Nihal Awasthi

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Education

Vellore Institute of Technology, India	Expected 2027
Integrated M.Tech - Computer Science Engineering with Specialization in Cyber Security	***Cumulative GPA: 8.14***

Technical Skills

Cybersecurity: Vulnerability Assessment, Penetration Testing (Burp Suite, Metasploit, Nmap), Network Security, Risk Analysis, NIST Framework

Programming & Scripting: Python, C, C++, Java, Bash, PowerShell

Application & Systems Security: Secure REST APIs, Authentication & Access Control, Linux System Hardening

Cloud & Tools: AWS EC2, Nginx, Git, GitHub Actions, Wireshark, PostgreSQL, MySQL

Experience

MyResQR.life — Aug 2024 – May 2025
Software Developer & Project Manager (Hybrid) — *Bangalore, India*
- Developed and deployed scalable backend services using Django on AWS EC2 (Ubuntu + Nginx), achieving 90% uptime and migrating 5,000+ legacy users to the new system.
- Led a team of 3 members, delegating tasks to streamline delivery cycles and reduce production bugs by 20%.

Outlier — Dec 2024 – Dec 2025
AI Data Annotator & Model Reviewer — *(Freelance, Remote)*
- Reviewed and fine-tuned 10+ AI/LLM projects across 5 domains, contributing over **60+ work hours** to model development.
- Delivered high-quality feedbacks on 200+ AI completions, supporting RLHF workflows and enhancing model alignment.

Projects

ZynqOS: Secure Web-Based Operating System (Ongoing) | *Systems Design, Cryptography, Security*   **[Live Platform]**
- Developing a **security-centric web-based operating system** integrating encryption, privacy protection, vulnerability assessment, and controlled execution environments.
- Serves as a unified integration platform for independently developed security tools under a secure runtime and interface.
- The following major projects have been integrated into ZynqOS as security features:
- **Phablet:** Cryptographic Hashing & Encryption System   [Live]
  Implemented a multi-layer cryptographic system (AES-256, RSA, hashing) achieving **8 ms encryption** and **10 ms decryption** for **10 MB data payloads** under benchmark testing.
- **AigesX:** Vulnerability Assessment Tool   [GitHub]
  Automated vulnerability scanner capable of detecting common web security issues (misconfigurations, weak inputs), supporting internal security assessments and risk analysis.
- **PhantomSurf:** Privacy-Focused Browser   [GitHub]
  Secure browser with optional **VPN and TOR routing**, enabling anonymized traffic flow and privacy-preserving network communication.
- **ShadeOS:** 64-bit Operating System Kernel   [GitHub]
  Low-level OS kernel in C/Rust providing **memory isolation, process scheduling, and secure execution primitives**, informing ZynqOS runtime design.

Achievements & Publications

- Ranked **#47 globally** in **Advent of Code 2024** (Top **0.005%** worldwide).
- Published **2 book chapters [Chapter 123 & 168]** in Springer on cryptography and LLM security (2026)   [Link]
- Published **1 IEEE conference paper** on encryption systems (ICDCC 2024)   [Link]
- Paper accepted at **Springer AIoT / ICIoTCT 2025** on hybrid threat vectors in language models.

Extracurricular Activities

- Led 3 teams of 15 members in the Cyber Warrior Club, organizing 8 cybersecurity workshops and hands-on sessions.
- Judge for two 36-hour national-level hackathons hosted by Eureka Club and Cyber Warrior Club.