

Joseph Rodriguez

Software Engineer

Lima, Peru | (US / EU / LATAM time zones)

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SUMMARY

Software engineer with 1+ year shipping production LLM features RAG pipelines, AWS Bedrock and OpenAI integrations, and full backend infrastructure as sole owner of an end-to-end Retrieval-Augmented Generation chatbot deployed for a Peruvian regulatory use case. AWS Certified Cloud Practitioner. C1 English (Cambridge FCE). Comfortable across the full stack (Python/FastAPI, TypeScript/React, AWS) with a focus on AI-integrated systems.

EXPERIENCE

Valere — Junior Software Engineer (AI/LLM features)

Remote (Lima, Peru) | Feb 2025 — Apr 2026

- Sole engineer end-to-end on a Retrieval-Augmented Generation chatbot for Peruvian tax regulatory queries (SUNAT corpus): architecture, AWS Bedrock (Nova Lite) integration, pgvector-on-PostgreSQL retrieval, FastAPI backend, system-prompt design, and admin panel.
- Raised end-to-end response accuracy from ~60% to ~92% on a manually-labeled evaluation set scored via hybrid human + LLM-as-judge near-exact-match, by tuning retrieval threshold, refining system prompts, and adding source-citation grounding.
- Diagnosed and resolved a production failure where the model ignored authoritative knowledge base entries: introduced metadata tags and scope separation between admin-curated documents and per-session user uploads, eliminating cross-context contamination.
- Built AWS infrastructure: S3 for document storage, Lambda for scheduled embedding refresh and notifications, CloudFront CDN, CloudWatch observability, with pgvector for semantic search over Bedrock-generated embeddings.
- Implemented async websocket streaming for token-by-token chat responses and sequential auth flows, improving perceived latency on first-token delivery.

SNUP

Remote (Santiago de Chile) | May 2024 — Dec 2024

- Built admin dashboard from zero using React, Vite, and Material-UI, enabling pet-sitter approval workflows; in production with ~5 admin users.
- Delivered production-ready product two weeks ahead of deadline as the sole junior engineer in the team.

Google Developer Student Club — Hackathon Lead

Lima, Peru | Feb 2023 (48-hour hackathon)

- Top 16 of 100+ teams nationally in GDSC Peru Hackathon — built Flutter + Firebase MVP of YouCanApp, a pediatric cancer support platform, within 48 hours.

PROJECTS

Pneumonia Detection from Chest X-Rays — TensorFlow, Keras, OpenCV

https://github.com/eJosR-Coding/pneumonia_detector

- Binary classifier on 5,856 chest X-rays comparing ResNet50 vs DenseNet-121 transfer learning, anchored against a logistic-regression-on-frozen-features baseline (0.91 AUC) to establish a performance floor.
- DenseNet-121 fine-tuned final model reached 0.96 AUC, 95% sensitivity, 83% specificity; threshold optimized for clinical screening (sensitivity $\geq 95\%$).
- Grad-CAM error analysis revealed non-clinical activations on ResNet50 (text labels, image borders), motivating the architecture switch to DenseNet-121 used in Stanford's CheXNet for more clinically-relevant heatmaps could not work properly but got improvement over the months.

LoL RAG Chatbot — FastAPI, Astro, Ollama, sentence-transformers

github.com/eJosR-Coding/lol-chatbot

- Domain-specific RAG chatbot over a 200-entry curated knowledge base, using sentence-transformers multilingual embeddings (384-dim) for retrieval and a locally-hosted Ollama model (qwen2.5:0.5b) for generation full RAG stack on consumer hardware, no cloud API.
- Implemented dual-threshold confidence gating (0.30 hard fallback, 0.45 context injection) and dual-retrieval (current message vs history-combined query) to handle both topic continuation and abrupt topic changes without hallucination.

Translator Runner — KRunner Plugin for KDE Plasma 6 (C++17)

github.com/eJosR-Coding/translator-runner

- Rewrite of the upstream krunner-translator plugin after it broke on Plasma 6.6+ / Qt 6.10 with qBadAlloc crashes. Built against KDE Frameworks 6 (KF6::Runner, KF6::CoreAddons, KF6::Notifications) with async QProcess subprocess management.
- Supports 100+ languages including indigenous Latin American languages (Quechua, Aymara) and regional variants; local text-transform layer (binary, hex, base64, morse, cheems language, custom filters) runs entirely in-process with zero network calls.

EDUCATION

Universidad Peruana de Ciencias Aplicadas (UPC) — Lima, Peru

B.Eng. Software Engineering

Honors: Academic Excellence Scholarship

Universidad Andrés Bello (UNAB) — Santiago, Chile

Computer Engineering Exchange Semester | 2026

Relevant coursework: Data Mining (R), Machine Learning Fundamentals, Algorithms & Complexity, Software Architecture

Aspire Leaders Program (Harvard-backed) — 2025 to Present

TECHNICAL SKILLS

AI / LLM: RAG pipelines, AWS Bedrock (Nova Lite, Claude), OpenAI APIs, embeddings, semantic search, vector databases (pgvector), LangChain, prompt engineering, agent orchestration, sentence-transformers, local LLM deployment (Ollama)

Languages: Python, TypeScript, JavaScript, C++, SQL

Backend & APIs: FastAPI, REST, async/websockets, PostgreSQL, MongoDB, Firebase

Frontend: React, Next.js, Vue, Astro, Tailwind, Material-UI

Cloud & DevOps: AWS (Lambda, S3, Bedrock, CloudWatch, CloudFront, RDS), Docker, CI/CD, Git/GitHub

Currently learning: MCP (Model Context Protocol), LangGraph, LLM observability (OpenTelemetry, Langfuse)

CERTIFICATIONS

- AWS Certified Cloud Practitioner (CLF-C02)
- Cambridge English: First Certificate in English (FCE, C1)
- AWS Educate: Introduction to Generative AI
- MongoDB University: Introduction to MongoDB
- Coursera: SQL for Data Science

LANGUAGES

Spanish (native) | English (C1, Cambridge FCE) | Portuguese (B2)

VOLUNTEER

I.E. 0086 José María Arguedas **Lima, Lima/Peru**
English Teacher Service, Sumaq Yachay **August 2023 – November 2023**

- Led language education initiatives, teaching English in a school catering to underprivileged communities.
- Fostered a positive learning environment, addressing the need for improved English language skills among primary school children.

Sumaq Yachay **Lima, Lima/Peru**
Education Opportunity Researcher and Coordinator, Sumaq Yachay **June 2023 –2025**

- Conduct comprehensive research to identify educational opportunities, scholarships, and free courses for children with a hunger for knowledge.
- Lead the coordination efforts to empower students with valuable insights and resources.
- Active collaboration with various platforms and organizations to enhance educational growth in low-resource communities.