Nihal Awasthi

📞 +91 6350486317　✉ nihalawasthi498@gmail.com　in Linkedin　⌗ Github

Education

Vellore Institute of Technology, Bhopal, India　　　　　　　　　　Expected 2027
Integrated M.Tech - Computer Science Engineering with Specialization in Cyber Security　　*Cumulative GPA: 8.09*

Experience

Outlier　　　　　　　　　　　　　　　　　　　　　　　　Dec 2024 – Present
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.

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%.

Projects

ZynqOS: Web-Based Operating System | *JavaScript, Systems Design, Cryptography, WebOS*　　　[Live Platform]
- ZynqOS is an **accumulation of my major projects**, implemented as a **web-based operating system** with core OS utilities including **ZynqPad** (custom file manager + code editor), terminal, and a Wasmer application runtime. The projects integrated as native components in ZynqOS are :
- **Phablet**: Custom hashing and encryption algorithm combining **AES-256 and RSA**, enabling secure data handling and cryptographic operations within the OS environment.
- **Wednesday**: Personal desktop chat assistant enabling local automation and contextual user interaction.
- **PhantomSurf**: Privacy-focused browser with built-in, toggleable **VPN and TOR** routing for anonymous web access. Added as a native application in **WebOS**
- **AigesX**: Inbuilt vulnerability scanner designed for security assessment and vulnerability detection within the OS environment.
- Applied **system-level design principles** derived from building **ShadeOS (64-bit kernel in C/Rust)** to architect process isolation, modular services, and secure runtime boundaries in ZynqOS.

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
- "Hybrid Threat Vectors in Language Models," *AIoT - ICIoTCT 2025*, Meteor Springer

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.

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