Samantha Chalker

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APPLICATION SECURITY ENGINEERING | PENETRATION TESTING | VULNERABILITY MANAGEMENT

PROFILE

Highly skilled and results-driven Application Security Engineer with **8+** years of experience serving in securing IT infrastructure through web and application penetration testing across high-impact environments, including IBM, Twitter, and NerdWallet. Proven track record in vulnerability management, secure SDLC implementation, security control implementation, and threat intelligence analysis. Impressive history of developing internal tools, improving security posture of organizations, and responding to complex incidents. Adept at mentoring engineers, leading security awareness training, and offering consultancy services.

Core Skills & Competencies

Application Security | Penetration Testing | Vulnerability Management | Threat Intelligence | Incident Response | Security Tooling Development | Network Traffic Analysis | Cloud Security Reviews | SDLC Practices | Cryptography Application | Bug Bounty Triage | Threat Hunting Operations | Secure Code Reviews | Security Awareness Training | Documentation

KEY VALUE OFFERINGS

- **Application Security Engineering**: Led **100%** completion of all web and mobile application penetration testing within **10** days by monitoring network traffic, conducting cloud security reviews, and assessing application logs.
- **Vulnerability Management**: Reduced fraudulent logins by **85%** by developing a solution for brute forcing that would learn from patterns logged to a database and employ reCAPTCHA.
- **Penetration Testing**: Designed and launched several internal tools at NCC Group that aided in penetrating testing and one public tool, WSSiP.
- **Security Training Awareness**: Developed internal resource hub for security application engineers that enabled easier training, learning, resource sharing, and exercises.

CAREER HISTORY & ACHIEVEMENTS

IBM X-Force Red | Seattle, WA | Jan 2022 – Apr 2024
Application Pentesting Consultant

Conducted vulnerability management, web and application penetration testing, security control implementation, and incident response. Delivered consultancy services on network monitoring, threat intelligence, and security assessment of infrastructure.

Key Highlights:

- **Led proactive defense of IT infrastructure and uncovered critical threats** by performing thorough penetration testing, applying cryptography, monitoring network logs, and conducting cloud security reviews.
- **Reduced vulnerabilities and security risks** by collaborating with clients to implement secure applications during development lifecycle of complex systems.
- **Improved security posture of applications** by conducting security awareness training for junior and senior employees.
- **Eased communication between clients and consultants during incident response** to ensure containment of threats, network security, and vulnerability management.
- **Prioritized preventive protection over reactive** by developing internal tooling to identify critical areas using localStorage, IndexedDB, Web Workers, WebSockets, and new features of HTML5.

NerdWallet | Remote | Sep 2020 – Nov 2021
Senior Application Security Engineer

Oversaw security testing efforts for applications, improved incident response capabilities, and performed reviews in various aspects of front-end security.

Key Highlights:

- **Developed an automated security testing framework** that resulted in reduction in fraudulent logs, unauthorized access, and network penetration.
- **Engineered architecture assessment platform** from application security perspective that eased monitoring of network traffic, application logs, and security tools for suspicious activity.
- **Reformed threat intelligence and bug reporting of the organization** by ensuring thorough analysis of threat intelligence data and compliance with security policies and procedures.
- **Supervised, trained, and mentored junior application security engineers** in developing and deploying security monitoring solutions to check for secrets committed into repositories via the open-source tool TruffleHog.

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Served as a Pen Tester, responsible for conducting penetration testing, driving code review on web and mobile applications, and delivering security consultancy services on organization's cyber defenses, threat mitigation, and incident response.

Key Highlights:

- **Implemented secure SDLC processes** that reduced vulnerabilities during the development lifecycle by collaborating with other organizations and advising on security issues.
- **Created vulnerability assessment reports detailing exposures** and spearheaded timely resolution of all bugs by responding to bug bounty reports and re-testing applications to ensure zero threats during operations.
- **Minimized threat impacts** by investigating and responding to security incidents, including containing threats and performing root cause analysis.

Wealthfront | Redwood City, CA | Jun 2018 – Apr 2019
Security Engineer/Threat Hunter

Managed security operations across software development lifecycle, including identifying and addressing potential vulnerabilities in applications and systems, implementing security controls, and responding to security incidents.

Key Highlights:

- **Drove development of robust applications** by leading threat hunting to identify security weaknesses, misconfigurations, and insecure code.
- **Safeguarded assets and protected the business against financial crimes** by establishing fraud detection points using incoming data flagged ahead of time from external organizations.
- **Prevented data loss resulting from security attacks** by creating end-to-end encrypted chat application that served as a backup internal communications platform while following FINRA regulations.
- **Facilitated identification and Documentation of critical issues** by conducting application security assessments and vulnerability scans on AWS configuration and tools to flag potential issues.

NCC Group | Redwood City, CA | Aug 2015 – May 2018
Security Consultant

Offered security consultancy services on web and mobile application penetration testing, vulnerability management, threat assessment and security control

Key Highlights:

- **Strengthened application security against attacks** by identifying, assessing, and prioritizing vulnerabilities within applications and systems.
- **Optimized system response and efficiency** by training employees on application testing involving binary protocols used by client-side JavaScript applications, such as those using WebSockets to eradicate threats.
- **Fostered a culture of security awareness** by leading sessions and delivering advice to consultants on innovation in cybersecurity field and ideas for research projects for security conferences.

EARLY WORK EXPERIENCE

Captioning Assistant| Hamilton Relay – Frostburg, MD | Sep 2014 – Jan 2015
Software Developer | Xyelot LLC – Bellevue, WA | Apr 2010 – Jul 2013

EDUCATION

Computer and Information Systems Security/Information Assurance | Frostburg State University | 2015

PROJECTS

TournamentStreamHelper (2023 - Present): Software written in Python and React to help tournament organizers automatically update scoreboards for competitive video game tournament livestreams.

WSSiP (WebSocket/Socket.IO Proxy) (Jul 2017): Presented at Black Hat Arsenal | NCC Group: A tool for viewing and manipulating WebSocket messages between a browser and web server, with an outward bridge for debugging and fuzzing all.

TECHNICAL SKILLS

Java | Python | Golang | JavaScript (Node.js, React / JSX, TypeScript) | PHP | Ruby | PowerShell | Bash | SQL (MySQL, PostgreSQL, SQLite)