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Technical Portfolio & Engineering Evidence

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"A visual breakdown of key systems engineering, full-stack projects, and operational achievements."

1. Systems Programming: Custom x86 Kernel (THBOS)

Project Overview

Stack: C, Assembly (x86), Makefile, QEMU, GDB
Description: A 64-bit operating system kernel written from scratch. This project demonstrates deep understanding of **Protected Mode switching**, **Memory Management (Paging)**, and **Direct Hardware Interaction (CPUID)**.
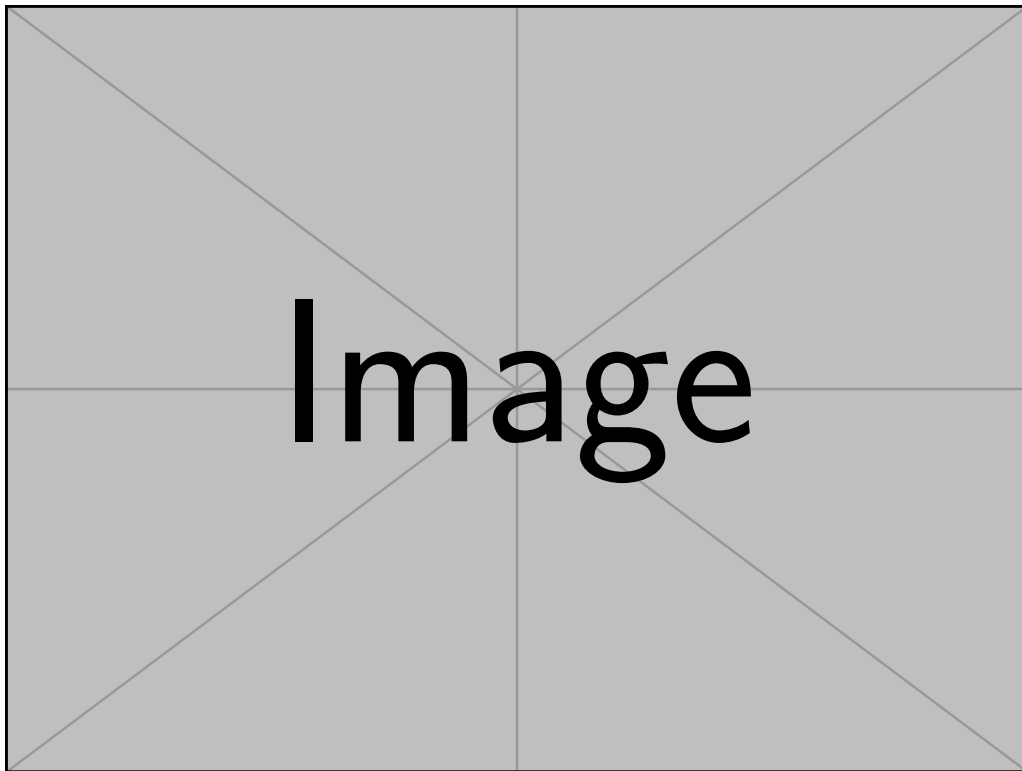

Figure 1: *THBOS Kernel booting in QEMU environment. The screenshot shows the custom bootloader handoff and the kernel successfully probing CPU hardware details.*

2. Infrastructure: BerserkArch Linux

Project Overview

Stack: Linux, Bash, GitHub Actions (CI/CD), Docker

Description: A custom security-focused Arch Linux distribution. I manage the entire release engineering lifecycle, including automated ISO builds, mirror synchronization (SourceForge/R2), and package repository maintenance.
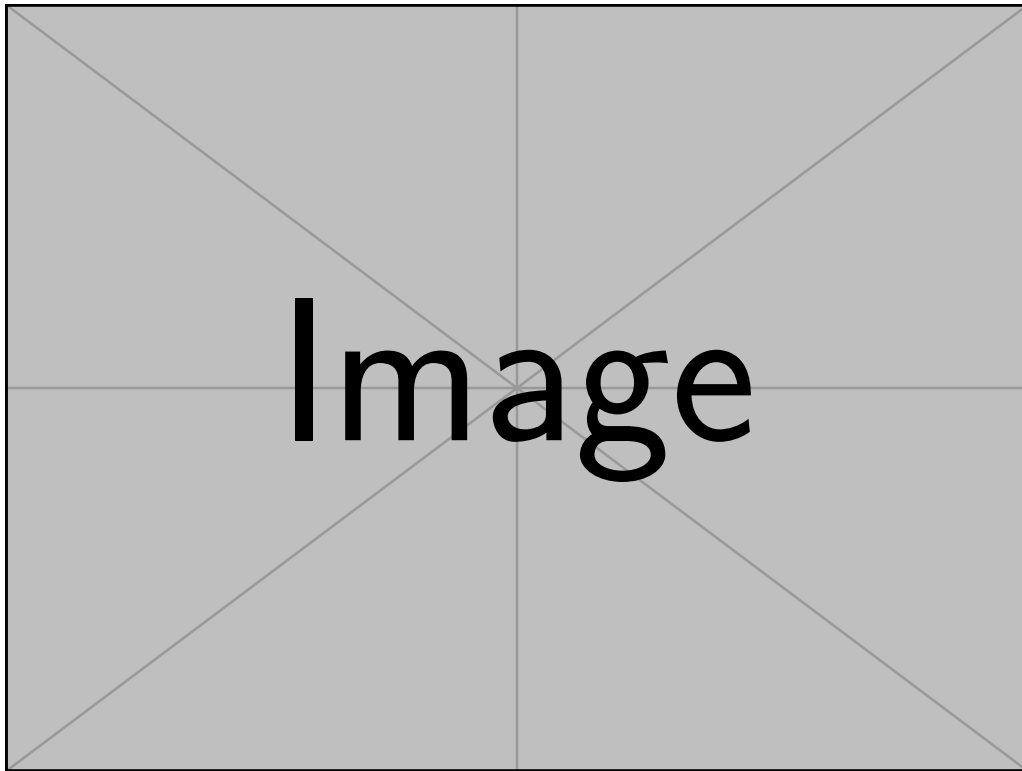

Figure 2: *BerserkArch Custom Desktop Environment (XFCE) pre-configured with security tools. Also highlights the automated CI/CD pipeline status for ISO releases.*

3. Full-Stack Engineering: CarePulse Platform

Project Overview

Stack: TypeScript, Next.js, Appwrite, Tailwind CSS, Twilio
Description: A production-ready patient management system. Features include complex HIPAA-compliant form validation (Zod), appointment scheduling, and automated SMS notifications via Twilio.
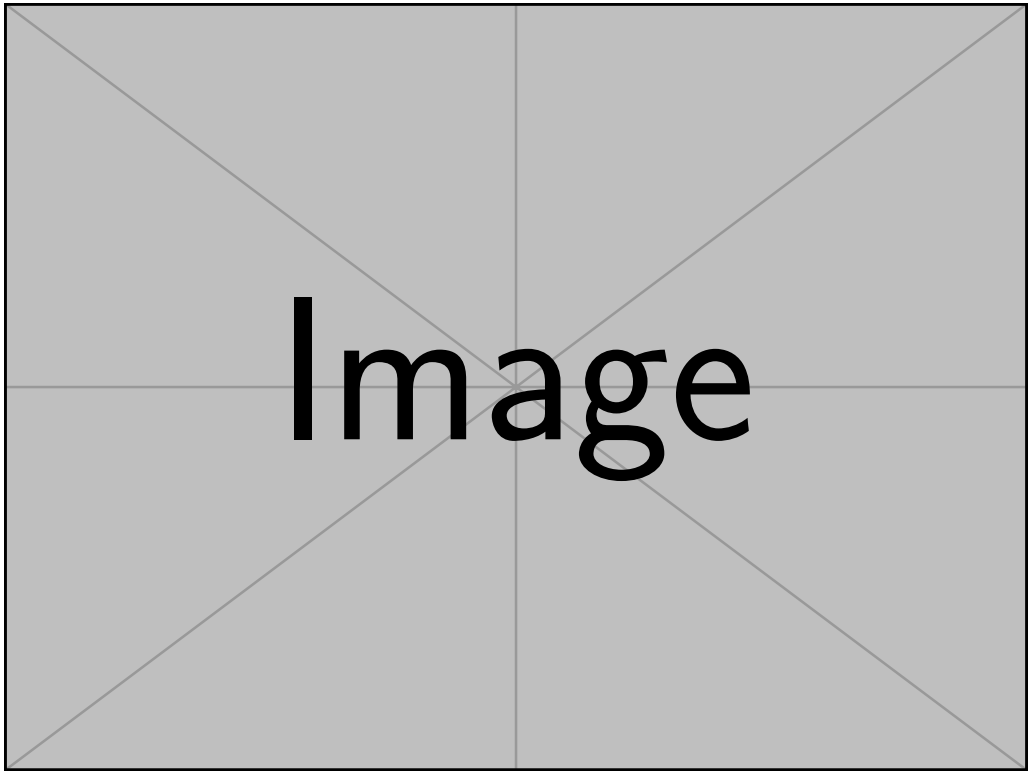

Figure 3: *The Patient Registration Dashboard. Demonstrates high-fidelity UI implementation and complex state management using Next.js Server Actions.*

4. Consistency: 8 Years of Open Source

Activity Log

Summary: Continuous contribution streak starting in 2018 (Age 12).
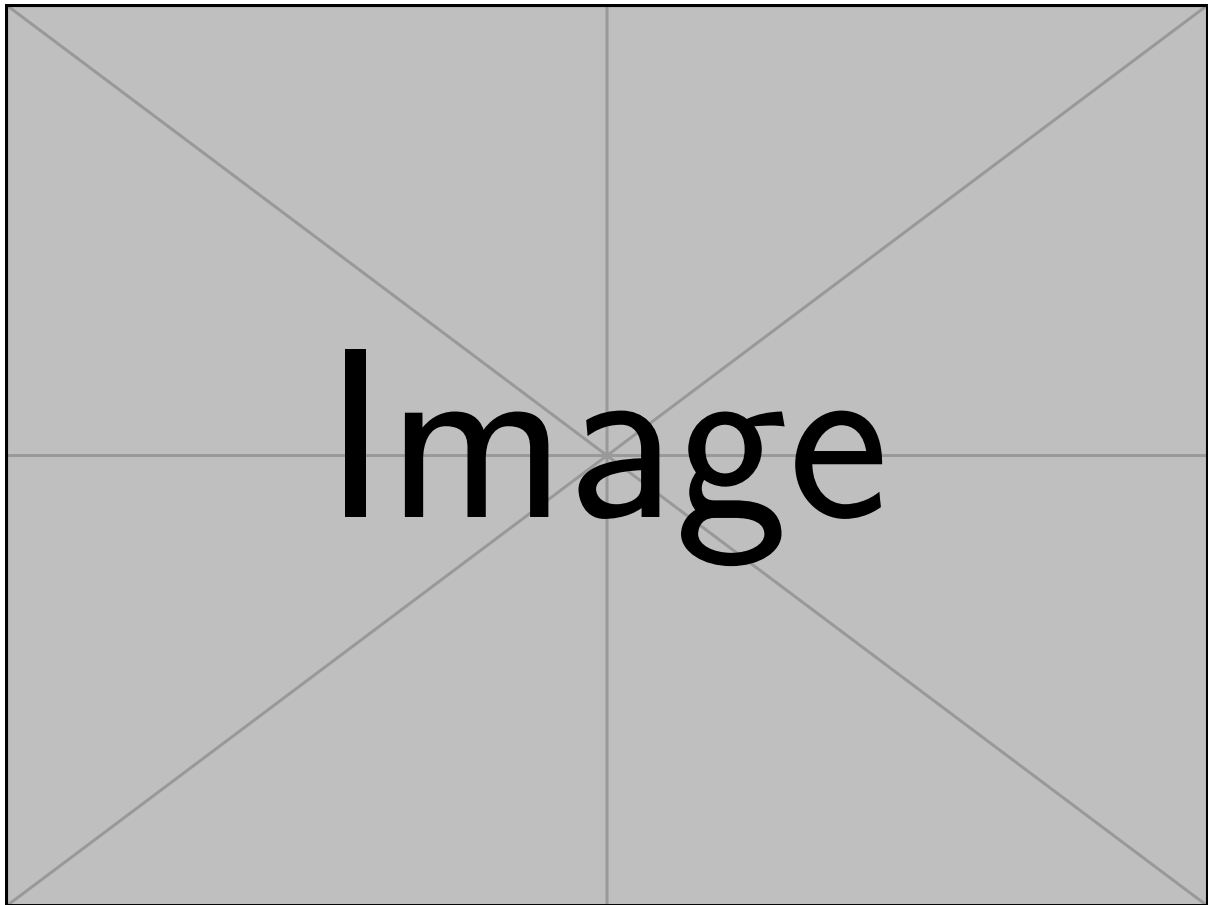**2025 Stats:** 1,600+ Commits across 60+ Repositories.

Figure 4: *GitHub Contribution Graph showing daily engineering activity. Proof of long-term dedication and discipline.*

5. Operational Competency: Advanced Labs & Certifications

HackTheBox & TryHackMe Achievements

Focus: Advanced Penetration Testing, Network Pivoting, Active Directory Exploitation.
Highlights: Completed "Jet Fortress" (Advanced External Pentest Lab) and ranked Top 1% globally on TryHackMe.

6. Vulnerability Architecture: VulnHub Author

Official VM Contributions

Machines: Blogger-1, CorpVision-1
Platform: VulnHub (Official)
Description: Architected two boot-to-root challenges involving custom exploit chains (Webmin, Cronjobs). These VMs have been downloaded thousands of times and used for training by security professionals globally.
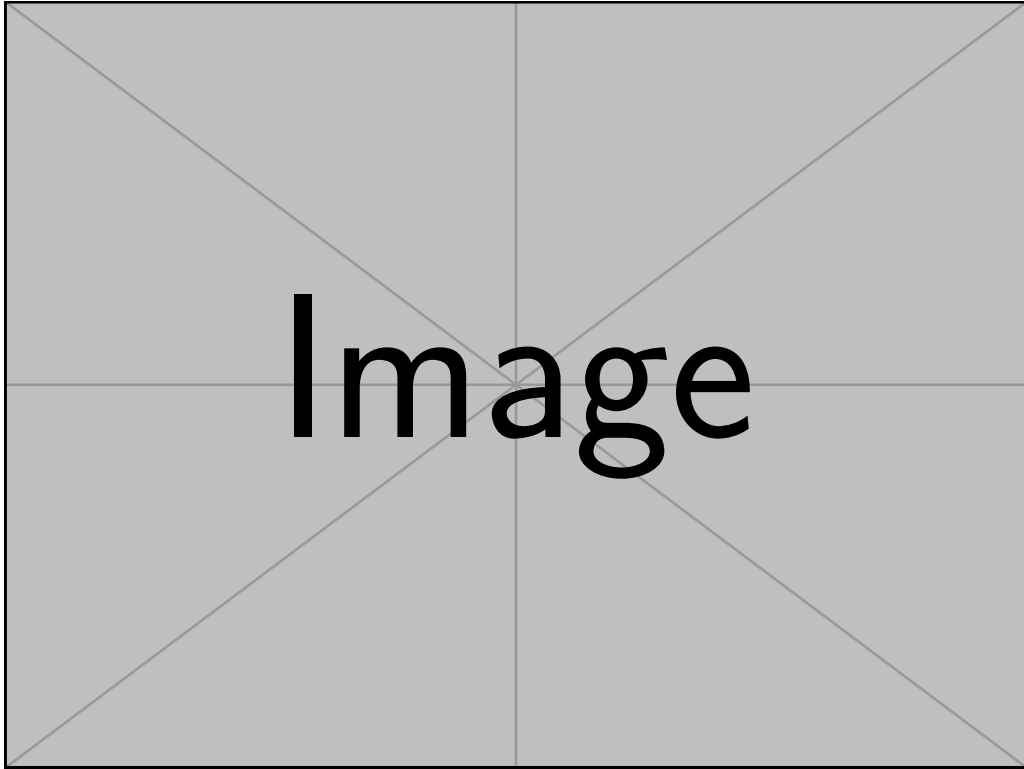
Figure 5: *Visual confirmation of HackTheBox "Jet Fortress" completion and Top 1% Global Rank on TryHackMe. Demonstrates proficiency in simulated real-world attack scenarios.*
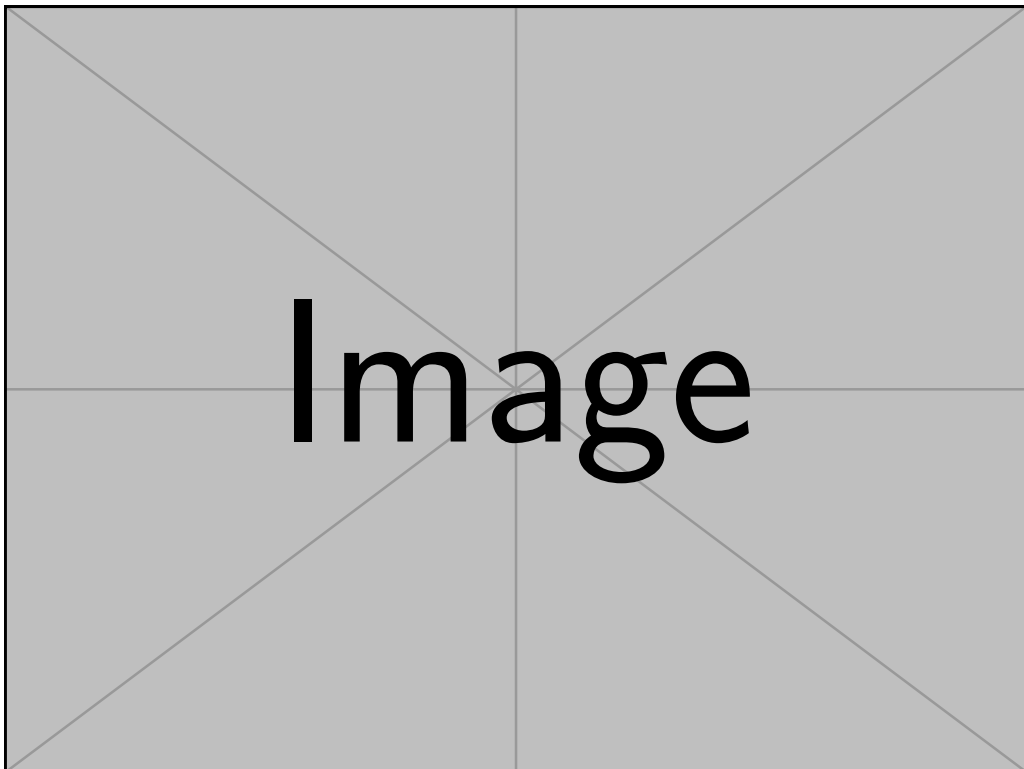

Figure 6: *Official VulnHub Author Profile showing authored machines "Blogger" and "CorpVision". Proof of capability in designing realistic vulnerable infrastructure.*