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 via funded collaborations with NHS Blood and Transplant and Entec International. Developed an automated, end-to-end platform translating large-scale optimisation models into interactive decision support tools, processing 2M+ records from disparate datasets. Proficient in Python, MILP, and Gurobi, with expertise in forecasting, simulation, and machine learning. MSc in Logistics and Supply Chain Management (Distinction & Best Graduating Student).

PROFESSIONAL EXPERIENCE

Accelerated Knowledge Transfer Associate, University of Portsmouth **Nov 2026 – Present**

Project: Global MRO Supply Chain Consolidation Hub Optimisation | Entec International Ltd.

Funded by Innovate UK and Entec International (c. £30K)

- Developing multi-objective mathematical optimisation models and metaheuristics to evaluate consolidation hub selection, procurement decisions, and service-level performance in global MRO supply chains.
- Analysing trade-offs between competing objectives across three supply chain configurations, comparing existing direct-shipment operations with two alternative strategies through quantitative and visual analysis.
- Designing a decision support framework to integrate optimisation models into Entec's existing enterprise systems, enabling automated data processing, optimisation, and scenario analysis.

Research Assistant, University of Portsmouth **May 2025 – Jul 2026**

Project: UK's Blood Supply Network Design | NHS Blood and Transplant **View Public Demonstration**

Funded by Research England (HEIF) and NHSBT (c. £40K)

- Designed and deployed an end-to-end decision support platform using Streamlit, integrating automated data processing, optimisation algorithms, Folium mapping, and Plotly analytics to enable non-technical users to evaluate operational decisions through a unified interface.
- 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**

Demand Forecasting, Procurement, and Inventory Planning **View Public Demonstration**

- 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.
- Independently extended previous forecasting work in Python by implementing 10 time series forecasting methods, incorporating hyperparameter tuning, rolling-origin evaluation, and multi-horizon benchmarking.
- 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 procurement across 20+ suppliers, monitoring deliveries and supply risks to minimise disruptions.

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. **Conference programme**
- 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. **Workshop details**

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

University of Portsmouth, United Kingdom

- **Lab Demonstration Support:** Assisted MSc students in the Operations Management module with formulating mathematical models, implementing them in Excel, and configuring Solver.
- **Maths Cafe Facilitator:** Provided one-to-one guidance on mathematical and quantitative topics during Maths Cafe sessions.
- **Examination Invigilator:** 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)**