AKSHAT AGARWAL

Cybersecurity Engineer · SQL DBA Developer · Penetration Tester · Quantum Cryptography Researcher

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PROFESSIONAL SUMMARY

CEH v13 AI-certified Cybersecurity Engineer and SQL DBA Developer with 2+ years of enterprise experience at Tata Consultancy Services (TCS) covering security operations, incident response, root cause analysis, log analysis, production support, and SLA-driven database administration. Hands-on penetration testing and vulnerability assessment expertise (OWASP Top 10, CVSS v3, VAPT reporting) gained at Panacea InfoSec, complemented by post-quantum cryptography research (NIST PQC, QKD, CRYSTALS-Kyber, Dilithium). Skilled in threat modelling, secure SDLC, network security, MITRE ATT&CK;, Cyber Kill Chain, alert triage, and Python/Perl/Bash automation. Proficient with Burp Suite, Metasploit, Nmap, Wireshark, Sqlmap, and OpenSSL across Kali Linux, Ubuntu, Docker, and Windows Server environments.

CORE COMPETENCIES

Offensive Security
Penetration Testing · VAPT · OWASP Top 10 · Threat Modelling · Secure SDLC · CVSS v3

Security Operations
Incident Response · Log Analysis · Alert Triage · RCA · SIEM Concepts · MITRE ATT&CK; · Cyber Kill Chain

Cryptography
Post-Quantum Cryptography · QKD · NIST PQC · PKI · TLS/SSL · OpenSSL · Cryptographic Risk

Database Security
Oracle · MySQL · SQL Security · DB Monitoring · Access Control · Query Optimisation · Perf. Tuning

AI/ML Security
ML-Based IDS · SVM · Ensemble Classifiers · Feature Selection · Anomaly Detection · Intrusion Detection

Automation & Scripting
Python · Perl · Bash · SQL · Log Parsing · Automated Alerting · Security Reporting

TECHNICAL SKILLS

Security Tools	Burp Suite, OWASP ZAP, Nmap, Metasploit, Sqlmap, Wireshark, OpenSSL
Programming	Python, Perl, SQL, Java, Bash, JavaScript
Platforms	Kali Linux, Ubuntu, Linux, Windows Server, Docker, Git
DB Administration	Oracle, MySQL, Query Optimisation, Indexing, Transaction Mgmt, Backup & Recovery
Frameworks	MITRE ATT&CK;, Cyber Kill Chain, OWASP Top 10, NIST PQC, ITIL Incident Mgmt
Cryptography	QKD, CRYSTALS-Kyber, CRYSTALS-Dilithium, PKI, TLS/SSL, Asymmetric Encryption

PROFESSIONAL EXPERIENCE

System Analyst / SQL DBA Developer

Tata Consultancy Services (TCS) · Xceed Program | Aug 2024 – Present · Nagpur, India

- Designed and optimised Oracle/MySQL SQL packages enabling centralised logging, real-time monitoring, and automated alerting for production database workflows, supporting security event visibility.
- Conducted structured root cause analysis (RCA) on production incidents; documented incident timelines and implemented preventive security controls to reduce recurrence, aligned with ITIL incident management.
- Developed Python and Perl automation scripts for log parsing, PI data validation, and automated operational reporting, reducing manual monitoring overhead and accelerating anomaly detection.
- Performed query optimisation, index tuning, transaction management, and production troubleshooting to maintain Oracle/MySQL reliability and enforce security baselines.
- Managed SLA-driven incident escalation in a 24/7 production environment; coordinated cross-functional resolution across application, infrastructure, and security teams.

R&D; Intern – Quantum Cryptography

AvinyaSq | May 2024 – Aug 2024

- Researched quantum key distribution (QKD) and NIST post-quantum cryptographic algorithms (CRYSTALS-Kyber, Dilithium); documented enterprise migration paths from classical asymmetric PKI to quantum-resistant standards.
- Assessed cryptographic risk landscape under quantum computing threat scenarios; contributed to research documentation on secure quantum communication protocols and enterprise cryptographic agility strategy.

Security Testing Intern
Panacea InfoSec | Jun 2022 – Jul 2022

- Conducted end-to-end web application penetration testing: passive reconnaissance, active scanning (Burp Suite, OWASP ZAP, Nmap), manual exploitation, and client VAPT report delivery.
- Identified and documented critical vulnerabilities (SQL Injection, XSS, CSRF, authentication bypass, path traversal); applied CVSS v3 severity scoring for risk prioritisation.
- Produced client-ready VAPT reports with executive summaries, technical findings, CVSS ratings, and prioritised remediation roadmaps aligned with OWASP Top 10.

PROJECTS

ML-Based Network Intrusion Detection System

- Built an IDS using SVM, Naïve Bayes, and ensemble classifiers with Chi-Squared, RFE, and Lasso feature selection. Improved attack classification accuracy and reduced false positives via k-fold cross-validation and model stacking. Detection logic aligned with MITRE ATT&CK; tactics (Reconnaissance, Lateral Movement, Exfiltration).

Secure Online Flight Booking System – Web App Security Hardening

- Developed and hardened a web application against SQL Injection, XSS, HTML Injection, and Path Traversal. Applied OWASP Top 10 best practices: input validation, output encoding, parameterised queries, secure session management. Used CVSS-based severity scoring to prioritise remediation sequencing.

AI Face Mask Detection – Computer Vision Security

- Implemented a real-time deep learning detection pipeline using OpenCV for compliance monitoring in live surveillance environments, focusing on secure input handling, model robustness, and anomaly detection in video streams.

Quantum Cryptography Research – Post-Quantum Security

- Analysed NIST PQC candidate algorithms and QKD protocols; assessed enterprise migration from classical asymmetric encryption to quantum-resistant alternatives, contributing to cryptographic agility strategy documentation.

CERTIFICATIONS

- CEH v13 AI – EC-Council (2026)
- Cisco Cybersecurity Essentials (2023)
- NPTEL Ethical Hacking (2023)
- Tata Cybersecurity Analyst Job Simulation – Forage (2024)
- TCS Xceed SQL DBA Training Program (2024)
- Advanced Software Engineering Virtual Experience – Forage (2023)

EDUCATION

B.Tech – Computer Science & Engineering (Information Security) · Vellore Institute of Technology (VIT) · 2020–2024

Relevant Coursework: Cybersecurity · Penetration Testing · Vulnerability Analysis · Cryptography · Network Security · Data Structures & Algorithms · OOP (Java) · Web Security