SAMUEL MOCABEE

(406) 214-7396 | sam.mocabee@gmail.com | linkedin.com/in/samuel-mocabee

Bozeman, Montana

PROFESSIONAL SUMMARY

Dedicated cybersecurity professional with a strong foundation in computer science and currently pursuing a Master of Science in Cybersecurity at Montana State University. Demonstrated expertise in secure software development, network security, malware analysis, and threat intelligence. Proficient in multiple programming languages including Python, C/C++, and Java, with hands-on experience in system administration, database management, and AI/ML applications. Proven track record of delivering complex technical projects including compiler development, neural networks implementation, and data mining applications. Seeking opportunities to apply advanced cybersecurity knowledge and technical skills to protect critical infrastructure and develop innovative security solutions.

EDUCATION

Master of Science in Cybersecurity

Montana State University | Bozeman, Montana

August 2024 – Present (Expected Graduation: May 2026) | GPA: 3.94/4.0

Relevant Coursework:

- Advanced Algorithms – Study of complex algorithmic techniques including graph algorithms, dynamic programming, and computational complexity
- Advanced Data Mining – Machine learning techniques, pattern recognition, data preprocessing, and knowledge discovery from large datasets
- Malicious Code Analysis – Classify malware programs, developing binary retrofitting techniques to repurpose malware binaries, response to malware threats using static and dynamic analysis techniques

Bachelor of Science in Computer Science

Montana State University | Bozeman, Montana

August 2018 – December 2023 | GPA: 3.39/4.0

Relevant Coursework:

- Software Engineering – Full software development lifecycle, requirements analysis, design patterns, testing methodologies
- System Administration – Linux system configuration, user management, network services, security hardening
- Databases – SQL and NoSQL database design, query optimization, transaction management, data normalization
- Cyber Security – Network security, cryptography, vulnerability assessment, penetration testing, security policies
- Artificial Intelligence – Neural networks, machine learning algorithms, reinforcement learning, natural language processing
- Operating Systems – Process management, memory management, file systems, concurrent programming
- Networks – TCP/IP protocol suite, routing, switching, network security, wireless networks
- Web Design & Multimedia Development – Full-stack web development, responsive design, user experience

TECHNICAL SKILLS

Programming Languages

C, C++, Java, Python, SQL, JavaScript, HTML/CSS, MATLAB

Cybersecurity & Network Tools

Wireshark (Network Protocol Analysis), Nmap (Network Scanning), Metasploit (Penetration Testing), Kali Linux, Network Traffic Analysis, Vulnerability Assessment, Malware Analysis Tools

Development Tools & Platforms

Git/GitHub (Version Control), JetBrains IDEs (IntelliJ, PyCharm, CLion), VS Code, Unity Game Engine, Docker (Containerization), Linux (Ubuntu, CentOS, Kali), Windows Server

Software Development Methodologies

Agile, Scrum, Feature-Driven Development, Waterfall, UML Modeling, Test-Driven Development (TDD)

Specialized Areas

Machine Learning & AI, Data Mining, Database Administration, Compiler Design, Network Security, Secure Software Development, Encryption/Decryption, Malicious Code Analysis, System Architecture

Creative & Multimedia Tools

Adobe Photoshop, Adobe Premiere Pro, Blender (3D Modeling), Audio/Video Editing

PROFESSIONAL EXPERIENCE

Student Weekend Supervisor

Montana State University, Strand Union Building | Bozeman, Montana

September 2018 – Present

- Oversee weekend operations for a high-traffic student facility serving 15,000+ students, ensuring safety, security, and operational efficiency
- Manage and train team of student employees, delegating tasks and coordinating schedules to maintain optimal service delivery
- Troubleshoot complex audio-visual systems and technical equipment for events and meetings, demonstrating strong problem-solving abilities
- Provide exceptional customer service to diverse populations including students, faculty, staff, and visitors
- Respond to emergency situations and security concerns, applying critical thinking and decision-making skills
- Maintain detailed documentation of incidents, equipment issues, and operational procedures

Bridge Crew Carpenter

Lane Construction, I-85 Widening Project Phase 2-3 | North Carolina

May 2020 – August 2020, May 2021 – August 2021

- Constructed and maintained bridge formwork and support structures following precise engineering specifications
- Adhered to strict safety protocols in high-risk construction environment, maintaining zero-accident record
- Demonstrated adaptability and physical stamina while working in challenging outdoor conditions
- Contributed to timely project completion through effective teamwork and efficient task execution

RESEARCH & ACADEMIC PROJECTS

Compiler Implementation Project (CatScript)

Fall 2023

- Designed and implemented a complete compiler for CatScript programming language as senior capstone project
- Developed lexical analyzer, parser, semantic analyzer, and code generator using C++
- Implemented abstract syntax tree (AST) construction and type checking mechanisms
- Conducted comprehensive testing to ensure compiler correctness and optimize performance

Celebrity Social Network Analysis (Data Mining Project)

Spring 2024

- Developed web scraping application to extract data from New York Social Diary Archive
- Implemented text wrangling algorithms to parse and clean photo captions using Python and regular expressions
- Created graph-based visualization of celebrity relationships based on photo co-appearances
- Applied social network analysis techniques to identify influential nodes and community structures

Music Database Management System

Fall 2022

- Architected and implemented relational database for music streaming website using MySQL
- Designed normalized schema to minimize redundancy and ensure data integrity
- Developed complex SQL queries for user authentication, playlist management, and recommendation algorithms
- Implemented stored procedures and triggers to automate database maintenance tasks

Artificial Intelligence & Machine Learning Projects

Fall 2023

- Neural Networks: Implemented feedforward and convolutional neural networks from scratch using Python and NumPy
- Machine Learning Algorithms: Developed supervised and unsupervised learning algorithms including decision trees, k-means clustering, and support vector machines
- Reinforcement Learning: Created Q-learning and policy gradient agents for game-playing applications

Malware Code Analysis

Fall 2025

- Developed PE (Portable Executable) injection system implementing process hollowing techniques using Windows APIs (CreateProcess, VirtualAllocEx, WriteProcessMemory, NtUnmapViewOfSection) to dynamically load encrypted payloads into suspended processes
- Engineered encryption and executable modification tool that embeds encrypted payloads into PE file sections, handles relocation table patching, and manages image base addresses for cross-process memory operations
- Implemented low-level Windows process manipulation including thread context modification, memory allocation in remote processes, and PE header parsing to achieve runtime executable replacement

CERTIFICATIONS & TRAINING

Currently pursuing industry-recognized cybersecurity certifications including CompTIA Security+ and Certified Ethical Hacker (CEH)

PROFESSIONAL DEVELOPMENT & COMPETITIONS

Patriot CTF (Capture The Flag Competition)

2023-Present

- Active participant in cybersecurity competitions focusing on vulnerability exploitation, cryptography, and reverse engineering
- Collaborate with team members to solve complex security challenges under time constraints

SERVICE & LEADERSHIP

Volunteer, Fork and Spoon Soup Kitchen

Bozeman, Montana

- Regular volunteer providing meal service to community members experiencing food insecurity

Volunteer, Breadbasket Food Bank

Ronan, Montana

- Assisted with food sorting, packaging, and distribution to support local food assistance programs

ADDITIONAL INTERESTS & ACTIVITIES

- 3D Modeling & Animation: Create detailed 3D models and animations using Blender for personal and academic projects
- Video & Audio Production: Produce and edit multimedia content using Adobe Premiere Pro and Photoshop
- Cryptography Research: Study modern encryption algorithms and their applications in secure communications
- Malware Analysis: Research malicious code behavior and reverse engineering techniques

REFERENCES

Available upon request