Muhammad Ayan

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ABOUT ME

Cyber Security student at FAST-NUCES who builds security tooling and understands the compliance process it feeds. Comfortable pulling data from vendor APIs into working dashboards in Python and SQL, and equally comfortable assessing vendors and mapping controls against ISO/IEC 27001 and PTA CTDISR. Backed by hands-on offensive and defensive tooling from coursework and CTFs.

EDUCATION

Bachelor of Science in Cyber Security, FAST-NUCES, Islamabad *2023 – 2027*

- Relevant Coursework: Network Security, Ethical Hacking, Cryptography, Information Security Management
- Certifications Earned During Program: ISO/IEC 27001:2022 Information SkillFront Security Associate, Ethical Hacker by CISCO
- Rooms: Network Services, OWASP Top 10, Passive Reconnaissance, Active Reconnaissance, SPLUNK: Exploring SPL, Linux PrivEsc, Intro to Offensive Security, Intro to Defensive Security

EXPERIENCE

Cyber Security Intern, JWPL (JazzWorld) *Jul 2026 – Aug 2026*

- Designed and built a security compliance KPI dashboard as the primary deliverable of the internship, consolidating data from the SIEM (LogRhythm), Qualys, EDR, and PAM into a single view of the organization's security posture.
- Integrated multiple vendor REST APIs in Python, normalizing heterogeneous responses into a common schema and persisting them in a SQLite database to support historical trend tracking and repeatable reporting.
- Delivered dashboard views covering asset criticality, vulnerability exposure, asset compliance status, and remediation progress, alongside supporting security statistics for management reporting.
- Modeled KPIs against defined thresholds so overdue remediation, tooling coverage gaps, and compliance drift across asset groups surfaced automatically, replacing manual spreadsheet collation with an on-demand posture view.
- Conducted vendor risk management assessments, including a SOC 2 gap analysis for a Jazz PMCL call-center VRM questionnaire and a gap analysis on a Bitsight VRM questionnaire.
- Built a supplier security questionnaire based on the ISMS Annexure with CTDISR-aligned compliance rows spanning all 14 regulatory chapters, and assessed a Biometric Verification System (BVS) vendor against ISO/IEC 30107-3 (PAD testing), FIDO2/WebAuthn, and ISO/IEC 24745.

Software Development Intern, TashiTech *Jun 2026*

- Contributed to BitMadWall, a decentralized offline-first communication app using BLE and LoRa for mesh messaging and supporting Wi-Fi-less blockchain transactions.
- Identified and fixed bugs across the Flutter/Dart frontend and Rust backend, including a critical dual-protocol drift where the Rust chat module (chat/src/lib.rs) was bypassed at runtime in favor of a diverging Dart implementation.
- Diagnosed a decryption fallthrough bug and a hash-chain integrity issue in the app's cryptographic layer, and resolved related Docker/Rust build and Flutter compilation issues.

PROJECTS

Security Compliance & KPI Dashboard (JWPL – JazzWorld)

- Built a full-stack compliance dashboard that unifies telemetry from four security stacks – SIEM, Qualys vulnerability management, EDR, and PAM – into one organizational security posture view.
- Wrote modular Python API clients per data source handling token-based authentication, pagination, and rate limits, with scheduled pulls normalizing vendor-specific payloads into a shared data model.
- Designed a SQLite schema for assets, vulnerabilities, compliance checks, and remediation records with point-in-time snapshots, enabling trend analysis rather than a single moment-in-time view.
- Implemented KPI widgets and visualizations for asset criticality tiers, vulnerability severity distribution, compliance coverage, and remediation progress, giving the security team a single source of truth for reporting.

Edge-Enabled Identity and Access Management (EIAM) for Secure IoT Systems

- Architected and developed an EIAM framework to overcome latency, security, and data freshness issues in traditional cloud-based IAM for IoT.
- Integrated attribute-based access control (ABAC) with freshness and trust metrics at the network edge for localized authentication and authorization.
- Implemented secure communication protocols using X25519 key exchange, HKDF for key derivation, and ChaCha20-Poly1305 for encryption.
- Utilized MQTT for efficient context synchronization between edge and cloud, enhancing real-time IoT security, availability, and audit capabilities.

Domain-Specific Web Search Engine

- Architected and developed a backend-driven domain-specific search engine using Express.js and a relational SQL database.
- Designed and implemented a normalized database schema to manage TLDs, domains, subdomains, URLs, and users with strong referential integrity.
- Built RESTful APIs for adding and managing domains, subdomains, and URLs, enabling structured indexing and retrieval of web resources.
- Implemented backlink counting, URL ranking, and keyword-based search, improving relevance and efficiency of search results across a domain.

IoT Vulnerability Scanner - Local Network Security Tool

- Developed a custom full-stack vulnerability scanner tailored for IoT environments, utilizing a Python backend and an interactive, dark-themed frontend dashboard (HTML/CSS/JS).
- Engineered a comprehensive backend scanning pipeline with modules for network discovery, port scanning, device fingerprinting, and weak credential detection mimicking Nmap functionality.
- Integrated real-time WebSocket communication to stream live scan progress, dynamic status updates, and security findings directly to the UI.
- Designed and implemented intuitive data visualizations for network topology, vulnerability distributions, and detailed device-specific security reports.

SKILLS & TECHNOLOGIES

Core Skills: Networking & Communication, Web & UI Development, Databases & Backend Systems, Programming & Software Development

Tools: Wireshark, Network Miner, Snort, Nmap, pfSense, Git, Autopsy, Metasploit, telnet, nslookup, Cisco Packet Tracer, Office

Languages & Frameworks: JavaScript, React, Python, SQL, Express, MongoDB, Splunk, SQLite, LaTeX

Certifications: ISO/IEC 27001:2022 Information SkillFront Security Associate, Ethical Hacker by CISCO

CTFs: Ignite Hackathon CTF 2024, C00k3d CTF, CTS CTF 2024, MCS CTF

OS: Ubuntu, Kali, Windows