

Diego Armando Salinas Lugo

AI & Machine Learning Engineer

Monterrey, Mexico | TN Visa Eligible for United States roles | Open to relocation and remote
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PROFESSIONAL SUMMARY

AI & Machine Learning Engineer, MSc Artificial Intelligence (Distinction), who ships complete systems — data pipeline, model, API, interface, cloud — not notebooks. Builds generative AI at SAP to automate technical fault reporting and founded ARMATUS, a production iOS coach. Delivered predictive maintenance at 16.74-cycle RMSE and R^2 0.825 on NASA C-MAPSS via FastAPI and a LangGraph multi-agent layer on Cloud Run. Monterrey, Mexico; TN visa eligible for United States roles.

TECHNICAL SKILLS

Languages	Python, SQL, TypeScript, JavaScript, MATLAB, C
Machine Learning	scikit-learn, XGBoost, TensorFlow, Keras, Random Forest, Gradient Boosting, Support Vector Regression, Neural Networks, Feature Engineering, Hyperparameter Tuning, Cross-Validation (LOPO, LOSO, k-fold)
Generative AI & LLM	SAP Business AI, SAP AI Core, SAP AI Launchpad, SAP Generative AI Hub, OpenAI GPT-4o, LangChain, LangGraph, Retrieval-Augmented Generation (RAG), Vector Databases (ChromaDB), Embeddings, Prompt Engineering, Multi-Agent Systems
MLOps & Deployment	FastAPI, REST APIs, Streamlit, Flask, Docker, Google Cloud Run, MLflow, Git, GitHub, Vercel, React Native (Expo), PostgreSQL, SQLAlchemy, Alembic, Supabase
Data, Evaluation & Domain	Pandas, NumPy, SciPy, NeuroKit2, Signal Processing (Butterworth, Welch PSD, PPG/HRV, vibration), Time-Series Forecasting, SHAP, LIME, ROC-AUC, Precision / Recall / F1, RMSE / MAE / R^2 , Fairness Analysis, Predictive Maintenance, Healthcare & Clinical ML, Affective Computing, Robotics (PID, Fuzzy Logic), Industrial Automation
Spoken Languages	Spanish (native), English (professional), German (basic)

PROFESSIONAL EXPERIENCE

Machine Learning & AI Engineer, SAP Jan 2026 — Present
San Pedro Garza García, NL, Mexico

- Design and deploy generative AI services that automate technical fault reporting, improving incident categorization and cutting engineer triage time.
- Build LLM-backed extensions on SAP Business AI and BTP, integrating foundation models via SAP AI Core, AI Launchpad and the generative AI hub.
- Convert unstructured fault text into structured, routable records, replacing manual classification with a model-driven workflow. Certified SAP Generative AI Developer (2026) on this stack.

Founder & Machine Learning Engineer, ARMATUS (armatus.app) May 2026 — Present
Monterrey, Mexico

- Founded and shipped a production iOS generative-AI training coach: onboarding, plan generation, live session tracking and progression, bilingual EN/ES.
- Architected a closed five-stage protocol (calibrate, plan, adapt, execute, evolve) that regenerates each week from logged sets, PRs and accumulated fatigue rather than serving a static template.
- Built a streaming API converting an athlete profile plus daily readiness signals (energy, sleep, time) into a dosed weekly plan with explicit rationale.
- Modelled endurance work as real systemic load so strength volume auto-adjusts behind a readiness ceiling; own the full surface from mobile client to API.

Data & AI Trainee, Interius Sep 2025 — Dec 2025
San Pedro Garza García, NL, Mexico

- Delivered AI MVPs end to end — problem framing, feature engineering, model training, evaluation and deployment.
- Built contact segmentation across engagement, geography and channel activity, converting a flat list into targetable cohorts for personalized outreach.
- Shipped workload and efficiency diagnostics as containerized Streamlit services on Google Cloud Run for self-serve stakeholder access.

AI Researcher, University of Essex Nov 2024 — Sep 2025
Colchester, United Kingdom

- Built an end-to-end emotion-recognition pipeline from PPG across 62 participants, reaching Pearson $r = 0.5975$ and RMSE 0.154 for continuous arousal, above the $r \approx 0.40$ reported for comparable PPG-only work.
- Engineered 30+ HRV features across time, frequency (Welch PSD) and non-linear Poincaré domains with per-subject baseline normalization.

- Validated under leave-one-participant-out cross-validation with nested search, benchmarking Random Forest, XGBoost and SVR to prove generalization to unseen subjects.

SELECTED PROJECTS

Predictive Maintenance Platform — Remaining Useful Life rul-dashboard-368785016309.us-central1.run.app
XGBoost, SHAP, FastAPI, Streamlit, LangGraph, OpenAI, MLflow, Docker, Google Cloud Run

- Predicted turbofan remaining useful life on NASA C-MAPSS at 16.74-cycle test RMSE, 12.33 MAE and R² 0.825, with SHAP exposing the driving sensor per prediction.
- Served it via FastAPI behind a Streamlit fleet dashboard, plus a LangGraph multi-agent layer answering natural-language questions and emitting PDF briefings.

Personal Research Assistant — Retrieval-Augmented Generation github.com/DArmandoSalinas/RAG
FastAPI, LangChain, ChromaDB, OpenAI GPT-4o, text-embedding-3-small, Streamlit, PyPDF

- Built document question-answering that chunks, embeds and retrieves via MultiQueryRetriever, grounding every GPT-4o answer in ChromaDB and returning its source snippet.
- Indexed a 149-segment corpus and eliminated unsourced answers by making citation a hard requirement of the response contract.

Cardiovascular Risk Classification — Leak-Free Clinical ML github.com/DArmandoSalinas/HeartDisease-Predictor
scikit-learn, HistGradientBoosting, SHAP, LIME, ColumnTransformer

- Classified coronary disease across 920 patients from four sites at 0.90 test ROC-AUC, 87.3% recall and 0.85 F1, tuning the threshold for recall since a missed case costs more than a false alarm.
- Prevented leakage by fitting the ColumnTransformer inside cross-validation, and exposed a transportability gap via Leave-One-Site-Out validation (mean AUC 0.79, worst site 0.70).

COAZON — Heart-Health Companion (in development)
FastAPI, SQLAlchemy 2.0, PostgreSQL, Alembic, JWT, React Native (Expo), TypeScript, OpenAI, Railway

- Building a bilingual cardiac-care app that turns a prescription into a living plan — medication reminders, guided blood-pressure logging with clinical-zone trend charts, a deterministic red-flag alarm engine and a doctor-ready PDF report.
- Bounded the AI layer so it structures and summarizes but never diagnoses, prescribes or alters a dose, and made it degrade to fully manual without an API key so the app never depends on the model being available.

Motor Performance Monitoring — Industrial IoT (1st place, Tec Expo Ingenierías)
github.com/DArmandoSalinas/Motor-performance-prediction
Python, Streamlit, signal processing, serial telemetry, statistical thresholding

- Won first place at Tec Expo Ingenierías by re-engineering an existing plant maintenance procedure into a live monitoring system, profiling a Sumitomo three-phase motor across five speed baselines and a Haas Mini Mill from combined trajectories.
- Scored machine health 0–100 from threaded serial vibration and temperature telemetry with machine-specific adaptive thresholds, keeping the design fully rule-based so every alarm traces to the statistic that fired it; recognized by Rockwell Automation for the integration work.

ADHD Screening Support with Fairness Analysis github.com/DArmandoSalinas/Predicting-ADHD-sex
scikit-learn, XGBoost, Keras, KernelPCA, SHAP, LIME

- Predicted ADHD outcomes for 1,213 participants from fMRI connectomes and psychosocial data at 82% accuracy, 0.88–0.90 recall and 0.866 AUC; reported results by sex, surfacing a female-recall gap tied to documented underdiagnosis.

EDUCATION

MSc Artificial Intelligence — Distinction 2024 — 2025
University of Essex, United Kingdom

- Modules: Machine Learning; Intelligent Systems and Robotics; Data Science and Decision Making; Neural Networks; Natural Language Engineering. Thesis: heart-rate-variability emotion recognition from PPG signals.

B.Sc. Mechatronics Engineering 2021 — 2025
Tecnológico de Monterrey, Mexico

- Coursework: control systems, industrial automation, robot design, manufacturing.

CERTIFICATIONS

SAP Certified: SAP Generative AI Developer (2026) · Databases and SQL for Data Science with Python — IBM (2026) · Google Analytics Certification — Google (2025) · Machine Learning Specialization — Stanford & DeepLearning.AI (2024) · ML Web App with Streamlit and Python — Coursera (2025) · Introduction to Generative AI — Google Cloud (2024) · AI For Everyone — DeepLearning.AI (2024) · CS50x: Introduction to Computer Science — Harvard (2022) · NanoLab — MIT.nano / Tec-MIT (2023) · MATLAB Onramp — MathWorks (2022)