

Gaurav Raj

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PROFILE

Offensive Security Researcher & Software Engineer with **8+ years of open-source experience (1600+ commits in 2025 alone)**. Specialized in **low-level systems programming (C/ASM/Rust)**, **Linux internals**, **kernel development**, and **red team operations**. Creator and maintainer of BerserkArch Linux, focused on secure, automated, and scalable offensive security environments. Strong crossover between kernel engineering, cloud infrastructure, and full-stack development.

TECHNICAL ARSENAL

Core Languages C, C++, Assembly, Rust, Golang, Python, Bash, Zig, JavaScript, TypeScript, Java.
Systems Engineering Linux Internals, Kernel Dev, Memory Management, Bootloaders, Device Drivers, Embedded/IoT.
Full-Stack Dev Frontend (React/Next.js/Astro.js), Mobile (Android/IOS), Desktop Apps, Backend, Automation, APIs.
Cloud & DevOps AWS (SES, EC2, S3), GCP, Terraform, Vagrant, Kubernetes, Docker, Github Actions, CI/CD, Linux.
AI & LLM Security: LLM Fine-tuning, Prompt Engineering, Model Evaluation, Data Analysis, LLM Red Teaming.
Red Team & Pentest Reverse Engineering, Network/Internal/Web Pentesting, AD Attacks, C2 (Cobalt Strike/Sliver).

SECURITY & ENGINEERING EXPERIENCE

BerserkArch Linux Distro Project <i>Lead Maintainer, Developer & Systems Architect</i>	Remote <i>2025 - Present</i>
<ul style="list-style-type: none">OS: Designed and maintain an Arch Linux-based distribution for red team operations and secure development.CI/CD: Built fully automated ISO CI/CD pipelines using GitHub Actions and Docker (build, sign, checksum, deploy)Containerization: Published official Docker images for portable offensive security labs and rapid development.Security Hardening: Implemented custom kernel patches and AppArmor profiles for system hardening.	

Cybercraft Labs Pvt Ltd <i>Founder & Principal Engineer (Security Consultancy)</i>	Patna, Bihar <i>Sept 2023 - Nov 2024</i>
<ul style="list-style-type: none">Agency Leadership: Founded and operated an independent security consultancy, managing client lifecycles from technical consultation to delivery of penetration testing and cloud security solutions.Cloud Architecture: Architected AWS/GCP hybrid infrastructures, hardened EC2, configured SES (DKIM/DMARC).Software Development: Developed full-stack web applications, desktop tools, and custom reconnaissance automation (Python/Go/Rust), optimizing client workflows and reducing manual testing time by 40%.	

KEY R&D PROJECTS

THBOS (Custom x86 Kernel) <i>Source Code</i>	<i>Systems Programming (C, Assembly & Zig)</i>
<ul style="list-style-type: none">Kernel Dev: Built a 64-bit kernel from scratch, including custom bootloader for Protected mode.Hardware Interaction: Directly manipulated CPU registers to use CPUID instruction set to fetch processor topology.	

CarePulse <i>Live App</i> <i>Source Code</i>	<i>Healthcare Platform (Next.js, TypeScript, Appwrite)</i>
<ul style="list-style-type: none">Dev: HIPAA-aligned patient management system with server actions, Zod validation, Twilio SMS workflows, and next.jsSystem Design: Built a scalable backend with admin panel with Server Actions for secure data handling.	

Chip8 Emulator <i>github.com/thehackersbrain/chip8</i>	<i>Systems Emulation (Rust)</i>
<ul style="list-style-type: none">Emulation Logic: A functional CHIP-8 emulator in Rust, with fetch-decode-execute cycle and stack management.Memory Safety: Leveraged Rust's borrow checker to ensure memory safety while handling raw bytecode execution.	

HiddenWave <i>github.com/thehackersbrain/hiddenwave</i>	<i>Steganography Tool (C++ & Python)</i>
<ul style="list-style-type: none">DSA: Implemented Least Significant Bit encoding algorithm in C++ to hide encrypted payloads inside WAV/MP3 audio.	

ACHIEVEMENTS & CERTIFICATIONS

- VulnHub**: Designed 2 vulnerable VMs (*Blogger, CorpVision*) with custom exploit chains (Webmin, Cronjob privesc).
- Advanced Security Labs**: Completed **HackTheBox Fortresses** (Jet) & **TryHackMe Networks** (Wreath, Holo), mastering pivoting, AD exploitation, and perimeter breaching.
- Global Rankings**: **Top 1% on TryHackMe** (CTF) | **HackerRank Gold Badge** (Problem Solving & Algorithms).
- Certifications**: Certified proficiency in **Computer Forensics**, **Malware Analysis**, and **Active Directory Security** (Udemy/Independent Coursework).

EDUCATION

B.Sc (Maths Hons) <i>Specialization:</i>	<i>Patliputra University, Patna</i> <i>Advanced Mathematics (ie. Calculus, Linear Algebra)</i>	2027 (ongoing) -
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