ALEXANDRIA BURCHFIEL

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EDUCATION

Tennessee Technological University   Aug 2022 – May 2025
BSE Computer Science, Cybersec and Information Assurance Concentration   Cookeville, TN
- GPA 3.7
- Graduating at **18 years old**
- Rolling Dean's List
- Presidential Scholar

WORK EXPERIENCE

ARCS Aviation - Computer Science Intern / Lead QA Tester   Feb 2024 - Jan 2025
                                                                                  Cookeville, TN
- Oversaw and maximized **system/application security** and performance for various **government agency contacts.**
- Directed **server architecture** development and design decisions, contributing to scalable and secure server infrastructure (interplanetary file systems, .NET, JWT authentication, zero-trust architectures)
- Collaborating with the NSA to enhance company cybersecurity: implement advanced security solutions, including protective DNS automation, penetration testing, and other services to strengthen defense capabilities.
- Conducted **Penetration testing** for systems to be deployed and internal networks.
- Performed **code security** reviews
- Applied cybersecurity best practices to information system standards, directives and guidance for personnel, monitoring compliance across organization.
- Enabled on-time deployment and HTTPS connections of product experiencing networking issues by configuring root CA certificates and advising on a custom application security manifest, resolving a 3-year HTTPS security issue.
- **Threat Modeling** for new contracts.

CERTS & TRAINING

- MICROSOFT CERTIFIED: Windows Server Hybrid Admin Associate (in-progress)
- DOD Cybersecurity Training (CUI, InfoSec)
- CSSL Cert Prep 1: Secure Software Concepts
- GIT Certified: Git Kranken

PROJECTS

ZERO TRUST ARCHITECTURE - Win Server 16, RBAC, DNS. ACL's, Firewalls, Network Segmentation
- Developed a Zero Trust network architecture using Windows Server 16 and a client workstation, enforcing strict access controls and role-based access policies to secure network resources
- Configured Active Directory policies to implement RBAC, grouping users into organization units and security groups to restrict access based on role department.
- Applied network segmentation thru Windows Firewall rules, restricting communication between devices based on roles
- Monitored and logged activity by setting up event logging with Windows Event Viewer and SIEM integration, creating alerts for suspicious activity.

CROSS PLATFORM PORT SCANNER - C++11, multi-threaded & socket programming, async connections
- Developed two advanced port scanner applications, one for Unix-like systems and one for Windows, that demonstrate efficient network scanning through asynchronous, concurrent execution and non-blocking socket techniques.
- This program demonstrates concurrency, socket programming, C++11 threading, networking and API's.

MOBILE GAME APP SUITE - Leadership, game development, cross-functionality,
- This is an in-progress project. As seniors at TTU, we are assigned a customer to develop a product for our customer provided a previous team's framework and past code repository for my team to execute further development.
- SCRUM Master Responsibilities: Leading sprint planning, delegating tasks, and ensuring efficient workflow among team members to meet project milestones.
- System Design & Customer Collaboration: Designing system layouts, defining product scope, and conducting regular meetings with the customer to align on requirements and project goals.

SKILLS

- Cybersecurity & Penetration Testing: Vulnerability Assessment, Network Scanning, Port Scanning, Access Control Policies, Threat Modeling, 0-trust architecture, Automated & Manual Code Reviewing, Risk Assesment,
- Networking & Security: TCP?IP, DNS, VPN, Firewalls, Network Access Control, App Security, WireShark
- Q&A Testing: Test Automation, Manual testing, Test Case Development, Technical Manuals, Regression testing, UAT
- Database Management & Security: MySQL, SQL Server, Database Access Control, Data Encryption, SQL, Backup & Recovery
- Web Security: Deployment, Secure Coding Practices, SQL Injection, CSP, JWT, Web Application Firewalls, OWASP Top 10