Francisco Cordero Aguero

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Software Engineer with a foundation in Mechatronics, specialized in designing, building, and deploying backend solutions, LLM-based applications, RAG pipelines, and multi-agent systems using Python (FastAPI) and .NET. Proven ability to deliver production-ready systems, from API design and database management to containerized deployments via AWS and Docker.

Education

LA SALLE UNIVERSITY Durango
Engineering in Mechatronics and Process Control Systems 2020-2025
Thesis: Machine Vision System for PPE Detection with Real-Time Alarm

- Development of a computer vision model to identify in real time the correct use of Personal Protective Equipment (PPE).

Git-Hub: https://github.com/Francisco-cor/portfolio | **LinkedIn**: https://www.linkedin.com/in/francisco-cordero-aguero-814446276/

Experience

GEBESA Gomez Palacio, Dgo
Full Stack Developer - AI Developer Jun 2025 - Oct 2025

- Developed FastAPI backend improving AI agent latency by 80% and reducing cost by 20%.
- Built and deployed B2B Order Management Portal (Astro + Strapi + React) for US dealers.
- Developed an automation bot to extract and analyze government contract data for compliance reporting.
- Delivered AI assistant modules for employee support and knowledge retrieval.

SSEL - Servicios de Soldadura Especializados Laguna Gomez Palacio, Dgo
Computer and IT Technician Feb 2024 - Jan 2025

- Linux/Shell Server Control for Backups/Docker for SQL
- Automating inventory reports using pivot tables and macros in Excel and Python
- Supported process automation and digitalization of operations
- Diagnosis, Maintenance and Repair of Computer Equipment

Selected Projects

- **Multi-Agent AI API** (FastAPI + PostgreSQL + Docker + JWT): High-performance backend orchestrating Gemini3 and GPT-5 models, multimodal processing and real-time Google Search grounding, async conversational memory, and rate-limiting designed for enterprise-grade deployments.
- **Local Multi-Agent RAG System** (Python + ChromaDB + Ollama): Resource-optimized architecture decoupling CPU-bound semantic retrieval from GPU-bound LLM inference; features a multi-agent "Swarm" (Provocateur/Critic) and a semantic cache layer for low-latency response delivery.
- **Telemetry API** (.NET + Oracle + EF Core + Docker): API for telemetry ingestion, with CI/CD pipelines and a deployment model designed for AWS Fargate.

Technical Skills

Backend: Python (FastAPI), C# (.NET 8), NodeJS.
Frontend: JavaScript/TypeScript, React, AngularJS, NextJS, Astro
AI & ML: RAG, Prompt Engineering, Agentic Workflows (Swarm/Consensus), Fine-tuning, OpenAI, Google GenAI
Databases: Supabase, Oracle, SQL, SQLite, EF Core, ChromaDB
Cloud & DevOps: AWS (ECS/Fargate basics, CloudWatch), Docker, GitHub Actions
Mechatronics: Robotics, Automatization and Control, Metallurgy, Neumatics, CNC.
Concepts: ITIL, Agile/Scrum, Manufacturing Telemetry, Computer Vision
Language: English (**C1**), Spanish (**Native**).