



# Aashmit McKenzie

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## Professional Summary

Final-year Computer Science engineering student specializing in cybersecurity, with expertise in threat modeling, vulnerability assessment, and secure system design. Skilled in identifying exploit vectors, applying mitigation techniques, and interpreting security protocols. Delivers precise technical communication and problem-solving in constrained environments. Aiming to contribute to enterprise security operations and strengthen digital infrastructure through applied practices.

## Work Experience

### Junior Cybersecurity and Machine Learning Intern

All Safe IT Services | Nov 2024 - April 2025

Executed vulnerability assessment and penetration testing on internal environments aligned with OWASP Top 10 standards. Identified and validated common web vulnerabilities including SQLi, XSS, and IDOR. Documented findings with detailed PoC reports and recommended remediation strategies. Assisted in configuring security tools and supported the internal team in strengthening system defenses.

**Skills:** Vulnerability Assessment, Penetration Testing, OWASP Top 10, Burp Suite, Nmap, Risk Analysis, Web Application Security

## Academic Projects

### Access-Shield

- Built a real-time machine learning system to detect broken access control attacks using a custom dataset generated from DVWA, Juice Shop, and WebGoat deployed via Docker. Applied advanced techniques in web application security, automated threat detection, and Linux-based deployment. Improved detection accuracy by 96% on custom BAC dataset
- Skills:** Broken Access Control Detection, Machine Learning (MLP, KNN, Random Forest), Python Automation, Dataset Generation, Docker, Linux Scripting, Real-Time Threat Detection, Data Preprocessing, Model Evaluation.

### n-XOR PUF Attack Simulation Using GANs

- Engineered a machine learning framework using Generative Adversarial Networks to synthetically generate challenge-response pairs for n-XOR Physical Unclonable Functions. Simulated advanced attacks on hardware authentication systems to evaluate security resilience.
- Skills:** Hardware Security, Physical Unclonable Functions (PUFs), Generative Adversarial Networks, Synthetic Data Generation, Adversarial Machine Learning, Python (TensorFlow, PyTorch).

### Keylogger

- Designed and implemented a secure keystroke logging tool with encrypted data storage for controlled ethical hacking and system monitoring in security analysis environments.
- Skills:** Python Programming, Data Encryption, Keylogging Techniques, System Monitoring, Ethical Hacking.

### AWS-Based 3-Tier Cloud Architecture Deployment

- Deployed a scalable and secure 3-tier web application on AWS using React.js for the frontend, Node.js for the backend, and Aurora MySQL for the database. Configured VPC, EC2 instances, Load Balancers, Auto Scaling, and Nginx reverse proxy. Implemented secure access controls with IAM roles and Security Groups. Conducted performance testing and applied cost optimization strategies.
- Skills:** AWS Infrastructure, React.js, Node.js, Aurora MySQL, Nginx, Linux Administration.

## Education

### B.Tech in Computer Science and Engineering (Specialization in Security and Privacy)

Symbiosis Institute of Technology | 2022-2026

CGPA: 7.7

**Courses:** Information and Network Security, Cryptography, Software and Hardware Security, ML, NLP

## Technical Skills

**Programming:** Python, C, C++

**Security Tools:** Burp Suite, Metasploit, Nmap, Wireshark

**Operating Systems:** Kali Linux, Ubuntu

**Cloud & Deployment:** AWS (3-tier architecture, IAM, EC2, VPC), Docker, Linux Scripting

**Machine Learning:** MLP, KNN, Random Forest (cybersecurity applications)

**Ethical Hacking:** Penetration Testing, Vulnerability Assessment

**Hardware Security:** Physical Unclonable Functions (PUFs), GAN-based Adversarial Simulation

**Languages Spoken:** English, Hindi, Marathi

**Soft Skills:** Analytical Thinking, Problem Solving, Critical Thinking, Ethical Judgment, Attention to Detail, Leadership

## Certifications

- OPSWAT Web Traffic Protection Associate (Oct 2024)
- OPSWAT Legacy System Associate (Oct 2024)
- OPSWAT Secure Storage Associate (Oct 2024)
- OPSWAT File Security Associate (Oct 2024)
- OPSWAT Email Security Associate (Oct 2024)
- Introduction to Infrastructure Protection (Oct 2024)
- OPSWAT Cybersecurity Fundamentals Associate (Nov 2024)
- OPSWAT Endpoint Compliance Associate (Nov 2024)
- OPSWAT Data Transfer Security Associate (Nov 2024)
- OPSWAT Network Security Associate (Nov 2024)