

Louis Miguel Bernal

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TECHNICAL SKILLS

Programming Languages & Tools: Python, SQL, Java, C++, JavaScript, Next.js, React, Docker, Linux, Git/GitHub, REST APIs

Data Engineering & AI Stack: Azure, dbt, Airflow, PyTorch, TensorFlow, Computer Vision, XGBoost, Scikit-learn, LLMs, NLP

WORK EXPERIENCE

Float Infinity

Sydney, Australia

Data Engineer · Full-stack & Quant | Azure, Python, SQL, Airflow, dbt, NLP, XGBoost, Scikit-learn

March 2026 – June 2026

- Developed an end-to-end NLP/ML quantitative trading algorithm across 15+ instruments, training sentiment and macro regime classification models on real-time market sentiment signals, macroeconomic indicators, institutional positioning flows, and options market data. Engineered 50+ features across technical momentum, sentiment, and macroeconomic signal layers, achieving 72% directional accuracy and a backtested Sharpe Ratio of 1.8.
- Built an Automated Reporting Dashboard consolidating real-time telemetry from Azure Resources, Azure Policy, Azure Patching, and Azure Backup into a unified operational intelligence layer, engineering REST API ingestion pipelines and SQL-optimized data models with incremental deduplication, cutting incident detection time by 50%, reducing manual reporting overhead by 70–80%, and achieving 99.9% system availability.
- Engineered end-to-end ETL pipelines and SQL-optimized data models (SQLAlchemy) with intelligent deduplication and incremental updates across 4+ enterprise platforms, reducing data redundancy by 65%, improving query performance by 3x, and enabling real-time Azure resource monitoring that increased cloud governance visibility by 80%+.

PASIA – Procurement and Supply Institute of Asia

Makati, Metro Manila

Data Analyst | Python, SQL, Scikit-learn, Pandas, Power BI, Excel, Git

June 2025 – Aug 2025

- Automated large-scale data preprocessing pipelines using Python (pandas, scikit-learn) and machine learning-based imputation, processing over 1 million procurement and contract records, reducing manual effort by 85%.
- Optimized SQL ETL pipelines for automated ingestion and transformation of high-volume procurement data, ensuring 99% consistency across departments and daily data refreshes for real-time insights.
- Developed advanced Power BI and Excel visualizations of private contractor procurement data, transforming 1M+ contract records into actionable business intelligence insights empowering stakeholders to identify high-value savings and efficiency gains.

Freelance

Remote

Data Analyst | Excel, Python, Power BI

Sept 2022 – Feb 2026

- Developed interactive dashboards and visualizations in Power BI and Excel, translating complex datasets into actionable insights for academic and small-scale business projects.
- Performed data cleaning, transformation, and exploratory data analysis (EDA) using Excel and Python (Pandas), structuring raw datasets into usable formats for reporting and analysis.
- Provided data analysis insights for clients and academic projects to support business and operational decisions.

PROJECTS

Nexus: AI-Powered Institutional Multi-Engine Alpha & Risk System | Python, SQLAlchemy, LLMs

March 2026 – Present

- Built a low-latency multi-venue derivatives trading system ingesting full-depth order book data from Binance, OKX, and MEXC with 100ms–2s signal latency, implementing cross-venue book fusion.
- Engineered an institutional-grade risk and execution framework combining multi-model VaR, vol/correlation-adjusted Kelly sizing, and an event-driven circuit breaker (async pub/sub) for real-time risk control.
- Designed system-level risk intelligence pipelines with AI-powered monitoring (Gemma 4 e4b + FinBERT) to enhance anomaly detection, exposure tracking, and adaptive risk throttling.

VisorAI: A YOLOv11-Powered Mobile Application Detection with Auditory Feedback | CV, Flutter

May 2025 – March 2026

- Engineered a real-time object detection system using YOLOv11 for automated recognition of Philippine LTO road markings and traffic signage, achieving 95%+ detection accuracy (mAP@0.5) across 10+ sign categories.
- Architected cross-platform mobile application (Flutter) integrating optimized CV inference pipeline with auditory feedback system, achieving < 200ms end-to-end latency from frame capture to voice output.

DeepS&P: Advanced LSTM-Based S&P 500 Quantitative Forecasting Engine | TensorFlow, Python

Dec 2025 – Feb 2026

- Architected an institutional-grade AI forecasting platform for the S&P 500, deploying a 3-layer LSTM (256 hidden units, dropout-regularized) trained on 90+ years of historical market data with advanced feature engineering on price and volume.
- Developed advanced quantitative analytics modules including interactive LSTM prediction validation and Monte Carlo simulations (2,000 stochastic paths) for volatility modeling and scenario analysis.

EDUCATION

De La Salle University – Dasmariñas, B.S. in Computer Science, GPA: 3.83 / 4.0

Aug 2022 – Aug 2026

Leadership: CSITPC - Director for Programming & Creatives Committee, DLSUD CSO - Executive Committee Director for Finance & Public Relations

CERTIFICATES

Ambient Agents with LangGraph

July 2026

International Conference on Artificial Intelligence (ICAI 2026)

Feb 2026

Deep Learning Specialization – DeepLearning.AI (by Andrew Ng, Founder of Google Brain)

Dec 2025