Tim Flannagan

Leominster, MA 01453 • (774) 670-8897 • timothy_flannagan@student.uml.edu
github.com/timflannagan • linkedin.com/in/tim-flannagan

PROFESSIONAL EXPERIENCE

Platform Storage Intern
Red Hat **May 2018—Present, Westford, MA**

- Joined the platform storage team in the operating systems department.
- Participated in the development and testing of an Ansible role used to manage local storage configuration.
- Wrote custom Ansible modules in Python based on listed requirements. This was geared towards proper documentation, testing, and adding more functionality to existing Ansible playbooks.

Food Service Worker
Barbers Crossing North **March 2012—August 2018, Sterling, MA**

- Took food orders from customers and explained offerings.
- Assisted with cleaning and arranging table during a shift.

PROJECTS

Linux Storage Role

- Contributed to an open-source project hosted on Github that handles the local storage configuration process.
- Opened issues to help point out bugs, or add enhancements and ideas to the current project state.
- Opened pull-requests to help extend the project's functionality, then worked with other contributors during the code review process to get the pull request merged.
- For Python programs, the PyTest framework was used for unit testing and Pylint for PEP-8 styling standards.

Racket-Subset Language Compiler:
• Developed a multi-pass compiler in C++ that translates a source Racket-subset program into an actionable x86-64 assembly program.
• The source program is first processed into multiple abstract syntax trees, removing variable shadowing and nested expressions, before being translated to an intermediate language, which models the C-language.
• In order to translate the intermediate language into the x86-64 language, variables need to be allocated to a finite set of CPI registers or spilled to a location on the stack.
• The compiler supports control flow constructs, register allocation using variable liveness analysis and graph coloring methods, and code optimizations using the Waddel inlining algorithm.

Two-Factor Biometric Authentication IoT Device:
• Worked with Python, Flask, MariaDB, and a Raspberry Pi3 to create a two-factor biometric authentication interface.
• Authenticated a user login using a backend username and hashed password database, and a matched fingerprint when the user scans their fingerprint with the sensor.

Ansible Device Encryption:
• Wrote an Ansible role that automates the encryption and removal of encrypted dm-crypt devices in Linux.
• Used the LUKS format for device encryption, and utilized the bash cryptsetup command for dm-crypt managed device-mapper mappings.

EDUCATION

Bachelor of Science in Computer Science
University of Massachusetts Lowell • Lowell, MA • Fall 2018

RELEVANT COURSEWORK

• COMP.3080 - Introduction to Operating Systems
• COMP.3500 - Special Topics (Internet of Things)
• COMP.4040 - Analysis of Algorithms
• COMP.4200 - Artificial Intelligence
• COMP.4610 - Graphical User Interface I

SKILLS

Languages: Python, C, C++, HTML5, CSS, Javascript, YAML
Concepts: Data Structures and Algorithms, Object Oriented Design, OS Fundamentals
Tools and Platforms: Bash scripting, Red Hat Linux, Ansible, Jinja2 templating, PyTest, Raspberry Pi