ROLAND OTENIYA

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SUMMARY

Impact-driven Data Science & Artificial Intelligence specialist, leveraging a robust Mechanical Engineering foundation to solve complex challenges. Currently developing a hybrid EGARCH-LSTM model to forecast stock market volatility, targeting an 18% RMSE reduction over standalone benchmarks. Proven ability to deliver business impact, having led a project that drove a 100% increase in EV demand.

EDUCATION

MSc Data Science & Artificial Intelligence (Distinction expected) | **University of Liverpool** | Liverpool, UK 01/2025 – 01/2026
Key Modules: Machine Learning, Geographic Data Science, Biocomputation, Programming (Python), Database & Info Systems.

BEng Mechanical Engineering | **Loughborough University** | Loughborough, UK 2018 - 2022
Relevant Project: Developed an Air Filtration System for an engineering firm, utilising rigorous data analysis, design iterations, and testing to propose a solution ranked in the top 10% of the cohort and implemented by the firm.

PROJECTS

Master's Dissertation: Stock Market Volatility Prediction using Advanced Deep Learning 04/2025 – 09/2025
Tech Stack: Python, TensorFlow/Keras, Pandas, NumPy, ARCH, Scikit-learn, Matplotlib, Statsmodels

- Developed a multi-stage deep learning pipeline to forecast 21-day realised volatility, systematically outperforming standard econometric benchmarks on an unseen test.
- Engineered and benchmarked a suite of GARCH family models (GARCH, EGARCH, GJR-GARCH) to select the optimal component for capturing volatility clustering and leverage effects.
- Constructed a final, enhanced hybrid model by training an LSTM on two inputs: residuals from the EGARCH model and VIX data as an exogenous feature, aiming to achieve at least an 18% lower RMSE than the best standalone model.
- Will validate the statistical significance of the forecast improvement using a Diebold-Mariano test and leverage SHAP analysis to interpret feature importance and explain model predictions during major market events.

Computer Vision: CNNs vs LwF CNNs comparison for Forest Fire Detection 01/2025 - 05/2025

- Led a research initiative to evaluate strategies for mitigating catastrophic forgetting in CNNs deployed for dynamic environmental monitoring (forest fire detection).
- Performed an analysis of the Learning without Forgetting (LwF) framework, detailing how its use of knowledge distillation on new data preserves prior learning without requiring access to original datasets.
- Synthesised empirical data from multiple studies to quantify performance, noting LwF's ability to improve new-task accuracy by over 12% (from 79% to 91.4%) while retaining 96.9% accuracy on original tasks.
- Assessed the practical trade-offs of LwF for real-world deployment, analysing its architectural impact on model size and its performance degradation as the number and diversity of sequential tasks increase.

EXPERIENCE

Assistant Manager & Project Manager (Electric Vehicle Demand) | Enterprise | Stansted Airport, UK 07/2023 - 07/2024

- Led a data-driven project, resulting in 100% increase in EV demand within 3 months, presenting findings to senior stakeholders.
- Drove a 15% increase in branch sales by analysing customer data and leveraging Italian and English fluency and basic Spanish to improve engagement with international clients.
- Improved team performance by leading new employee training on data-informed sales techniques, contributing to a 90% customer satisfaction rating and a 12% uplift in key morale metrics.

Coding Teacher | Mini Code Breakers | Liverpool, UK 03/2025 – 05/2025

- Taught fundamental programming concepts and problem-solving, demonstrating ability to **simplify complex technical topics** and foster practical coding skills.

SKILLS AND CERTIFICATIONS

- **Programming & Databases:** Python, SQL, R, Git
- **ML & AI Frameworks:** TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy
- **Core Competencies:** Time Series Forecasting, Computer Vision, Continual Learning, Statistical Analysis, Feature Engineering
- Studying for **AWS Certified Machine Learning –** Speciality Certification
- **Languages:** English (native), Italian (native), Spanish (basic)

INTERESTS

- Football, Juventus fan, Fitness, Gym, Running, Personal Training and Travelling