

Daniel Vergara Martínez

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SUMMARY

Systems and Computing Engineering student and infrastructure-focused backend engineer. I build and operate the platforms other developers depend on — distributed, event-driven backends in TypeScript, Go and Python; containerized, Terraform-provisioned deployments; and CI/CD pipelines that make releases boring.

EXPERIENCE

CodeLabs Community — Universidad de los Andes

Bogotá, Colombia

Lead Infrastructure Engineer, Backend Developer & DevOps Engineer

Feb 2025 – Present

- Own the infrastructure and backend of the community's internal platforms end to end — architecture, deployment and operation — and mentor incoming developers on Git workflows, Linux tooling and backend fundamentals.
- Architected and shipped a gamification platform for the 3 Waira computer labs of the Systems and Computing Engineering department, revitalizing student engagement with a projected 30+ daily active users.
- Designed and automated CI/CD and security workflows with GitHub Actions (build, test, dependency and secret scanning), making deployments and code integration reproducible across every team repository.
- Containerized environments with Docker and codified provisioning with Terraform, running delivery in Agile/Scrum sprints with branch-protection and code-review standards that cut onboarding friction.

HACKATHONS

IBM Bob Hackathon

May 2026

Backend Developer — “Repo Twin” (Outstanding Participation Certificate)

- Built a repository digital twin that simulates codebase changes before implementation, generating context-aware Shadow PRs and sharply reducing deployment errors in the evaluated scenarios.
- Architected the analysis pipeline in FastAPI, Python 3.11 and Pydantic, using Tree-sitter for AST parsing and NetworkX to map repository-wide impact graphs.
- Integrated IBM watsonx.ai with a multi-agent architecture to assess deployment risk, regressions and testing needs, orchestrating asynchronous job state in Redis for heavy evaluation workloads.

PROJECTS

FlagForge — Open-source feature flag platform

- Engineered a microservices feature-flag platform: a NestJS + Prisma/PostgreSQL management API with role-based access control (OWNER/ADMIN/EDITOR/VIEWER) and automatic audit logging, paired with a Go + Fiber evaluator backed by Redis sustaining sub-50 ms hot-path evaluations, stateless and horizontally scalable.
- Implemented real-time configuration streaming over Server-Sent Events and NATS pub/sub — flag edits invalidate the Redis cache and push instant updates to the TypeScript SDK and React bindings (local LRU cache, polling fallback).
- Built a Next.js 14 management dashboard with NextAuth.js authentication for flag CRUD, search and audit history, served behind a TLS-terminated NGINX reverse proxy on a Docker Compose stack, plus a production-ready Helm chart (HPA, NetworkPolicies, Ingress) for Kubernetes deployment.
- Instrumented the platform end to end with Prometheus, Grafana and OpenTelemetry, and automated linting, testing and builds with GitHub Actions and Dependabot.

PDF Book Reader — Open-source web & PWA reader (reader.dvergaram.is-local.org)

- Built a React 18 and Vite reader that renders documents through PDF.js into a double-page, page-flip book view with thumbnail navigation, zoom/fit modes and saved reading progress.
- Added multi-source ingestion — local files, public URLs and Google Drive links — behind an Express proxy hardened with rate limiting, trust-proxy configuration and strict CORS handling.
- Packaged the app as an installable PWA and a Docker + Nginx image with docker-compose for one-command self-hosting.

ARTIFICIAL INTELLIGENCE

- Designed and shipped a multi-agent LLM pipeline (IBM watsonx.ai) at the IBM Bob Hackathon that orchestrates specialized agents to assess deployment risk, regressions and testing needs from static code analysis (Tree-sitter ASTs, NetworkX impact graphs), coordinating asynchronous job state in Redis.
- Use LLM-assisted engineering daily — Claude Code and GitHub Copilot — for spec-driven development, automated refactors, code review and infrastructure scripting (Terraform, CI/CD, Discord bot backends).
- Working knowledge of agent orchestration and tool-use patterns (multi-agent coordination, the Model Context Protocol for tool/context integration), retrieval-augmented generation and embeddings for grounding LLM outputs, and prompt engineering for reliable, structured responses.
- Evaluate AI-assisted workflows for production readiness — latency/cost trade-offs, guardrails and evaluation, and where a deterministic code path should replace an LLM call.

TECHNICAL SKILLS

- **Languages:** TypeScript, JavaScript, Java, Go, Python, C++, Bash, SQL, HTML5, CSS3
- **Backend & Frameworks:** Node.js (3+ years of hands-on development experience), NestJS, Express, Spring Boot, FastAPI, Pydantic, React, Next.js, Vite, Tailwind CSS
- **Databases & Data:** PostgreSQL, MongoDB, Oracle DB, Redis, SQL, relational & NoSQL modeling, indexing, data structures & algorithms.
- **Infrastructure & DevOps:** Linux, Docker, Terraform (IaC), Nginx, Git, GitHub Actions, CI/CD, Prometheus, Grafana, cloud networking (VPC, DNS, load balancing, TLS), security practices (least privilege, secrets management, dependency scanning)
- **Architecture & Practices:** Distributed systems, microservices, event-driven design (NATS, SSE), REST APIs, observability, Agile / Scrum
- **Languages (spoken):** Spanish (Native), English (Advanced — Full Professional Proficiency)

EDUCATION

Universidad de los Andes	Bogotá, Colombia
<i>B.Sc. in Systems and Computing Engineering</i>	<i>Expected 2029</i>
• Relevant coursework: Software Architecture and Design, Computing Technology and Infrastructure, Data Structures and Algorithms, Databases, Web Technologies Programming, Cybersecurity.	