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Resumen

Software Engineer focused on backend development and applied Artificial Intelligence. Specialized in designing and implementing RAG (Retrieval-Augmented Generation) architectures, Large Language Model (LLM) orchestration using LangChain, vector databases (FAISS), and on-device AI (Gemini Nano). Solid experience building efficient APIs with Python (FastAPI), C# (.NET), and NestJS, as well as training classical Machine Learning models (Scikit-Learn). Expert in integrating intelligent data pipelines with cloud infrastructures.

Habilidades Técnicas

- **Artificial Intelligence:** RAG, Agentic Workflows, LangChain, Gemini API, OpenAI API, Vector DBs (FAISS)
- **Backend & APIs:** Python (FastAPI, Flask, Uvicorn), C# (.NET), TypeScript (NestJS, Node.js), Java (Spring Boot), RESTful APIs, WebSockets.
- **Data & Pipelines:** Pandas, NumPy, OpenCV, SQL, Jupyter Notebooks, ETL Pipelines.
- **Cloud & DevOps:** Azure, AWS, Docker, GitHub Actions (CI/CD), Grafana, Git.
- **Databases:** PostgreSQL, PostGIS, Vector DBs, SQLite, MongoDB.
- **Languages:** Spanish (Native), English (B2).

Work Experience

SimiAI

Remote

Software Engineer | Backend & CAD Automation

May 2026 – Present

- **AI-Processed Data Ingestion:** Designed and developed the backend integration bridge to parse and structure complex metadata generated by AI (photogrammetry, GPS, NLP) into standardized JSON payloads.
- **Automated Spatial Processing:** Programmed logic in C# .NET to ingest field metadata and programmatically insert physical objects (poles, conduits) at precise georeferenced coordinates and orientation parameters on CAD canvas layers.
- **Agent Architecture Design (PoC):** Designed and led the proof of concept for a Python-based agent engine (FastAPI) with tool orchestration logic, defining skill-based automation workflows and data flow for intelligent design automation.
- **Tech Stack:** C# .NET, Python (FastAPI), AutoCAD API, AWS (S3 & SDK for .NET), Azure, Docker, PostgreSQL.

CO - Organization

Remoto

Jr. Software Engineer | Cloud & DevOps (CI/CD)

Nov 2025 – May 2026

- **Inference Infrastructure:** Managed and instrumented backend deployment and monitoring across Azure and GCP environments, ensuring uptime and observability with Grafana.
- **Tech Stack:** Azure, AWS, GCP, Docker, Grafana, GitHub Actions, Terraform.

Jr. Software Engineer | FullStack Developer

Apr 2025 – Nov 2025

- **Business Backend:** Developed robust and modular backend microservices with Java and Spring Boot for transactional data flows.
- **Tech Stack:** Java, Spring Boot, React, PostgreSQL, Docker, Git.

Gerencia Regional de Salud Arequipa (GERSA)

Arequipa, Peru

Backend Engineer & DevOps (Contractor)

Jul 2025 – Nov 2025

- **Algorithmic Optimization for Clinical Inference:** Developed an algorithmic calibration engine for hemoglobin metrics using anthropometric data models, optimizing the clinical inference pipeline and improving diagnostic accuracy.
- **Tech Stack:** NestJS, TypeScript, Next.js, PostgreSQL, Docker.

AI & Engineering Projects

AI Partner Catalyst: Accelerate Innovation – Google

Arequipa, Peru

Lead AI & Cloud Engineer | [Repo](#) | [Live Demo](#)

Ene 2026

- **Advanced RAG Architecture:** Architected and implemented a RAG solution for semantic search on Peruvian legislation, utilizing dynamic context injection to mitigate model hallucinations.
- **Vector Database:** Optimized indexing and semantic retrieval of extensive legal PDFs using FAISS and vector embeddings.
- **Serverless Deployment:** Deployed the FastAPI backend on Google Cloud Run using multi-stage Docker optimizations to achieve low latency.
- **Tech Stack:** Python (FastAPI), LangChain, FAISS (Vector DB), Gemini API, OpenAI API, Google Cloud Run, Docker.

Google Chrome Built-in AI Challenge 2025– Google

Arequipa, Peru

AI Engineer | [Repo](#) | [Live Demo](#)

Nov 2025

- **On-Device AI Integration (Local-First):** Integrated Gemini Nano inside Google Chrome Canary to enable 100% offline, privacy-first AI processing directly in the browser.
- **Study Material Generation:** Implemented automatic flashcard and summarization generators from PDFs using FastAPI and LangChain in the backend, and Gemini Nano prompt API on the client.
- **Tech Stack:** Next.js 14, Tailwind CSS, Python (FastAPI), Gemini API (Cloud), Gemini Nano (Local), LangChain, PyPDF2.

NASA Space Apps Challenge 2025 – NASA

Arequipa, Peru

AI Engineer | [Repo](#) | [Live Demo](#)

Oct 2025

- **Clustering & AI Agents:** Developed a scientific knowledge engine utilizing clustering algorithms (HDBSCAN, K-Means) and an AI agent to extract research evidence, summarize articles, and construct an interactive knowledge map.
- **Stack:** Python (FastAPI), Jupyter Notebook, pandas, spacy, transformers, SciBERT, hdbscan, scikit-learn, keybert, TF-IDF, Vercel

Universidad Nacional de San Agustín (UNSA)

Arequipa, Peru

Machine Learning & Full Stack Developer (Research Project)

Jun 2025 - Dec 2025

- **Machine Learning Modeling:** Led the development and training of ML models (Python, Scikit-Learn) for crop classification and phenological stage detection using satellite imagery, achieving +75% accuracy.
- **Pipeline Automation:** Designed and implemented data pipelines with Python and Pandas for computer vision (OpenCV) preprocessing and real-time analysis, reducing manual analysis times by 80%.
- **Model Deployment:** Containerized and deployed AI inference services using Docker on Google Cloud Run.
- **Stack:** Python, FastAPI, Pandas, OpenCV, Scikit-Learn, Google Cloud Run, Google Earth Engine, Docker.

Education

National University of San Agustín

Bachelor's Degree in Systems Engineering

Graduation expected 2027