

Mauricio Díaz Villarreal

Mexico City, Mexico | +52 5573405340 | diazmau221@gmail.com

[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

Professional Experience

Software Developer June 2025 - Present

Deep Dive AI, Mexico City

- Designed ML pipeline on AWS (Lambda, Glue, Step Functions) to forecast weekly bottle consumption in restaurants, improving inventory accuracy and cutting costs.
- Wrote and optimized analytical SQL queries; built RESTful endpoints with FastAPI and CI/CD via GitHub Actions on AWS ECS to power restaurant dashboards.
- Re-architected fintech database schema and delivered full onboarding API including file upload, data registration, and Firebase authentication.

Data Science Intern January 2025 - June 2025

Chubb, Mexico City

- Created automated ML framework with MLflow & AutoGluon, greatly accelerating model lifecycle management.
- Optimized market-price prediction model, lowering RMSE from 1,800 to 1,100 and delivering tangible savings.
- Built cross-selling model to score existing clients and uncover upsell opportunities, enhancing commercial segmentation.
- Sales analysis revealed that strategic commission blend could boost revenue by 5%.

Data Scientist June 2024 - September 2024

GASPRE, Mexico City

- Created predictive sales model for competitors using AutoGluon, reducing percentage error from 70% to 30%.
- Implemented traffic analysis process with Waze API, resulting in 7% increase in customer numbers.
- Optimized sales forecasting with custom time series models using Nixtla, reducing error from 13% to 8%.

Research Assistant March 2024 - August 2024

ITAM, Mexico City

- Designed ETL pipelines integrating API data and web scraping for regression analysis.
- Implemented pipelines for BoardGameGeek data collection and Age of Empires tournament data via APIs and web scraping.

Education

B.S. Data Science

Instituto Tecnológico Autónomo de México (ITAM), Mexico City

- Relevant coursework: Linear models, relational and non-relational databases, machine learning, deep learning, Bayesian statistics.

Exchange Semester

University of New South Wales (UNSW), Sydney, Australia

Featured Projects

Full Stack ML App with Next.js

- CatBoost model served by FastAPI backend; React/Next.js frontend; orchestrated with Docker Compose for seamless deployment.

DQN Trading Bot

- Automated trading agent built with Deep Q-Learning, trained on Meta historical prices via Alpaca Markets API.

ETL with Amazon Glue & Athena

- End-to-end ETL pipeline ingesting inflation, interest rate, and FX data from INEGI & Banxico APIs, transforming with Glue, querying via Athena, and visualizing with Streamlit.

Technical Skills

Languages: Python, R, SQL, JavaScript, Java, C++, HTML, CSS

Cloud & DevOps: AWS (ECS, ECR, Lambda, EC2, Step Functions, Glue, S3, VPC, Kinesis-Data-Streams, Route 53, Bedrock AgentCore)

Data Science: Pandas, Scikit-learn, AutoGluon, CatBoost, MLflow, Nixtla, PySpark, Databricks

Frameworks: FastAPI, Next.js, React, Strands, Langraph, Docker, Git Actions

Certifications & Courses

- AWS Cloud Quest: Cloud Practitioner (May 2024)
- Full Stack Development: Django & React (June 2024)
- AI Agent Fundamentals - Hugging Face (February 2025)
- Model Context Protocol Unit 1 - Hugging Face (June 2025)

Languages

Spanish (Native) • **English** (Advanced)