

# Nihal Awasthi

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## Education

### Vellore Institute of Technology, India

Integrated M.Tech - Computer Science Engineering with Specialization in Cyber Security

Expected 2027

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, Rust, 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, PgAdmin

## 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  
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  
Automated vulnerability scanner capable of detecting common web security issues (misconfigurations, weak inputs), supporting internal security assessments and risk analysis.
- PhantomSurf:** Privacy-Focused Browser  
Secure browser with optional **VPN and TOR routing**, enabling anonymized traffic flow and privacy-preserving network communication.
- ShadeOS:** 64-bit Operating System Kernel  
Low-level OS kernel in C/Rust providing **memory isolation, process scheduling, and secure execution primitives**, informing ZynqOS runtime design.

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## 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.