

# Ernest Echeng Ekereke

Data Science Enthusiast

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## Professional Summary

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Mathematically trained Machine Learning Enthusiast with strong foundations in statistics, optimization, and scientific computing. Experience in building predictive models. Research background in computational modeling and simulation, with little experience in applying machine learning to real-world datasets in logistics and business analytics.

## Technical Skills

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- **Programming:** Python, SQL, R
- **Data Science & ML:** Pandas, NumPy, Scikit-learn, Time Series Analysis, Regression, Classification
- **Machine Learning:** Feature Engineering, Model Evaluation, Cross-Validation, Hyperparameter Tuning
- **Visualization:** Matplotlib, Seaborn
- **Databases:** PostgreSQL
- **Tools:** Git, LaTeX, Jupyter Notebook, Excel
- **Mathematics:** Probability, Statistics, Linear Algebra, Optimization, Graph Theory

## Education

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<b>M.Sc. Financial Mathematics</b>	2025 - Present
University of Silesia in Katowice, Poland	
Relevant Coursework: Decision Techniques, Statistics, computational Mathematics	
<b>M.Sc. Mathematical Engineering</b>	2024 – 2025
University of L'Aquila, Italy	
Relevant Coursework: Machine Learning, Data Analytics, Optimization, Scientific Computing	
<b>B.Sc. Mathematics and Statistics</b>	2019 – 2023
University of Calabar, Nigeria	

## Professional Experience

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<b>Data Analyst (Intern)</b>	Nov 2021 – Apr 2023
Hogis Technologies Ltd., Nigeria	
• Collected, cleaned, and validated shipment and logistics data from Excel and SQL databases, improving data reliability by 15%.	
• Analyzed delivery route efficiency using Python (Pandas, Matplotlib) to identify bottlenecks and delays.	
• Built interactive dashboards to monitor on-time delivery rates and route performance.	

- Proposed route optimization strategies that reduced average delivery time by approximately 10%.

**Data Analyst (Intern)**

Royalline Technologies Ltd., Nigeria

Mar 2021 – Dec 2021

- Analyzed weekly sales and business performance data using Python and Excel.
- Generated automated reports and visual summaries to support management decision-making.

**Data Analyst (Intern)**

Aptech Limited, Nigeria

Apr 2019 – Jul 2020

- Performed exploratory data analysis (EDA) on structured business datasets to uncover trends and patterns.
- Developed predictive regression models for business forecasting tasks.
- Communicated insights to non-technical stakeholders using clear visualizations.

## **Selected Projects**

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### **Delivery Time Prediction and Route Optimization**

- Built regression models to predict delivery delays using historical shipment data.
- Applied feature engineering on distance, traffic patterns, and dispatch time.
- Evaluated models using RMSE and MAE, achieving improved prediction accuracy over baseline averages.

### **Human Activity Recognition Using Wearable Sensor Data**

- Developed a multi-class classification system for recognizing 19 human activities from sensor data.
- Implemented feature extraction and trained machine learning models using Scikit-learn.
- Achieved strong classification performance through model tuning and cross-validation.

### **Time Delay Estimation Using Machine Learning**

- Designed models to estimate and compensate for time delays in measurement signals.
- Compared classical methods (cross-correlation, ARX) with LSTM-based approaches.
- Demonstrated improved delay estimation accuracy using data-driven methods.

## **Research Experience (Selected)**

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### **Computational Modeling of Nanostructured Materials**

- Applied density functional theory (DFT) and numerical simulation to analyze electronic and sensor properties of nanomaterials.
- Conducted large-scale computational experiments and analyzed high-dimensional scientific data.
- Published results in peer-reviewed journals (Taylor & Francis, Springer, RSC).

### **Mathematical Modeling of Infectious Disease Dynamics**

- Developed compartmental mathematical models to study disease transmission dynamics.
- Performed parameter estimation and stability analysis using numerical methods.

## **Certifications**

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- SQL for Data Analysis – DataCamp
- Statistics for Exploratory Data Analysis – Udemy
- Data Science and Machine Learning Bootcamp – Udemy

## **Languages**

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English (Native), Italian (Intermediate), Polish (Basic)