

Pablo Molina Rojas

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EDUCATION

University of Central Florida

Bachelor of Science in Computer Science, Math Minor — GPA 3.5

Relevant Courses: Calculus I-III, Matrix & Linear Algebra, Differential Equations, Mathematical Modeling, Data Structures & Algorithms, Discrete Structures & Logic

Orlando, FL

Graduated Spring 2026

EXPERIENCE

Epic Surveying & Mapping, LLC

Field Crew Manager

Field Crew Member

Orlando, FL

May 2026 – Present

August 2023 – May 2026

- Lead and supervise **field survey crews** on boundary, topographic, and construction surveys; operate **GNSS/GPS** equipment and **robotic total stations**.
- Designed and deployed the company’s **in-house field service platform**, now used by crews across **1,000+ job sites** in **5 Florida counties**.
- Coordinate crew assignments and field logistics, delivering survey data to licensed surveyors, engineers, and permitting agencies.

Research & Development Intern

OneEthos – Fintech for Sustainable Finance

August 2025 – December 2025

Remote

- Architected a **fraud detection pipeline** in **Flask** with a **dashboard** to track run history, using a **model ensemble** to score temporal transaction data and flag suspicious patterns.
- Built a **URL shortening service** with **Next.js** and **MongoDB** to provide marketing with campaign-level click tracking and analytics.
- Owned **end-to-end delivery** of internal tools and **full-stack features** for Green Bank partners, from requirements through deployment.

HACKATHONS

Crisis Averted – 3rd Best Overall — Hacklytics 2026, Georgia Tech

February 2026

- Built a **3D geospatial intelligence platform** visualizing humanitarian funding gaps on an interactive globe.
- Engineered **data pipelines** with **Databricks** and **Delta Lake**; integrated an **AI voice agent** (Google Gemini, Eleven-Labs) for natural language exploration of crisis data.

Helios AI – Best Use of ARM — Knight Hacks VIII, University of Central Florida

November 2025

- Built an **IoT-powered educational platform** using **Arduinos**, and **solar cells** to demonstrate renewable energy.
- Developed a **real-time dashboard** of energy KPIs with **Google ADK** voice interaction for natural language queries.

PROJECTS

ytk – Retrieval & Knowledge System — Python, ChromaDB, FastAPI, React, Three.js, Claude API

April 2026 – Present

- Built a semantic-search and ingestion system over an **11,000-document corpus** of video transcripts, articles, and notes: **embedding pipeline**, vector store, LLM enrichment, and an **MCP server** that agent sessions use as long-term memory.
- Designed a **retrieval eval gate**: 156 known-item queries scored against a **frozen corpus snapshot** in a pre-commit hook, so corpus growth cannot mask ranking regressions (**hit@5 0.90**, hit@10 0.94).
- Migrated the production **text encoder** (Qwen3, 1024-dim) behind the eval gate, with epoch-tagged collections and a rollback window.
- Maintained a **40-section experiment record** with null-model baselines, including **sparse-autoencoder** feature analyses and a cluster-validation redesign (**20+ seeds**, triplet agreement) after catching a false positive.

Epic Field Platform – Leaflet.js, Flask, PostgreSQL/PostGIS, Synology NAS, Docker

June 2025 – Present

- Developed a mobile-first **Leaflet.js** map interface with **route planning** and real-time field data access across **1,000+ job sites** in **5 Florida counties**.
- Architected a **Flask REST API** with **50+ endpoints**; integrated **county ArcGIS**, **Google Maps**, and **FEMA flood zone** APIs for multi-county parcel geocoding with **PostGIS** location queries.
- Deployed self-hosted **document storage on a Synology NAS**, integrated into the API for field-crew uploads and retrieval, with health monitoring on the platform’s status page.

SKILLS

Programming Languages: Python, Java, C & C++, JavaScript, TypeScript, SQL

ML & Retrieval: embeddings, vector search (ChromaDB), retrieval evals, UMAP, sparse autoencoders, LLM APIs

Tools & Platforms: Git, Docker, Databricks, PostgreSQL, PostGIS, Flask, FastAPI, Supabase, AWS, Vercel

Languages: Fluent Spanish (Reading, Writing & Speaking)