

NGO DUC ANH NGUYEN

Operational Research Scientist

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PROFESSIONAL SUMMARY

Operational Research Scientist specialising in mathematical modelling, multi-objective optimisation, and algorithm design for large-scale supply chain networks. Developed an end-to-end automated optimisation workflow for NHS Blood and Transplant, translating operational requirements into a decision-support platform handling 2M+ records. Proficient in Python, MILP, Gurobi, and SQL, with an MSc in Logistics and Supply Chain Management (Distinction & Best Graduating Student). Additional expertise includes predictive modelling, simulation, and machine learning.

PROFESSIONAL EXPERIENCE

Research Assistant, University of Portsmouth x NHS Blood and Transplant **May 2025 – July 2026**

Project: UK's Blood Supply Network Redesign | HEIF-funded (c. £40K)

- Designed and deployed an end-to-end decision-support platform using Streamlit, integrating data processing, custom optimisation algorithms, Folium mapping, and Plotly analytics to enable interactive scenario analysis for non-technical users.
- Formulated an integrated multi-objective mathematical optimisation model and developed a custom heuristic algorithm, unifying facility location, donor assignment, resource allocation, and week-by-week scheduling.
- Achieved competitive shortfall performance against Gurobi with faster runtimes while outperforming Genetic Algorithm benchmarks in both solution quality and runtime, enabling full-network optimisation without commercial solvers.
- Architected Python-based ETL pipelines to process disparate operational datasets covering 2M+ donor records, 2,000+ collection sites, and 80+ team bases, validating postcodes and extracting multi-level temporal donation patterns for optimisation.
- Engineered an automated routing pipeline integrating OSRM APIs via Docker to generate large-scale origin-destination (O-D) distance matrices for the national blood collection network.

Supply Chain Intern, TRG International

Oct 2022 – Apr 2023

- Developed quarterly demand forecasts for 20+ imported coffee categories and monthly forecasts for 100+ FMCG SKUs, improving forecast accuracy and informing replenishment and S&OP decisions.
- Maintained inventory accuracy for 150+ SKUs across a central warehouse, three retail stores, and B2B clients using Excel and CheckSCM, ensuring product availability while minimising overstock.
- Coordinated purchasing and supplier activities across 20+ suppliers, monitoring order progress, delivery schedules, and supply risks to mitigate disruptions.

SELECTED PROJECTS

Mobile Grocery Retail Network Optimisation | [View Demonstration](#)

- Developed an interactive SSCFLP-based framework for facility location, customer allocation, and multi-period mobile service scheduling.
- Integrated OSRM road-network analysis and interactive scenario visualisation.

Retail Demand Forecasting and Statistical Modelling | [View Demonstration](#)

- Developed SKU-level time-series forecasting using 10 methods, including Holt-Winters and Auto-ARIMA, with hyperparameter tuning.
- Implemented rolling-origin evaluation and multi-horizon benchmarking using MAE, RMSE, and WAPE.

TECHNICAL SKILLS

- **Supply Chain & Operations:** Inventory and replenishment planning, MRP, BOM, procurement, capacity planning, simulation, demand forecasting, what-if analysis.
- **Optimisation & Operations Research:** MILP (Gurobi, PuLP, SCIP), branch-and-bound, LP relaxation, network design, route optimisation, facility location, resource allocation, scheduling, multi-objective optimisation, heuristic and metaheuristic methods, sensitivity analysis.
- **Programming & Data Analytics:** Python (pandas, NumPy, Matplotlib), SQL, VBA, ETL automation, data visualisation, machine learning (Decision Trees, Random Forest, XGBoost).
- **Systems & Tools:** Streamlit, Plotly, Folium, OSRM (Docker), SIMUL8, Pivot Tables, Excel Solver, Evolver.

PUBLICATIONS AND CONFERENCES

- Nguyen, N. D. A., Song, X., & Wall, G. (2026). *A multi-period optimisation model for integrated blood collection planning* [Conference presentation]. ORAHS 2026, Queen's University Belfast, United Kingdom.
- Nguyen, N. D. A. (2026). *Blood donor supply chain facility location problem* [Workshop presentation]. Supply Chain Optimisation in Health Care, University of Portsmouth, United Kingdom.

EDUCATION

Master of Science in Logistics and Supply Chain Management

Sep 2024 – Sep 2025

University of Portsmouth, United Kingdom

- Graduated with **Distinction**
- Awarded **Best Graduating Student** – Sep 2024 Intake
- Dissertation (Industrial Project): A Bi-Objective Mathematical Model for Optimising Blood Collection Sites in the UK's Blood Supply Chain: A Compound Heuristic Approach

Bachelor of Arts in Business and Human Resources Management

Sep 2017 – Sep 2022

International University, Vietnam – University of the West of England, United Kingdom

- Graduated with Second Class, Upper Division
- Peer tutor in Logistics and Supply Chain Management – led revision sessions on key concepts (e.g. shortest paths) and problem-solving approaches.

ACADEMIC AND TEACHING ACTIVITIES

Maths Cafe Facilitator – University of Portsmouth, United Kingdom

- Invited to support Maths Cafe sessions, providing one-to-one guidance on mathematical and quantitative topics.

Examination Invigilator – University of Portsmouth, United Kingdom

- Invigilated postgraduate examinations, including deferred, referral, and disability-supported sittings, both independently and alongside academic staff.

LEADERSHIP AND AWARDS

- **Head of Human Resources – IU Soft Skills Club (2017 - 2019):** Led a six-member HR team within a 30-member club, collaborating with four executive board members to organise five events, including a city-wide event, while managing recruitment and a budget of 10M VND.
- **Employee of the Month – TRG International (March 2023)**

CERTIFICATIONS

- SQL – Database querying, joins, aggregation, data transformation, and database operations
- Data Visualisation – Analytical visualisation using Matplotlib and Seaborn
- Machine Learning – Supervised learning methods including Decision Trees, Random Forest, and XGBoost