Dominicus Johan Nararya

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Education

The University of Auckland Auckland, NZ
Master of Science, Majoring in Data Science Feb 2025 – Present
Courses: Applied Multivariate Analysis, Advanced Regression, Machine Learning, Econometrics, Algorithms for Optimisation, Big Data Management, Time-Series Forecasting for Data Science.

Bachelor of Science, Majoring in Data Science Feb 2021 – Nov 2024
Courses: Statistical Computing, Statistical Modelling, Statistical Learning, Statistical Theory, Optimisation and Data-driven Decision Making, Artificial Intelligence, Data Structures & Algorithms.

Technical Skills

- **Programming Languages:** Python, R, SQL, SAS
- **Libraries/Frameworks:** Pandas, NumPy, Polars, Scikit-Learn

Projects

Anomaly-Detection in Prediction Markets Jul 2025 – Present
- Reduced data ingestion and normalization latency by 35% by architecting an end-to-end ETL pipeline handling 10^5+ raw transaction records from prediction market APIs (e.g., Polymarket) into a high-performance analytical schema.
- Increased predictive feature signal-to-noise ratio by synthesizing high-signal trader profiles, incorporating time-decayed ROI, trade-frequency volatility, and proximity-to-event execution metrics.
- Isolated "informed" or "insider" trading behaviors with a 94% accuracy rate by deploying unsupervised learning frameworks (Isolation Forests, DBSCAN) to detect accounts with statistically significant deviations in profitability.

Assessment of Multi-Variate Techniques in Market Regime Shifts Feb 2025 – Jun 2025
- Streamlined the processing of high-frequency, 2-minute financial data for 480 S&P 500 constituents by engineering an end-to-end data pipeline to calculate and standardize logarithmic returns.
- Captured time-varying market microstructure dynamics by implementing a rolling-window Principal Component Analysis (PCA) over a 5-day window, leveraging component loadings as features for downstream K-means clustering.
- Identified 2 distinct market regimes (low-volatility "risk-on" vs. high-volatility "risk-off") with 91% statistical confidence, validating clusters by overlaying SPY and VXX returns to characterize macro movements.

Experience

Defence, Science and Technology (DST) New Zealand
Data Scientist (Internship) Nov 2025 – Feb 2026
- Streamlined quality assurance workflows for large-scale AIS/GPS datasets by 45% by developing an automated Marine Data Reviewer CLI utilizing regex-driven schema detection, dynamic column standardization, and physical constraint validation.
- Reconstructed complete vessel trajectories with 98% accuracy by engineering advanced spatial-temporal analysis algorithms featuring dynamic zone-based gap detection (Inshore vs. Offshore) and automated NMEA message merging.
- Accelerated performance benchmarking turnarounds by 3x by implementing a comparative spatial verification system that calculates industry-standard metrics (RMSE, NSSDA) and generates error vector visualizations against Ground Truth data.

New Zealand Defence Force New Zealand
Reservist (Part-time) Nov 2021 – Present
- Optimized weapon system proficiency and safety for a 30-person platoon by executing structured training modules with strict attention to detail and adherence to operational instructions.
- Maintained 100% mission focus and objective delivery rates under high-pressure, dynamic field environments by rapidly pivoting to changing situational requirements.
- Enhanced cross-functional communication efficiency within high-stakes team environments by building rapport and collaboration channels across diverse cultural, professional, and socioeconomic backgrounds.

Activities

Hospice New Zealand New Zealand
Volunteer Aug 2020 – Jan 2023
- Managed point-of-sale transactions and weekly inventory reconciliation for a hospice charity shop, maintaining 100% cash-drawer accuracy while supporting community fundraising operations.