Tharunaditya Anuganti

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Technical Skills

Cybersecurity Tools: Wireshark, Metasploit, Burp Suite, Nessus, Nmap, OWASP ZAP
Detection & SOC: ELK Stack, Splunk, EDR, IDS/IPS, MITRE ATT&CK
Security Domains: Vulnerability Research, Penetration Testing, Malware Analysis, SOC, SIEM Tuning, Alert Optimization
Malware Analysis: Static and dynamic analysis, reverse engineering (Ghidra), x86 assembly, Windows malware internals (API, registry, networking), malware unpacking and de-obfuscation, shellcode analysis, IOC extraction
Programming & Systems: Python, C, C++, Bash
AI / Data Systems: Reinforcement Learning (PPO), LLM Pipelines, FAISS, Schema Validation
Cloud & DevOps: Microsoft Azure, Azure OpenAI Service, Docker, Kubernetes (Containerized Deployments)

Experience

Intel Corporation **Jun 2025 – Jun 2026**
Security Researcher (Graduate Technical Intern) *Bengaluru, India*

- Optimized the performance and cost efficiency of an AI-based threat modeling assistant by reducing redundant LLM inference calls from quadratic to linear scaling
- Designed and enforced structured Pydantic schemas to validate LLM outputs, improving correctness and reliability for downstream automation
- Assisted in BIOS penetration testing on Panther Lake firmware using Ghidra, identifying deprecated cryptographic algorithms and sensitive data
- Conducted security and compliance reviews of large-scale open-source systems (Kubernetes, LLVM, Zephyr, Containerd, CRI-O, Trustee)
- Enhanced Intel's SDL chatbot (SecBot) by migrating to Azure OpenAI GPT-4o and optimizing FAISS-based retrieval and ranking pipelines

Academic Projects & Publications

NeuroFuzz — AI-Augmented Hybrid Fuzzer for Energy-Efficient Vulnerability Discovery **2025**

- Designed and evaluated an AI-augmented hybrid fuzzer combining AFL++ with symbolic execution (angr, Z3)
- Introduced semantic vulnerability scoring to prioritize high-risk program paths during fuzzing
- Implemented a PPO-based reinforcement learning controller to dynamically balance fuzzing and symbolic execution
- Evaluated on DARPA Cyber Grand Challenge benchmarks, achieving 40% higher crash discovery with 26% lower power consumption

AI-Powered Intrusion Detection System for IoT **2024**

- Designed an AI-driven IDS framework for real-time anomaly detection and automated incident response
- Implemented adaptive risk scoring to dynamically adjust detection sensitivity
- Presented the research at the 11th IEEE International Symposium on Smart Electronic Systems, MNIT Jaipur

BugHunterX — Web Penetration Testing Toolkit **2023**

- Developed an automated penetration testing toolkit integrating Subfinder, Nmap, and OWASP ZAP
- Reduced manual vulnerability assessment effort by 40%

NexGen SIEM — Modern SOC Architecture **2023**

- Designed and simulated a scalable SIEM architecture using ELK Stack, Docker, and MITRE ATT&CK
- Improved simulated detection and response workflows, reducing incident response time by 25%

Research Interests

AI-assisted vulnerability discovery and program analysis; hybrid fuzzing and symbolic execution; reinforcement learning for adaptive security systems; large language models for secure software development; firmware and system security; scalable and energy-efficient security analysis; Advanced Malware Behaviour analysis.

Education

Amrita University **2024 – 2026**
M.Tech in Cybersecurity Systems and Networks *Kerala, India*
– GPA: 8.94/10 (Till 3rd Semester)

Vignana Bharathi Institute of Technology **2020 – 2024**
B.Tech in Computer Science and Engineering (Cybersecurity) *Hyderabad, India*
– GPA: 8.19/10 — Final-year project selected as Best Project

Relevant Coursework

- Network Security
- System Security
- Cryptography Applications
- Malware Analysis
- Reverse Engineering
- Cybercrime Investigation and Digital Forensics
- Machine Learning for Cybersecurity
- Security and Incident Response Management
- Ethical Hacking
- Cloud Security

Certifications

- 2025 Product Security Yellow Belt (Software Track) — Intel Corporation
- Google Cybersecurity Professional Certificate — Coursera & Google
- Certified Ethical Hacker — Cisco Networking Academy
- Certified Cybersecurity Analyst (C3SA) — Cyberwarfare Labs
- AWS Academy Cloud Foundations
- AWS Academy Machine Learning Foundations
- Career Essentials in Generative AI — Microsoft & LinkedIn

Leadership & Activities

ABHEDYA — Cybersecurity Forum, VBIT **Feb 2022 – May 2024**
Chairperson *Hyderabad, India*
– Led a 40-member team to organize cybersecurity workshops and awareness programs
– Trained over 400 students in ethical hacking and cybersecurity fundamentals

Chronos Hackathon — 2nd Place (50+ Teams)
Member, SHODH Research & Startup Initiative (VBIT)

Languages

- English (Fluent)
- Hindi (Intermediate)
- Telugu (Fluent)
- German (Beginner)