

Akshay Kasthurirangan

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EDUCATION

George Mason University (Fairfax, Virginia)

Bachelor of Science (B.S.) in Cybersecurity Engineering

- 3.75 GPA (Dean's List - Spring 2024) Expected Time of Graduation: **May 2026**
- **Major Coursework:** Computing Digital Systems Engineering, Introduction to Computer Programming, Introduction to Cybersecurity Engineering, Systems Engineering Principles, Computer Programming Engineers, Object-Oriented Modeling and Design, Operating Systems, Computer Networking, Critical Infrastructure Protection, Data Breach Prep and Communication, Hardware and Cyber Physical Systems, Secure RF Communications

PROJECTS

AWS Cloud Solutions Architecture

- Deployed distributions using **CloudFront** networking to deliver static and dynamic content based content stored in **S3** buckets and optimized **content delivery** with performance
- Deployed an **Application Load Balancer** to manage **HTTP** and **HTTPS** traffic, observing reduced network latency, increased availability and improved application performance following web server and **DNS** provisioning
- Established multiple user groups for different use cases using **Identity Access Management** and implemented granular control by assigning specific roles, including Cross Account IAM Roles for S3 access and setting up **auditing** mechanisms to ensure security
- Deployed a **Network Load Balancer** to observe **TCP** and **UDP** traffic distribution with health checks to terminate unhealthy **EC2** instances and account for application reliability and performance
- **Governed** and centralized AWS account management through AWS Organizations, implementing **Service Control Policies** on Organizational Units to streamline **Risk Management** and leverage integration with other services
- Configured a root controlled **Elastic Network Interface** and attached to an existing EC2 instance as a **network failover** mechanism and improved overall system resilience
- Implemented cross region replication, cross account IAM and object **version control** in conjunction with **Lifecycle Management** to safeguard object files from application failure and ensure high availability

Cybersecurity

- Identified and exploited vulnerabilities such as **race condition** (Time of Check to Time of Use) and **buffer overflow** stack vulnerabilities, analyzing potential risks and presenting findings to inform risk mitigation strategies.
- Developed a chat application using **TCP Socket Programming** with an echo client and server to facilitate communication transmission in real time
- Employed **IP**, **MAC**, and **ARP** spoofing techniques in controlled Metasploitable environments to demonstrate **DoS** and **man-in-middle** security attacks
- Implemented **Dijkstra's** algorithm in **Python** to return the shortest path between nodes

WORK & LEADERSHIP EXPERIENCE

Loudoun County Public Schools - Instructional Substitute Teacher (January 2023 - Present)

- Provided one-on-one support to assist students overcome challenges with assignments and tasks
- Facilitated seamless transition and continued technological education in the absence of the head teacher

SKILLS

Tools/Languages: Python, C, Nmap, Wireshark, Metasploit Framework, Amazon S3, IAM, Amazon EC2

Skills: Risk and Vulnerability Analysis, Information Security, Programming, Cloud Solutions, Networking, System Design and Modelling, Operating Systems

Certifications & Training: 98-367: MTA Security Fundamentals, Simulink Onramp, MATLAB Onramp, Microsoft Office Specialist: PowerPoint (2016), IC3 GS6 Level 1 Digital Literacy Certification