

Luis Ángel Quiroz López

Data Science | Data Engineering | AI

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PROFESSIONAL SUMMARY

Physicist with an MSc in astrophysics (UNAM) who builds data and AI solutions in Python and SQL, from data pipelines and dashboards to LLM applications with RAG. Freelance experience evaluating LLM outputs against quality rubrics for model training (RLHF). Experienced in presenting technical work to non-specialist audiences.

CORE SKILLS

Programming: Python (pandas, NumPy), SQL, R, Bash, JavaScript, HTML/CSS

Data engineering & cloud: PostgreSQL, data modelling (star schema), ETL, data validation, Spark, Snowflake, Azure ML, FastAPI, Flask, Git, GitHub Actions, Linux

Machine learning: scikit-learn, PyTorch, TensorFlow/Keras, statistical inference (maximum likelihood, model selection, hypothesis testing)

LLMs & RAG: Anthropic API (streaming, tool use, token counting), Claude Code (headless mode, skills), prompt engineering, RAG with ChromaDB and hybrid retrieval, LLM evaluation (rubrics, red-teaming), RLHF, SFT and DPO

Quality assurance: Test design (boundary values, equivalence partitioning, negative testing), API testing with Postman and Newman, pytest, SQL data validation, regression testing in CI, Jira

BI & productivity: Chart.js, Excel (pivot tables, data validation), Power BI and Looker Studio (basic), Google Workspace, Microsoft 365

LANGUAGES

Spanish (native) · English (C2) · Italian (B2) · German (B1) · Portuguese (B1)

EXPERIENCE

AI Trainer, Software Validation & NLP

2026

DataAnnotation

Remote

- Tested unreleased LLMs across 10+ projects with adversarial prompts that exposed logic failures and policy violations, reporting each one in expected-versus-actual form.
- Designed the rubrics and metrics used to score model outputs, and provided RLHF feedback and NLP annotations for model evaluation and fine-tuning.

Language Specialist and Freelance AI Trainer

2026

Meridial Marketplace

Remote

- Reviewed and corrected LLM outputs in multilingual human-in-the-loop pipelines, giving structured feedback used to guide training.

Freelance Field Data Verification Specialist

2026

Independent contract

Mexico City

- Collected and verified data on commercial venues through site visits and digital documentation, keeping the dataset accurate and complete.

Freelance Web Developer

2025

Ashland Chemical de México

Mexico City

- Built an interactive product-presentation website for private-school outreach, from client requirements to a deployed interface.

Research Assistant

2024

UNAM, with Dr Gabriella Piccinelli Bocchi and Dr Ángel Sánchez Cecilio

Mexico City

- Reviewed the cosmology literature, wrote a literature review on cosmological perturbations and presented the theory to the research group every week.

Science Communicator (volunteer)

Institute of Physics, UNAM

Mexico City

- Presented cosmology research to audiences ranging from children to researchers in other fields, and built a live-camera demo that simulates a gravitational wave passing through the viewer.

SELECTED PROJECTS

Model Organisms of Reward Hacking on GSM8K | *Python, PyTorch, LoRA, SFT, DPO, GRPO, pytest*

Post-training pipeline built from scratch on Qwen2.5-0.5B, raising GSM8K accuracy from 34.8% to 43.7%, paired with controlled grader-loop-hole runs. Found that a biased RL grader induces fabricated chain-of-thought equations (in 75.5% of answers that copied a wrong hint) that bypass a consistency monitor, even when flagged answers are penalised.

github.com/lobby9000/reward-hacking-gsm8k

Incentive Compensation API: QA Case Study | *Postman, Newman, pytest, PostgreSQL, GitHub Actions*

Full QA cycle on a sales-commission REST API: 92 risk-based test cases, 8 defects found in the first build (2 critical) and 750 of 750 payouts reconciled against an independent Excel model after the fixes.

github.com/lobby9000/incentive-comp-qa

Vigía: Operational Stability Monitoring | *Java, Spring Boot, Flask, Django, PostgreSQL, MongoDB*

Ingestion service, analytics API and dashboard for service-level objectives over 1.4M simulated requests. Calibrating the anomaly detector cut false alarms from 18 to 1 across 40 runs without missing an incident. 69 automated tests.

github.com/lobby9000/vigia

Lecture Notes Pipeline with Agentic RAG | *Python, Claude Code, Anthropic API, faster-whisper, ChromaDB*

Turns four-hour class recordings into Obsidian notes with local transcription and Claude, plus a question-answering agent that cites the lecture and minute through hybrid retrieval. 88 automated tests. github.com/lobby9000/class-notes-pipeline

Retail Logistics Analytics | *Python, pandas, SQL, Chart.js*

Delivery-compliance case study on 62,420 shipment records cleaned to 59,615 with every exclusion documented, a star schema, peer benchmarking with Wilson intervals and an interactive dashboard.

github.com/lobby9000/Retail-Business-Data-Cases

EMA/MACD Signal Toolkit and API | *Python, pandas, FastAPI, Excel, pytest*

Signal engine cross-validated against a 3,815-formula Excel model to within 5×10^{-13} , run across 35 BMV equities and exposed as a tested REST API. github.com/lobby9000/macd-toolkit

Small LLM from Scratch | *Python, PyTorch*

Built an autodiff engine, a decoder-only transformer, a BPE tokenizer and Adam from first principles in CMU's Introduction to Modern AI, then trained and fine-tuned the model with SFT, DPO and RL on GSM8K.

lobby9000.github.io

Milky Way Structure | *Python, astropy, scikit-learn, TOPCAT*

Gaia DR3 and APOGEE-2 DR17 cross-match reduced from 682,284 to 281,612 stars through documented quality cuts, with kinematic classification, DBSCAN moving groups and the rotation curve.

github.com/lobby9000/Milky-Way-Structure

Galaxy Morphology CNN | *Python, TensorFlow, Keras*

5,608 MaNGA galaxy images. A deeper CNN raised test accuracy from 81.0% to 86.3% and minority-class recall from 0.68 to 0.77, benchmarked against InceptionV3. github.com/lobby9000/Galaxy-Morphology-NNClassifier

EDUCATION

MSc in Field and Particle Astrophysics

2026

Institute of Astronomy & Institute of Physics, UNAM

Mexico City

- Thesis: *Effective Equation of State and Gravitational Particle Production in Inflationary Models*, supervised by Dr Marcos A. García García.

BSc in Physics

Aug 2019 – Dec 2023

National Autonomous University of Mexico (UNAM)

Mexico City

- Degree awarded for high academic performance (*titulación por alto desempeño académico*), with an honourable mention (*mención honorífica*).

COURSES & CERTIFICATIONS

- **Introduction to Modern AI**, Carnegie Mellon University (online), Jan – Apr 2026
- **Diploma in Finance**, UNAM, Mar 2026 – Present
- **zero2hero** (2026): Claude Essentials · Claude Architect · Project Management and AI Agents with Claude · Software Development with Python and AI (24 sessions) · FastAPI and SQLModel · Financial Algorithms with Python · Statistics, Time Series and Econometrics with R