Bailey Masters

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EDUCATION

Clemson University Honors College — Expected May 2026
Bachelor of Science in Computer Science, Minor in Cybersecurity — *GPA: 4.0*

WORK EXPERIENCE

Capstone Software Engineer — Aug 2025 – Present
Michelin — *Greenville, SC*
- Engineered custom code migration pipeline to convert COBOL to Java using multiple LLM-powered backend agents, benchmarking AWS Transform for cost, accuracy, and automation improvements.
- Collaborated with Michelin engineers to align migration tooling with real-world automotive software needs, presenting findings at weekly reviews.
- Implemented React frontend pages and connected them to the FastAPI backend through RESTful endpoints enabling real-time communication between the user interface and AI agents.

Automotive Security Undergraduate Research Assistant — Aug 2025 – Present
TigerSec Laboratory — *Clemson, SC*
- Modified, reviewed, and validated embedded C code implementing automotive communication protocols to ensure reliable ECU functionality and system performance.
- Developed a custom C implementation of the SOME/IP network protocol for the Zonal Architecture Testbed (ZAT), adapted from the Python someip library for embedded use.
- Assisted in developing a React-based front-end dashboard that enables real-time interaction and visualization of ZAT network traffic and test results via RESTful APIs.

Cybersecurity Intern — June 2025 – Aug 2025
Pharmaceutical Associates Inc. — *Greenville, SC*
- Enhanced cybersecurity posture by monitoring SIEM alerts, documenting incident response procedures, and maintaining an accurate IT asset inventory for risk assessment and audit readiness.
- Developed comprehensive cybersecurity policies and procedures by leveraging NIST frameworks (CSF, SP 800-53) to align organizational security practices with industry standards.
- Performed infrastructure maintenance, including patch management, vulnerability remediation, and automated data backups, ensuring system integrity and compliance with security best practices.

Software Development Teaching Assistant — Jan 2025 – Aug 2025
Clemson University — *Clemson, SC*
- Facilitated weekly office hours and provided one-on-one support to 100+ students, improving their understanding of Java programming concepts, debugging techniques, and IDE usage.
- Evaluated 30+ team-based Java projects assessing, industry best practices, SOLID principles, JUnit test coverage, and Git collaboration workflows.
- Provided actionable feedback on design patterns and anti-patterns, increasing code reuse in subsequent projects.

Resident Assistant — July 2024 – Present
Clemson University — *Clemson, SC*
- Mediated conflicts and facilitated open communication between residents, ensuring resolution and cohesion.
- Built strong relationships with 90+ residents and collaborated with fellow RA's to organize community events.

PROJECTS

Secure Credential Management System github.com/baileym12/python-credential-manager
- Developed a Python-based command-line application for secure management of API keys, tokens, and credentials using AES symmetric encryption to prevent unauthorized access.
- Implemented automated credential rotation policies with configurable reminders, integrated detailed audit logging for compliance tracking, and added search and filtering tools to improve usability and efficiency.

SKILLS

Languages: Python, C, C++, Java, Bash, SQL, PowerShell
Development: FastAPI, React, Flask, Tailwind, Node.js, Spring Boot, Docker, AWS, RESTful APIs
Cybersecurity: Splunk, Elastic Stack, Wireshark, Nmap, Burp Suite, Nessus, Metasploit, Snort, Scapy