

ANDRES GUTIERREZ

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Computer Engineer specialized in applied AI and full-stack development, with experience building production enterprise platforms for the automotive and logistics sectors. Hands-on experience with tool-calling AI agents, MCP servers, Machine Learning for credit risk and demand forecasting, and ERP integration (Dynamics GP, Odoo) for brands such as BAIC and GWM.

PROFESSIONAL EXPERIENCE

INVERTROPOLI C.A.

AI Analyst — Emerging Technologies Unit

Valencia, Venezuela

Oct 2024 – Present

- Developed Sentinel, an internal full-stack platform (FastAPI + React/TypeScript) that unifies 7 management systems (credit risk, cash flow, spare-parts after-sales, tire replenishment, tax compliance, and impact analysis) on top of Dynamics GP, Odoo, and SQL Server for an automotive business group.
- Built a shared AI agent kernel with tool-calling and SSE streaming powering 6 assistants, including a federated chatbot with 116 tools filtered by user role before reaching the model; onboarding a new system went from ~150 to ~10 lines of code.
- Implemented production infrastructure for the agents: working memory (Redis), episodic and semantic memory (pgvector + embeddings), tracing with Jaeger, evals against the live model, and per-user cost control (token tracking and daily quotas).
- Developed 7 MCP (Model Context Protocol) servers exposing 159 tools with OAuth 2.0 PKCE authentication, enabling assistants such as Claude to query business data on behalf of each user with per-system permissions.
- Trained and deployed 6 ML models with PyCaret (calibrated LightGBM/GBM/RF/ExtraTrees ensembles) on data from the wholesale client portfolio in Dynamics GP to predict delinquency, days past due, and credit limits; the risk classifier reaches 0.78–0.81 AUC on a temporal holdout, with SHAP explainability.
- Built the after-sales module for BAIC and GWM with a spare-parts replenishment engine ((s,S) model) and seasonal SKU demand forecasting using TimesFM and ARIMA/STL, plus a 40-week cash flow projection and a real-time tax dashboard for a multi-entity business group.
- Integrated AI into the tire ordering workflow (consolidated orders, sales pushes, and promotions), cutting order processing time from 8 hours to under 2 (–75%).
- Designed Colossus, a real-time warehouse management system (WMS) that reduced inventory sync from one week to real time, optimizing tire picking, forklift routing, and storage logistics.
- Implemented real-time notifications (SSE), role-based access control, auditing, and 21 scheduled jobs (APScheduler); deployed with Docker and GitLab CI/CD.

RSC SERVICES C.A.

Full-Stack Developer — Academic Internship (degree requirement)

Valencia, Venezuela

Sep 2024 – May 2025

- Designed an AI-based proactive maintenance system that digitized Excel workflows for major national clients, centralizing data on industrial rotating equipment and vibration reports.
- Implemented Llama 3.2 (1B) with Hugging Face to process technical reports, automating Failure Mode and Effects Analysis (FMEA) and generating maintenance recommendations.
- Developed an automated scheduling module, integrated with the chatbot, that plans and assigns maintenance events based on predictive failure analysis (PHP, MySQL, JavaScript).

EDUCATION

UNIVERSIDAD JOSÉ ANTONIO PÁEZ

B.S. in Computer Engineering

San Diego, Venezuela

2021 – 2025

LEADERSHIP & ACTIVITIES

FORMULA SAE — UNIVERSIDAD JOSÉ ANTONIO PÁEZ

Aerodynamics Team Lead

San Diego, Venezuela

Jan 2024 – May 2025

- Led the design and simulation (CFD) of the race car's aerodynamic package, coordinating with multidisciplinary teams to optimize performance and stability.

ALQUIPADEL — UJAP ENTREPRENEURSHIP FAIR

Co-founder and Lead Developer · 2nd Place, Best Product Award

Carabobo, Venezuela

Apr 2025

- Led full-stack development of a padel court booking web platform, focusing on UX and real-time availability.

FUMCOSANDI

Community service volunteer: maintenance and environmental care of the local botanical garden

Valencia, Venezuela

SKILLS, CERTIFICATIONS & INTERESTS

AI & ML: tool-calling agents, MCP, agent memory (Redis, pgvector), embeddings, LLM evals, LLMs (Claude, Llama), PyCaret, LightGBM, scikit-learn, PyTorch, SHAP, forecasting (TimesFM, ARIMA/STL), computer vision, R

Backend & Data: Python, FastAPI, Node.js, PHP, Laravel, SQL Server, PostgreSQL/pgvector, MySQL, SQLite, Redis, Supabase, Pandas, Dynamics GP, Odoo

Frontend & DevOps: React, TypeScript, JavaScript, Tailwind CSS, Docker, GitLab CI/CD, Git, Linux, AWS

Certifications: German A2.1, SmartClass Venezuela (2026); Google Cloud Generative AI Leader (2026); Cisco CCNA: Switching, Routing and Wireless Essentials (2026) and Introduction to Networks (2025); HarvardX Data Science: Probability, Visualization and R Basics (2023–2024); EF SET C2 (2025)

Languages: Spanish (native), English (C2, EF SET), German (A2, in progress)

Interests: sim racing (organizer of Venezuela's largest racing simulation league and Assetto Corsa mod creator), automotive photography and design (CarVisionVzla), founder of the clothing brand Distrito 241

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