ADITYA TOMAR

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 Aditya Tomar | Aditya Tomar | Researches | brsrk94

Gwalior, Madhya Pradesh - 474020, India

EDUCATION

• **Indian Institute of Technology** *August 2025 – July 2028*
Bachelor of Science , Cybersecurity Patna, India
  ◦ GPA: 9.53

• **Vellore Institute of Technology** *May 2025*
Bachelors of Technology Vellore, India
  ◦ CPI: 8.4

PATENTS AND PUBLICATIONS   C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

[C.1]   Aditya Tomar, et al. (2024). **Clean Energy Forecasting Using SVM and Discrete Mathematics**. In *Proceedings of 3rd IEEE International Conference on Sustainable Energy and Future Electric Transportation (SEFET)*, pp. 1–6. IEEE. March 2024, India.

[S.1]   Aditya Tomar, et al. (2023). **Neural Methods for Eco-Conscious Waste Classification**. Manuscript submitted for publication in *Elsevier Journal of Cleaner Production*.

TECHNICAL SKILLS

• **Programming:** C++, Python, Golang, JavaScript, Assembly
• **Frameworks & Web:** Qt/QML, React, Astro, HTML5, CSS3
• **Security & Reverse Engineering:** Pwntools, Ghidra, Rizin, Burp Suite, BloodHound, Web Application Testing
• **Systems & Networking:** Linux, Windows, Bash, PowerShell, TCP/IP, DNS, DHCP, OSI Model, Active Directory
• **Databases:** MySQL, MariaDB, Supabase
• **Security Operations:** SIEM, EDR, IDS/IPS
• **Patent Research:** Prior Art Search, Patent Landscape Analysis, USPTO/EPO/WIPO Databases, IPC/CPC Classification, Technical Disclosure Writing
• **Version Control:** Git, GitHub, Git LFS

EXPERIENCE

• **Algabay [🌐]** *Feb 2025 – July 2025*
Reverse Engineer Intern Hyderabad, India
  ◦ Analyzed 150+ binaries and executables to uncover hidden functionality, packed code, and malicious behavior across Windows and Linux systems; documented technical disclosures of novel reverse-engineered algorithms for potential patent filing
  ◦ Performed static and dynamic analysis using tools like IDA Pro, Ghidra, and x64dbg to identify code flow, reverse proprietary algorithms, and detect vulnerabilities; produced structured technical reports aligned with patent-grade documentation standards
  ◦ Investigated and debugged low-level issues in software and drivers using disassemblers and debuggers, improving analysis accuracy by 35%
  ◦ Documented reverse-engineering findings and provided reports through Jira and Freshdesk, maintaining a 95%+ task resolution accuracy

• **Open Source Contribution@Owasp BLT[🌐]** *May 2025 – September 2025*
Reverse Engineer Remote
  ◦ Contributed to OWASP BLT (Bug Logging Tool); authored the new OWTF Cutter and Disassembly module, documenting novel implementation techniques suitable for intellectual property disclosure
  ◦ Developed automated system checklists for onboarding new members, increasing setup efficiency by 30%
  ◦ Implemented secure file-sharing and account management practices using Linux permissions and SSH, lowering access-related queries by 25%
  ◦ Conducted regular system health audits and provided support for software-related queries during virtual events

PROJECTS

- **Nox — Raycast-style Application Launcher** *Cross-platform productivity utility*
  Tools: Qt6, QML, C++, CMake GitHub
  - Built a keyboard-driven launcher in Qt6/QML with C++ backend enabling fast fuzzy search across apps, files, and custom commands
  - Designed modular plugin architecture (calculator, clipboard, web search) with system tray integration and global hotkeys on Linux/Windows
  - Optimized multithreaded indexing pipeline achieving sub-50ms search latency across 10,000+ indexed entries

- **Strings for Windows** *Powershell Tool*
  Tools: Win10, LinPeas, Ghidra, Binja GitHub
  - Built a Reverse Engineering tool to extract and classify printable strings from PE binaries, aiding in malware triage and prior art investigation for novel obfuscation techniques
  - Practiced malware analysis and documented unique behavioral patterns applicable to technical patent disclosures

- **Blackhole Simulated in Python** *Python and physics simulation*
  Tools: moderngl, pygame, physics GitHub
  - Used ModernGL for GPU-accelerated processing and Pygame for real-time rendering pipeline
  - Simulated gravitational lensing and photon geodesics around a Schwarzschild black hole using numerical integration of geodesic equations

CERTIFICATIONS

- **Cisco Certified Ethical Hacker** 2025
- **Cisco Junior IT Associate** 2025
- **Certified Network Security Practitioner (CNSP)** 2025
- **Certified Cybersecurity Educator Professional (CCEP)** 2025

ACHIEVEMENTS

- **1st Prize – Code4Change Hackathon** *June 2024*
  Code4Change, Organizing Institution [🌐]
  - Secured 1st position among 300+ participants; built a decentralized waste management platform integrating blockchain and ML for smart segregation.

- **IOQM Finalist (Indian Olympiad Qualifier in Mathematics)** *January 2023*
  HBCSE – TIFR [🌐]
  - Ranked among the top 500 students across India in mathematical aptitude and analytical reasoning.

- **International CTF Player** *November 2022*
  Reverse Engineering and Binary Exploitation (L3AK), Global Top 1 Always [🌐]
  - Top 7 Worldwide in international Capture the Flag competitions.

- **AIR 08 – Penthathon Cybersecurity Competition** *April 2024*
  Penthathon, National Cyber League [🌐]
  - Ranked All India Rank 8 among 2,000+ participants; demonstrated advanced skills in reverse engineering, cryptography, web exploits, and OSINT.

LEADERSHIP EXPERIENCE

- **Cybersecurity Senior Core — TECHLOOP** *Aug 2024 – May 2025*
  IEEE-VIT [🌐]
  - Delivered workshops on cybersecurity fundamentals to 10+ students during the TECHLOOP event.
  - Designed hands-on labs and guided students through real-world threat analysis scenarios.
  - Collaborated with the core committee to streamline the training structure and curriculum.

- **Team Leader — National Hackathon Circuit** *2023 – 2024*
  Multiple Hackathons
  - Led a team of developers and cybersecurity analysts to win 7 consecutive hackathons.
  - Coordinated team workflow under pressure and tight deadlines, ensuring timely submissions.
  - Delivered innovative solutions across cybersecurity, AI, and open-source automation domains.

ADDITIONAL INFORMATION

Languages: English (Fluent), Hindi (Fluent)

Interests: Patent Analysis, Prior Art Research, Setting Up Homelabs, Web Hacking, Technical Mentorship