Kelvin Ekun

+1 (413) 399-8499 | Kelvin Ekun | kekun@umass.edu

Education

University of Massachusetts, Amherst — Amherst, MA
Ph.D. in Industrial Engineering and Operations Research ***(Advisor: Ana Muriel)*** — *2023 – Present*

University of Ibadan — Ibadan, NG
B.Sc. Industrial and Production Engineering — *2016 – 2021*

Professional Summary

Industrial engineer and quantitative researcher with strengths in demand forecasting, inventory optimization, and applied machine learning. Experienced in building predictive models (deep learning & statistical learning), applying operations research techniques, and analyzing uncertain systems to support data-driven decision-making. Skilled in developing novel solutions for complex systems in Fast Moving Consumer Goods (FMCG) supply chains and driving continuous improvement.

Work Experience

Graduate Intern - Nigerian Breweries Plc — 2022 – 2023

- Performed sustainability and zonal audits to generate performance metrics across production zones (filler, packer/unpacker, pasteurizer, labeller, washer, tankroom, cellars, filtrox, and brewhouse panel), identifying and recommending fixes that reduced non-conformities by 12%.
- Conducted weekly safety audits and supported biweekly Autonomous Plant Maintenance (APM) Steps 0 to 3 activities across packaging and brewing lines.
- Tracked 25+ operational deviations in packaging, brewing, and logistics departments monthly; produced Root Cause Failure Analysis (RCFA) reports that reduced critical equipment failure rate by 9%.
- Resolved ICT-related issues, managed software patch updates aligned with Heineken's Digital Policy, and restored system functionality during outages.

Research Associate - Reeddi — 2021 - 2022

- Researched GHG emissions across life cycles of 50+ agricultural, construction, and media equipment.
- Performed life-cycle assessments showing emissions ranging from 0.03 to 1,423 kg CO_2 per day depending on equipment type.
- Authored 3 technical whitepapers translating emission metrics into insights for decision-making.

Engineering Intern - British American Tobacco, Nigeria — 2019 - 2020

- Managed master data and inventory records for 400+ spare parts and equipment, ensuring availability for installation in the Reloc Machine Packer.
- Drove full engagement of equipment owners and technicians on Autonomous Maintenance (AM) activity boards, supporting AM Step 1–3 attainment across all production lines.
- Coordinated materials requisition through SAP NEO, and handled sorting and delivery of engineering components.
- Supported planning and execution of major engineering projects, including machine installations and replacement of tobacco elbows, ensuring 100% compliance with engineering safety regulations.

Research & Selected Projects

Optimization for Real-Time Decision-Making in Make-to-Order Firms

– Formulated linear programming models for lead time quotation to optimize resource allocation in make-to-order (MTO) firms under operational constraints and customer uncertainty.

– Applied scenario-based sensitivity analysis to quantify the effect of demand variability, capacity limits, and lead time uncertainty on optimal quotation decisions, achieving 5 -11% profit improvement over the best practical benchmark.

– Demonstrated applicability to logistics planning, workforce scheduling, and distribution problems.

Deep Learning for Forecasting Food Insecurity and Time-Series 3D Printing

– Built deep learning architectures, including hybrid CNN-RNN networks, to model spatio-temporal demand patterns with inputs as 3D-printed layer images.

– Engineered features from multi-source datasets (price indices, seasonal trends, historical consumption, socio-economic indicators) to improve model signal quality.

– Designed and trained multi-layer perceptrons (MLPs) for forecasting food insecurity across counties.

– Delivered forecasts that improved short- and medium-term prediction by 12% (measured by MAPE/RMSE) compared to baseline statistical models.

Inventory Optimization

– Designed a probabilistic inventory model incorporating demand variability and stochastic lead times, targeting a reduction in holding costs by at least $5,000 per year.

– Computed optimal reorder points and safety stock levels to meet service-level constraints while minimizing holding costs.

– Delivered interpretable outputs suitable for integration into replenishment decision systems.

Awards & Scholarships

- UMass Innovation Corps Startup Funding (2025)
- Best Track Paper – IISE Modeling & Simulation Track (2024)
- Shell Petroleum Development Company (SPDC) Tuition Scholarship (2015–2021)

Skills

Technical Skills	**Programming & Query Languages:** Python, SQL, R
	Libraries: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn
	Frameworks & Tools: Jupyter Notebook, Git, PyTorch, VS Code, Tableau
	Optimization: Linear programming (primal–dual methods), stochastic modeling, Gurobi, AMPL, CPLEX, PuLP
	Analytics: Time-series forecasting (ARIMA, state-space models)
Soft Skills	Leadership, mentoring, teamwork, communication, training facilitation, and cross-functional collaboration.