CARLOS LORENTE KAISER

Physicist + Pharmacist → AI Engineer | Healthcare + Tech + Science

Madrid, Spain • cjlkaiser@hotmail.com • github.com/cjlkaiser-cpu

PROFILE

Dual scientific background combining **Theoretical Physics** (UAM) and **Pharmacy** (CEU), with international experience at **Università La Sapienza, Rome**. This rare combination enables me to bridge fundamental science, healthcare, and AI engineering with mathematical rigor, clinical expertise, and technical execution.

KEY ACHIEVEMENTS

- Improved Spanish pharmacy LLM accuracy: **30%** → **93%+** (63-point gain)
- Built and deployed **8 production applications** in 3 months
- Created **minerOS**: Original data mining methodology
- Validated **200 clinical cases** with systematic scientific methodology
- Classified **1,361 photos** with custom ML pipeline (GPU-accelerated)

FEATURED PROJECTS

BioMistral RAG v1.3 — AI Validation Research

Python • Ollama • RAG • LLMs • Chain of Thought

Rigorous scientific validation of Spanish pharmacy AI model. Implemented RAG with Chain of Thought and JSON structured output. Developed specialized geriatric mode with STOPP/START criteria. Achieved 93%+ accuracy while identifying critical safety gaps for healthcare applications.

DirectOS v8.1 — Visual Pipeline Designer

JavaScript (Vanilla) • FastAPI • AI Agents • RAG

Production-ready IDE with integrated AI agents and offline-first architecture. 3,000+ lines of vanilla JavaScript following KISS principles. Features Scout Agent for intelligent debugging and Human-in-the-Loop workflow ensuring production safety.

minerOS — Original Data Mining Methodology

Framework Design • System Architecture

Created reusable methodology from first principles: "ORO → GEMAS → TESORO". Six modular components successfully applied across 3 production projects. Core principle: "Sin magia negra" — everything debuggeable.

PhotoMine v1.4 — AI Photo Classifier

Python • CLIP • ML • GPU Acceleration (Apple MPS)

End-to-end ML pipeline processing 1,361 photos with semantic classification. GPU-accelerated on Apple Silicon, EXIF/GPS extraction, Flask dashboard. Full implementation of minerOS methodology in production.

TECHNICAL SKILLS

Languages: Python, JavaScript (Vanilla), SQL

AI/ML: RAG, CLIP, LLM Validation, Ollama, Chain of Thought, Embeddings

Backend: Flask, FastAPI, REST APIs, Node.js

Databases: SQLite, PostgreSQL, ChromaDB (Vector)

Tools: Git/GitHub, VS Code, Claude API, AI Agents (HITL)

EDUCATION

Licenciado en Física Teórica — Universidad Autónoma de Madrid (UAM)

Mathematical foundations, computational physics, research methodology, algorithmic thinking.

Licenciado en Farmacia — Universidad CEU

Clinical pharmacy, pharmacology, drug interactions, healthcare regulations.

International Experience — Università La Sapienza, Rome

Academic year in Italy. International research environment. Italian language proficiency.

LANGUAGES

Spanish (Native) • **English** (Fluent - Technical & Scientific) • **Italian** (Proficient)

UNIQUE VALUE

Triple Domain Expertise: Physics (mathematical rigor) + Healthcare (clinical knowledge) + AI Engineering (technical execution). Rare ability to bridge scientists, clinicians, and engineers. Scientific approach to software: systematic validation, original methodologies, evidence-based AI safety.

Full learning journey documented at: github.com/cjlkaiser-cpu/learning-journey
"From understanding the universe to helping people — one validated AI system at a time."