

# William Findlay

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## EDUCATION

**Master of Computer Science** *Carleton University*  
September 2020 - April 2021 *Ottawa, ON*  
Accelerated Master's Program  
CGPA: 12.0 (A+) (*Course work completed during bachelor's degree*)

**Bachelor of Computer Science** *Carleton University*  
September 2015 - April 2020 *Ottawa, ON*  
Computer and Network Security Stream  
Accelerated Master's Program  
CGPA: 11.5 (A)

## WORK EXPERIENCE

**Research Assistant** (Linux OS Security) *Carleton University*  
April 2019 - Present *Ottawa, ON*

- Researching the viability of eBPF-based implementations for intrusion detection and confinement under GNU/Linux.
- Designed and implemented ebpfH, an intrusion detection system based entirely on eBPF system introspection.
- This research was the subject of my 2019/2020 honors thesis. You can read my thesis at <https://williamfindlay.com/written/thesis.pdf>.

**Teaching Assistant** (COMP3000 Operating Systems) *Carleton University*  
September 2018 - Present *Ottawa, ON*

- Nominee for the [Outstanding Teaching Assistant Award](#) in both the 2018/2019 and 2019/2020 academic years.
- Assisted the professor in development of course material.
- Ran tutorial sessions for groups of 50 students.
- Took a leadership role to ensure tutorials proceeded smoothly.
- Held weekly office hours and workshops for students.
- Graded assignments and tests and gave appropriate feedback.

**Service Department Supervisor** *Metro Ontario, Inc.*  
April 2014 - January 2018 *Ottawa, ON*

- Managed day-to-day operations in the front end service department.
- In charge of store payroll and accounting on a part-time basis.
- Exhibited superior customer service skills as required.

## PROJECTS (See more on [GitHub](#))

**ebpfH (eBPF Intrusion Detection System)**

- An intrusion detection system for Linux written entirely in eBPF and Python3.
- Establishes per-executable system call profiles in order to establish normal behavior and detect anomalies.
- Full source code available: <https://github.com/willfindlay/ebph>

**bpf-keylogger (eBPF Keylogger Program)**

- Fully functional keylogger for GNU/Linux written in eBPF and Python3.
- Full source code available: <https://github.com/willfindlay/bpf-keylogger>

## LANGUAGES

**Programming**  
10,000 or more lines  
C, C++, Python

5,000 - 10,000 lines  
Java, Javascript

1,000 - 5,000 lines  
Vimscript, R, Rust, Golang

**Markup**  
L<sup>A</sup>T<sub>E</sub>X, HTML, CSS, Markdown

**Human**  
English, French

## WORKFLOW

**Operating System**  
GNU/Linux (Arch Linux)

**Window Manager**  
i3wm

**Shell**  
Zsh

**Text Editor**  
Vim

**Version Control**  
Git, GitHub

## TECHNOLOGIES

**Kernel Development**  
eBPF, XDP, bcc

**Application Development**  
flask, node.js, Qt

**Data Science**  
numpy, scipy, pandas, R

## SKILLS

**Technical**

- Linux kernel development
- Low level systems programming in C, C++, and Rust
- Python scripting
- Technical writing and documentation

**General**

- Research
- Communication
- Team leadership