

# RICARDO ALTAMIRANO MARQUEZ

AI Engineer | Agentic Systems & Full-Stack Infrastructure

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## SUMMARY

AI Engineer and Full-Stack Engineer building production AI-native systems for domain-heavy operational workflows. Experienced in agent harness engineering, forward-deployed AI solution design, context engineering, evals, RAG, tool/API execution, structured outputs, multimodal and voice agent workflows, and cloud-deployed applications using Python, FastAPI, React, SQL, Docker, Kubernetes, AWS, GCP and Azure.

## SKILLS

**Programming & Web:** Python, TypeScript, JavaScript, Go, SQL, FastAPI, React, Next.js, REST APIs, WebSockets

**AI Systems:** Agent harnesses, context engineering, prompt/system design, evals, RAG & RAG evaluation, guardrails, ingestion pipelines, chunking, embeddings, hybrid & vector search, reranking, tool/API execution, MCP, multi-agent orchestration, structured outputs, prompt caching & cost optimization, multimodal analysis, Claude Skills, LangChain, LangGraph, voice agents (STT/TTS pipelines), spec-driven development

**Cloud & Infra:** PostgreSQL, MongoDB, Redis, Docker, Kubernetes, AWS, Azure, GCP, Terraform, CI/CD, GitHub Actions

**Platforms & Integrations:** Amazon Bedrock, OpenSearch vector search, AI SDK (ToolLoopAgent), voice platforms (STT/TTS), agent observability and tracing (OpenTelemetry GenAI), sandboxed code execution (E2B/Firecracker), permissioned tool use, Microsoft Copilot Studio, Vertex AI, Gemini Enterprise, API integrations

## EXPERIENCE

### Hydrous Group | AI Engineer

Jan 2025 - Present | hydrousmgmt.com

- Built AI-native systems for water and waste operations in production, connecting domain workflows with retrieval, controlled tool execution, and structured outputs.
- Designed agent harnesses coordinating specialized agents for regulatory analysis, technical reasoning, document generation, and controlled tool/API execution.
- Built evaluation pipelines for agent workflows using regression datasets, trace-level review, structured-output validation, and CI quality gates for prompt and model changes.
- Built a company-wide knowledge layer packaging team expertise as model-invoked Claude Skills, distributed via an internal marketplace with per-team governance and usage analytics.
- Developed multimodal AI and proposal-generation workflows combining documents, images, charts, and engineering assets into client-ready technical proposals.
- Integrated voice agents, including STT/TTS pipelines, with agentic backends and business APIs for operational workflows.
- Consulted for startups and clients to define, audit, and implement AI solutions across cloud AI platforms (Amazon Bedrock, Vertex AI, Microsoft Copilot Studio, Gemini Enterprise), translating business problems into production-ready architectures.

### DVAWEB | Software Engineer

Nov 2023 - Jan 2025

- Built and shipped full-stack product features for an intelligent parking platform across frontend, backend services, APIs, databases, and production rollout.
- Developed internal AI tools, including CRM-focused knowledge retrieval and natural-language-to-SQL workflows for non-technical teams.
- Built an enterprise knowledge platform over company documentation and prior projects, integrating proposal and CRM workflows in real time and reducing proposal turnaround time by 78%.
- Contributed to product architecture, debugging, API integrations, performance improvements, and maintainable feature delivery in a production environment.

## SELECTED PROJECTS

**Chamai** — github.com/ricardoalt1515/chamai

White-label AI agent workspace on Amazon Bedrock (AI SDK): per-tenant agent routing, prompt-cache-aware system prompts, per-run cost estimation, and a CI-gated eval suite (deterministic replay + LLM-as-judge).

**SecondStream** — github.com/ricardoalt1515/Second-Stream

Vertical operating core for regulated industrial streams: canonical data, workflow state, and the audit trail AI agents operate on — humans approve canonical truth.

## EDUCATION

**Universidad Autónoma de Occidente** | B.S. in Software Engineering