

JOAN PELLEGRINO

AI / GenAI Engineer | Multi-Agent Systems | RAG | Distributed Systems

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SUMMARY

AI/GenAI engineer and senior integrations specialist with nearly 6 years of experience building production-oriented data, integration, and distributed systems. Focused on **multi-agent orchestration, RAG, Text-to-SQL, and LLM application architecture** using Google ADK, LangGraph, Python, and cloud services. Combines AI application design with strong foundations in event-driven systems, APIs, data pipelines, and enterprise infrastructure.

AI / GENAI TECHNICAL SKILLS

Agentic AI: Google ADK, LangGraph, LangChain, Multi-Agent Systems, Agent Orchestration, Tool-Using Agents, MCP (Model Context Protocol)

LLM Applications: RAG, Text-to-SQL, Gemini API, Claude API, OpenAI API, Vector Databases (ChromaDB), Semantic Extraction

AI Safety / Controls: Schema Validation, Read-Only Query Controls, Contextual Result Explanations

Engineering: Python, FastAPI, PySpark, SQL, TypeScript, REST APIs, Webhooks, Docker, CI/CD, Git

Cloud / Data: AWS (Lambda, S3, API Gateway, DynamoDB, SQS), GCP (BigQuery, GCS, Vertex AI), Kafka, Snowflake, PostgreSQL, ETL/ELT

PROFESSIONAL EXPERIENCE

SIMETRIK INC. - Senior Integrations Engineer

Dec 2020 - Sep 2026 | Colombia

- Architected and implemented enterprise ETL/ELT pipelines across REST APIs, SFTP, S3, GCS, BigQuery, and Snowflake, processing **millions of financial transactions daily**.
- Implemented asynchronous, real-time synchronization with **Apache Kafka, webhooks, and AWS SQS** to reduce latency across distributed platforms.
- Developed fault-tolerant, event-driven serverless architectures with **AWS Lambda, API Gateway, S3, and DynamoDB**, improving scalability while reducing infrastructure overhead.
- Built high-performance **Python and PySpark** parsing and validation tools for MT940, fixed-width files, structured PDFs, CSV, and Excel datasets.
- Partnered with engineering teams and enterprise clients to design custom integration solutions and refactor legacy services, achieving **99.9% uptime**.

AI / GENAI ENGINEERING PROJECTS

Enterprise Multi-Agent Intelligence Platform

Python | Google ADK | LangGraph | RAG | Vector DB

- Developed a **multi-agent platform** with Google ADK and LangGraph to autonomously handle specialized technical questions for non-technical teams.
- Designed a semantic extraction and **RAG pipeline** for unstructured technical documentation, reducing operational dependence on domain specialists.
- Built a conversational **Text-to-SQL agent** with strict schema validation, read-only security controls, and contextual explanations of query results.

Full-Stack Web Platforms & Service Layer

TypeScript | Astro | React | Tailwind CSS | Cloud APIs

- Built modular responsive web applications and executive dashboards integrated with resilient backend microservices and cloud APIs.

EDUCATION & CREDENTIALS

Undergraduate Degree in Systems Engineering / Computer Science - Universidad de Córdoba | 2013 - 2019 | Colombia

Thesis: Laureate IoT control and monitoring system | **Certification:** Python 3 Programming - University of Michigan | **Recognition:** IBM Behind the Code Marathon - AI & Data

Languages: Spanish (Native) | English (Basic / Improving)