

# Nihal Awasthi

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## Education

**Vellore Institute of Technology, Bhopal, India**

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

Expected 2027

**Cumulative GPA: 8.09**

## Experience

### Outlier

AI Data Annotator & Model Reviewer

Dec 2024 – Present

(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.

### MyResQR.life

Software Developer & Project Manager (Hybrid)

Aug 2024 – May 2025

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%.

## Projects

**Phablet: Hashing & Encryption Algorithm** | Python, Cryptography, AES-256, RSA, Security Engineering

[Try it here]

- Engineered a multi-layered encryption protocol integrating AES-256 and RSA, achieving 9 ms encryption and 11 ms decryption for 1 MB of data.
- Optimized cryptographic workflows to be 60% faster than industry benchmarks, enhancing secure data transmission efficiency.
- Implemented secure key exchange and hashing mechanisms to ensure end-to-end confidentiality and integrity.

**ShadeOS: 64-bit Kernel (C + Rust Hybrid)** | C, Rust, Assembly, Systems Programming, OS Development

[Ongoing]

- Developed a 64-bit kernel from scratch, integrating C and Rust to combine low-level control with memory safety.
- Implemented custom bootloader in Assembly, low-level memory management, and process handling routines.
- Completed a functional prototype demonstrating OS development expertise despite early-stage performance trade-offs compared to production kernels.

## Technical Skills

**Cybersecurity:** Penetration Testing (Burp Suite, Metasploit), Network Security, NIST Framework

**Languages:** Python, C, C++, Java, PowerShell, Bash

**Web Development:** Django, Flask, REST APIs, ReactJS, HTML/CSS/JavaScript

**Cloud, DevOps & Tools:** AWS EC2, GitHub Actions, PostgreSQL, MySQL, Wireshark, Nmap, Git, AI Tools

## Publications

### Journals

- "Phablet Hashing Algorithm," *Chapter 123*, ISBN: 978-3-031-87583-0, Springer, 2024
- "Data Poisoning in Large Language Models" *Chapter 168*, ISBN: 978-3-031-87583-0, Springer, 2024

### Conference Proceedings

- "Phablet Encryption Algorithm," *International Conference on Data, Computation and Communication*, IEEE 2024

## Achievements & Extracurricular Activities

- Project Manager, Operation Smile Foundation (Mar–Dec 2024): Engineered a responsive donation platform, boosting engagement 60%, donations 25%, and performance score to 98 with 40% faster load times .
- Ranked #47 globally out of 1M+ participants in Advent of Code 2024, placing in the Top 0.005% worldwide.
- Led 3 teams of 15 members in the Cyber Warrior Club, organizing 8 workshops to enhance cybersecurity skills.
- Judged two 36-hour hackathons hosted by Eureka Club and Cyber Warrior Club.