

Matthew Penny

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{} github.com/mwpenny

Education

Carleton University
2013 – 2017

Bachelor of Computer Science

- Computer and internet security stream
 - 11.87 CGPA (out of 12.0; A+)
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Skills

Programming

- Fluent in C, C++, C#, Java, Lisp, JavaScript, Python, Bash, and PowerShell
- Strong knowledge of mobile development for Android
- Developed kernel-level software for interfacing with hardware devices under Linux

Software

- Thorough understanding of industry-standard software including Git, SQL, LaTeX, Hadoop, Microsoft Office, Visual Studio, Eclipse, and IDEA
- Experience building web applications with AngularJS, jQuery, Bootstrap, and Node.js
- Reverse engineered a largely undocumented API and created software to interface with it

Hardware

- Programmed and debugged embedded systems and their peripheral devices
- Worked with NAND flash controllers to develop a firmware updating utility
- Created software to emulate embedded processors and proprietary video game hardware

Team

- Familiar with Agile development methodologies such as Scrum
 - Experience collaborating with team members to refine product requirements and plan implementation
 - Comfortable debugging and modifying existing codebases
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Recent projects

Automated rent and utility bill system

- Created a dashboard for viewing bill invoice data and D3.js visualizations over time
- Implemented web scrapers to automatically check for new bills
- Utilized the Facebook API to build a notification system via chat messages

NES and Gameboy emulators

- Developed software emulators for the Nintendo Entertainment System and Gameboy to learn more about low-level systems programming
 - Targeted the Android platform for the Gameboy emulator and employed a modern UI to learn more about mobile development and UX
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Work experience

Royal Canadian Mounted Police

May 2017 – Aug. 2017

Co-op Software Developer

- Developed high and low level tools using C, Python, and JavaScript for use in RCMP investigations
- Created a custom file format for effectively storing and organizing evidence
- Reverse engineered and documented a predominantly undocumented API to create a client application

Apption Software

May 2016 – Aug. 2016

Co-op Software Developer

- Wrote performance-critical code for data quality assessment and analytics
- Created a distributed toolset to parse and analyze large malformed datasets
- Modified an open-source data visualization package to include support for layered geographical maps
- Implemented custom cluster analysis and fuzzy hashing algorithms to discover relational patterns in data

Royal Canadian Mounted Police

May 2015 – Dec. 2015

Co-op Embedded Systems Developer

- Developed full-stack software for specialized embedded hardware to facilitate police investigations
- Designed a modular architecture for remote control and configuration of devices in the field
- Wrote low-level C applications to interface with hardware such as cellular modems and GPS receivers
- Created a web application to easily manage RCMP devices and an API to integrate them into existing systems

Carleton University

Jan. 2015 – Apr. 2015

Teaching Assistant

- Conducted weekly tutorials to reinforce course material
- Provided guidance and feedback to students to improve comprehension of core concepts
- Strengthened student understanding of material by answering questions as they arose

Canada's Wonderland

Jun. 2014 – Aug. 2014

Games Supervisor

- Supervised multiple employees and locations enforcing park policies
 - Developed and implemented sales strategies to drive revenue
 - Created and maintained a positive work environment by giving regular feedback and guidance to staff
 - Responsible for training new employees on game operating procedures
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