

Alan Salazar

AI Engineer

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SUMMARY

AI Engineer with 2+ years of experience designing and deploying LLM-powered automation systems for industrial workflows. Builds microservice architectures integrating multi-agent AI, RAG pipelines, and validation engines for ISO 17025 calibration processes. Pursuing B.Sc. in Intelligent Systems Engineering with a 90% academic scholarship and Dean's List distinction.

TECHNICAL SKILLS

AI / LLMs	LLM orchestration, RAG, function calling, multi-agent systems, prompt engineering
Languages	Python, TypeScript/JavaScript, SQL, C++
Backend	FastAPI, Node.js/Express, REST APIs, microservices, async/SSE, Pydantic
Frontend	Next.js, React, Tailwind CSS, shadcn/ui
Data	PostgreSQL (Supabase), MongoDB, Pandas, NumPy
Cloud / DevOps	Docker, Google Cloud (Run, Scheduler, Tasks), Vercel, Git/GitHub, CI/CD

EXPERIENCE

AI Engineer

Dec 2023 – Present

Phoenix Calibration | Remote – Dominican Republic

- Architected microservices platform for automated validation of calibration certificates under ISO/IEC 17025, reducing manual review from days to minutes of automated processing.
- Designed multi-agent LLM system with function calling and schema-validated contracts (JSON Schema, Pydantic) for CMC conformity assessment and tolerance verification against accreditation scopes.
- Built end-to-end quotation module (Next.js + FastAPI) with AI-enhanced technical proposals integrated into ERP (Odoo), cutting quote preparation time by 85%.
- Implemented tiered RAG pipeline with GenAI agents that extract equipment specifications from web sources and PDFs, enabling real-time validation and automatic database enrichment.
- Deployed containerized services on Google Cloud Run with Cloud Scheduler batch processing, structured logging, and full production observability.

EDUCATION

B.Sc. Intelligent Systems Engineering

Sep 2023 – Jun 2027

Universidad Intercontinental de la Empresa (UIE) | A Coruña, Spain

- 90% Academic Excellence Scholarship** (GPA > 8/10) | **Ángela Ruiz Robles Award** (Xunta de Galicia) | **Dean's List** (Top 10%)
- Key coursework: Machine Learning, NLP, Computer Vision, Autonomous Robotics, Big Data, Software Architecture

CERTIFICATIONS

- Machine Learning** – Upwork Skill Certification Aug 2024
- Google Cybersecurity Professional Certificate** – Coursera Aug 2024
- Power BI** – IBM SkillsBuild (60 hours) Sep 2023
- Data Scientist Career Path** – Coderhouse Aug 2023

LANGUAGES

Spanish (Native) English (IELTS 5.5 – Intermediate)

PHOENIX CALIBRATION – PROJECT DETAIL

In December 2023, I joined Phoenix Calibration as a freelancer to develop an AI-based chatbot prototype for calibration certificate queries. After demonstrating feasibility, I was brought on as AI Engineer, collaborating closely with calibration and computing engineers.

My focus has been identifying bottlenecks in deterministic business workflows that previously relied on human judgment. I designed modular architectures integrating multiple LLMs to bridge the gap between semantic context and rigid system logic, automating complex extraction and validation processes that transformed days of manual work into minutes of automated processing — drastically reducing operational load while maintaining data integrity and full traceability in production.

Quality Control Automation (ISO/IEC 17025:2017)

- **Microservice Architecture:** Designed a segmented system for calibration certificate validation, coordinated by a central orchestrator (Next.js + Express). Implemented fan-out patterns, concurrency control, and retries via REST, ensuring result consolidation and persistence in Supabase.
- **CMC Validation (Uncertainty):** Developed automated workflow to evaluate technical conformity against accreditation scopes. Integrated PINT for physical unit normalization and dynamic CMC calculations (fixed + variable components), orchestrating logical analysis with LLMs (function calling + Pydantic).
- **Tolerance Validation:** Automated conformity assessment by evaluating tolerances applied by calibration technicians against a specification matrix (procedure, client, manufacturer) across defined tiers. For equipment lacking prior data, implemented tiered RAG with GenAI agents extracting specifications from the web or PDFs, enabling real-time validation and automatic database feedback.
- **Rules Engine:** Implemented segmented validation engine (client, equipment, procedure). Optimized performance with ThreadPoolExecutor for parallel evaluations and independent OpenAI model calls, mitigating hallucinations and ensuring consistency.
- **DevOps & Batch Execution:** Deployed microservices on Google Cloud Run. Configured Cloud Scheduler and Cloud Run Jobs for automated batch processing, ensuring scheduled execution, scalability, and complete system observability in production.

AI-Powered Quotation Module

- **Design & Architecture:** Developed an end-to-end quotation module with API-first approach and layered architecture, ensuring strict separation of concerns between UI, API, and services.
- **Frontend:** Built interactive dashboards with motion primitives and shadcn components using Next.js 15 and React 19.
- **Backend & Performance:** Implemented robust API with FastAPI, optimizing long-running flows through asynchronous processing and data streaming (SSE).
- **AI & ERP Integration:** Automated business flows and integrated language models (OpenAI/Gemini) via function calling to enrich technical proposals, connecting the system directly with Odoo ERP.
- **Reliability & Scalability:** Improved system resilience with strict validations and caching strategies. Orchestrated decoupled deployment with frontend on Vercel and backend on Google Cloud Run.

ACADEMIC ACHIEVEMENTS

- **Academic Excellence Scholarship – UIE (2023–Present):** Granted at 90% of tuition fees after achieving a GPA above 8/10 in the first year. Requires semester-by-semester renewal with academic performance and active university participation.
- **Ángela Ruiz Robles Award for Academic Excellence:** Recognition from the Galician university system (Xunta de Galicia) for achieving one of the top academic records in the 2023/2024 academic year.
- **Dean's List:** Distinction for students whose GPA ranks in the top 10% of all grades in the program.