, Computer Engineering
University of Waterloo

📅 September 2018- Present

- Expected Graduation - May 2023
- Relevant Courses:
  - ECE 250 - Algorithms and Data Structures
  - ECE 224 - Embedded Microprocessor Systems
  - ECE 252 - Systems Programming and Concurrency