# William **Findlay**

github.com/housedhorse ● wfindlay.com
(613) 296-1240 ● william@wfindlay.com

## EDUCATION

**Bachelor of Computer Science**  *Carleton University*
September 2015 - April 2020  *Ottawa, ON*
Computer and Network Security Stream
Accelerated Masters Program
CGPA: 11.0 (A)

## WORK EXPERIENCE

**Undergraduate Researcher** (Linux Kernel Security)  *Carleton University*
April 2019 - Present  *Ottawa, ON*

- Researching the viability of eBPF-based implementations for intrusion detection systems on the GNU/Linux operating system.
- Designed and implemented `ebpH`, an intrusion detection system that uses eBPF-based observability filters to establish regular process behavior and detect anomalous system call patterns
- Project is currently closed-source pending publication.

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

- Nominee for the Outstanding Teaching Assistant Award
- 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.
- Proctored exams for about 200 students.
- Assisted professor with development and delivery of course material.

**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)

**Raspberry Pi GPIO Pin Driver**
- Wrote a character device driver Linux kernel module to act as a driver for GPIO pins on the Raspberry Pi.
- Module supported read and write operations to set active pins, read pin input, and write pin output.
- A full writeup on the module is available at https://wfindlay.com/assets/written/3000report.pdf

**Asciify (ASCII Art Generator)**
- Wrote an ASCII art generator CLI in Python3.
- Generator takes an image or GIF as input and produces ASCII art output.
- Full support for color and black and white ASCII art.
- Full support for ASCII animated GIFs.

**Genetic Algorithm for Text Generation**
- Wrote a genetic algorithm in C++ to generate a human-readable string from random data.

## LANGUAGES

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

5,000 - 10,000 lines
Java, Javascript

1,000 - 5,000 lines
Haskell, Prolog, Vimscript, R, Common Lisp

**Markup**
Markdown, Rmarkdown, LaTeX, HTML, CSS

**Human**
English, French

## TECHNOLOGIES

Linux Kernel development, eBPF, bcc, Qt, NodeJS, Tensorflow, ReactJS, Git, Bash

## WORKFLOW

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

**Window Manager**
i3wm

**Terminal and Shell**
Termite, Bash

**Text Editor**
Vim

**Version Control**
Git, GitHub

## TECHNICAL SKILLS

GNU/Linux kernel development
Low-level C development
C++ development
Python scripting
Statistical analysis in R
Documentation in LaTeX and Rmarkdown

## GENERAL SKILLS

Team leader
Dedicated
Goal-oriented

## EXTRACURRICULAR

Avid Linux user
Free software enthusiast
Computer builder
Study group leader for friends and peers