

Gaurav Raj

Security Researcher · Software Engineer · Open Source Architect
Gurugram, Delhi, India

Mobile: +917488930330
Email: gaurav@thehackersbrain.xyz
GitHub: github.com/thehackersbrain
Website: thehackersbrain.xyz
LinkedIn: @thehackersbrainn

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

Remote

Lead Maintainer, Developer & Systems Architect

2025 - Present

- 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

Patna, Bihar

Founder & Principal Engineer (Security Consultancy)

Sept 2023 – Nov 2024

- 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) | [Source Code](#)

Systems Programming (C, Assembly & Zig)

- 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 | [Live App](#) | [Source Code](#)

Healthcare Platform (Next.js, TypeScript, Appwrite)

- Dev:** HIPAA-aligned patient management system with server actions, Zod validation, Twilio SMS workflows, and next.js
- System Design:** Built a scalable backend with admin panel with Server Actions for secure data handling.

Chip8 Emulator | [github.com/thehackersbrain/chip8](#)

Systems Emulation (Rust)

- 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 | [github.com/thehackersbrain/hiddenwave](#)

Steganography Tool (C++ & Python)

- 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)
Specialization:

Patliputra University, Patna
Advanced Mathematics (ie. Calculus, Linear Algebra)

2027 (ongoing)

-