MANNAT PAL

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EDUCATION

Vellore Institute of Technology   Bhopal, M.P.
Integrated M.Tech – Computer Science and Engineering,   Oct. 2022 - Present
Cumulative GPA: 8.89

EXPERIENCE

Cybersecurity Analyst Intern (Completed)   Nov 2025 - Dec 2025
Sequretek IT Solutions Pvt. Ltd.   Mumbai, India

- Developed a behavior-based malware analysis pipeline using honeypot telemetry and large language models,achieving 74% detection accuracy.
- Implemented automated pre-analysis modules to extract behavioral indicators, file hashes, and severity scores for malware classification.
- Generated structured malware analysis reports and IoCs using GPT-OSS and Mistral LLMs, and validated threat intelligence via VirusTotal with hash-based reputation analysis.

PROJECTS

Android Malware Detection Using Machine Learning (Project Link)

- Developed machine learning-based Android malware detection system achieving 92.86% accuracy, supporting threat triage and security risk assessment workflows.
- Performed static analysis on 429 Android APKs by extracting manifest-level features, including permissions, intents, and component metadata, using Python and Androguard.
- Designed an imbalance-aware malware triage pipeline to reduce false positives and prioritise high-risk applications for analyst-driven investigation.

Encryption & Decryption Algorithms (Project Link)

- Developed and fine-tuned over 10 cryptographic algorithms in Python, showcasing principles of secure communication, data confidentiality, and integrity verification, including RSA, Diffie-Hellman, AES, IDEA, HMAC, and various classical cipher methods.
- Improved cryptographic performance by 30% through efficient key generation strategies, modular algorithm design, and targeted code refactoring.
- Validated encryption, decryption, and data integrity workflows across all implementations, achieving 99% functional accuracy and reliable reversibility.

SKILLS

Security Tools: Wireshark, Nmap, Burp Suite, Metasploit, OWASP ZAP, SQLMap, Nikto, Androguard, APKTool, VirusTotal, Malware Static Analysis, Splunk, Snort
Machine Learning: Scikit-learn (Random Forest, XGBoost, Naive Bayes), Pandas, NumPy, Matplotlib
Programming & Databases: C++, Python, HTML, CSS, SQL **Core Security Concepts:** Threat Intelligence, Incident Response, Malware Analysis, Vulnerability Assessment, MITRE ATT&CK Framework
Computer Science Fundamentals: Object-Oriented Programming, Operating Systems, DBMS, Computer Networks

EXTRA-CURRICULAR ACTIVITIES

- **Class Representative:** Served as primary liaison between faculty and 60+ students, coordinating academic communications, resolving student concerns, and supporting smooth course administration.
- **Event Management Lead, Mozilla Firefox Club**: Organized 5+ technical events with 100+ participants, coordinating cross-team logistics.
- **Content and Editorial Lead, Cyber Warriors Club**: Drove cybersecurity awareness initiatives by curating technical content and coordinating knowledge-sharing sessions.