

IGNACIO MORALES

DATA SCIENTIST

Portfolio: <https://ignacio-morales.com/>

PROFESSIONAL EXPERIENCE

Data Analyst | July 2025 - Present

Living Stones Foundation

- Built a weekly anomaly detection layer over 399,859 territory-weeks, replacing a flat baseline with a seasonal one after measuring a 10x to 20x dry-season effect that was driving false positives.
- Identified a measurement bias in which recent periods were systematically undercounted, since source confidence levels mature over 3 to 4 months, and redesigned collection so every confidence level is retained.
- Consolidated a fragmented geospatial source of 7,466 polygons into 3,866 validated territories and built the analysis dataset from 647,754 daily alert records pulled from the Global Forest Watch REST API.

PROJECTS

Loan Default Prediction with Fairness Audit | Freelance project | 2026

- Credit risk model over 1.3M loans whose decision rule maximizes expected profit, not accuracy: an Optuna-tuned, isotopically calibrated LightGBM that beats logistic regression and Random Forest baselines.
- Validated out of time on a year the model never saw: AUC 0.73 in validation, 0.72 out of time, near-exact calibration, and a profit threshold at 0.1592.
- Disparate impact audit with Fairlearn (demographic parity and equalized odds) and profit-aware mitigation via group-specific thresholds, pricing equity at \$2.4M to \$5.7M and raising the parity ratio above 0.92 across all groups.
- Repo: github.com/morales-ignacio/loan-default-fairness

Buenos Aires Real Estate Trends | Personal project | 2026

- Two-source scraping pipeline (httpx + BeautifulSoup) into a documented 59,069-listing dataset covering all 48 neighborhoods of Buenos Aires, deduplicated by source and listing ID and stored in PostgreSQL.
- Quantified what actually drives price per m²: neighborhood explains 46% of the variation while unit size explains 0.7% and adds almost nothing once neighborhood is accounted for, with units above 100 m² as the exception.
- Showed that ranking by total price and by price per m² answers different questions (Recoleta 3rd vs 11th) despite a 0.93 rank correlation, and isolated Puerto Madero as a separate price tier at 1.58x the next neighborhood.
- Repo: github.com/morales-ignacio/buenos-aires-real-estate

Checkout Conversion A/B Test | Personal project | 2026

- Pre-registered the experiment before observing any outcome: hypothesis, primary metric, guardrails, and a ship / do-not-ship rule sized by a power analysis on a business-defined minimum detectable effect.
- Assignment-integrity audit across 294,478 users before any analysis: duplicated and inconsistent records removed and a sample-ratio-mismatch test confirming the 50/50 split, with every exclusion documented by count.
- Confidence interval on the difference as the headline result, not the p-value: [-0.38 pp, +0.09 pp] against a pre-set +1 pp threshold at 8.3x the required sample, with day-by-day conversion ruling out a novelty effect, supporting a documented do-not-ship call.
- Repo: github.com/morales-ignacio/ab-test-checkout-conversion

TECHNICAL SKILLS

Languages: Python, R, SQL (PostgreSQL, MySQL, SQLAlchemy, CTEs, window functions)

Machine learning: scikit-learn, LightGBM, Optuna, SHAP, Fairlearn, MLflow, model calibration, out-of-time validation

Statistics and experimentation: pandas, NumPy, statsmodels, scipy, geopandas, hypothesis testing, power analysis, confidence intervals, A/B testing

Visualization: matplotlib, seaborn, Plotly, Power BI, Tableau

Data collection and APIs: REST APIs, FastAPI, Playwright, BeautifulSoup, httpx, requests

Tools: Git, GitHub Actions, Railway, Jupyter, uv, Excel, VS Code, Anaconda

Spoken languages: Spanish (native), English (C1 / Full Professional Proficiency)

EDUCATION

Universidad Católica Argentina (UCA) | B.Sc. in Data Science

Buenos Aires, Argentina

CERTIFICATIONS

PCAD™ Certified Associate Data Analyst with Python (Python Institute) | PCAP™ Certified Associate Python Programmer (Python Institute) | Advanced Certificate in English, C1 (University of Cambridge) | IBM Data Science Professional Certificate (IBM)