Hamilton Ferris

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Education

Winona State University   **Winona, MN**
Bachelor of Science - Computer Science (In Progress)   August 2022 - August 2026

Relevant Coursework

Advanced Algorithms

This course provides students with an algorithm-based introduction to discrete mathematical structures and their application to computer science. Topics include sets, relations, graphs, proof techniques, induction, recursive definitions, and recurrence relations. Applications include the correctness and complexity of algorithms.

Software Engineering

This course deals with the current trends of software engineering principles and techniques for methodical construction of large, complex software-intensive systems. Topics include software process, project management, quality assurance, configuration management, formal specification techniques, design methodologies, testing and validation techniques, and object-oriented methodologies.

Experience

Lead Student Systems Administrator   **Winona, MN**
Winona State University   February 2023 - Present

- Created, provisioned, and maintained Linux virtual machines to support internal applications, improving reliability and reducing manual operation overhead.
- Designed API-driven services to automate infrastructure actions previously handled manually.
- Expanded existing Ansible & Gitea CI/CD deployment to cover all servers, reducing previously error-prone updates and rollouts.
- Automated certificate renewal processes, decreasing worst-case time to completion by up to 850%.
- Deployed firewall configurations and squid proxy servers, strengthening system integrity and enhancing network efficiency by freeing up to 20% of bandwidth.

Projects

SCVMM Checkpoint API
Developer   February 2023 - Present

- Developed and integrated an internal SCVMM API to automate the creation and deletion of virtual machine checkpoints.
- Built a JSON API service using Flask, Waitress, and Python typing libraries for structured request handling.
- Implemented a PowerShell script to convert Python functions into SCVMM-compatible automation tasks.

Automatic Certificate Renewal
Designer/Developer   November 2024 - January 2025

- Automated Let's Encrypt certificate renewal utilizing the Azure-DNS plugin for seamless domain validation, allowing multiple redundant scripts to be deleted.
- Optimized certificate renewal script with bash scripting, reducing worst-case execution time by 850%.

Odisk
Designer/Developer   June 2025 - Present

- Used the inotify library to monitor filesystem read/write events and format the output for internal API consumption.
- Collaborating with Rust developers to rewrite in safe Rust using notify crates.

Skills

Languages	Python, Javascript, C, Java, Bash
Frameworks & Tools	Docker, Git, Github Actions
Systems & Automation	Networking Configuration, Linux, API Development, VM Provisioning
Databases	PostgreSQL, MySQL, MariaDB