

Dang Viet Anh Nguyen

PhD Student in Intelligent Transportation Systems,
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Education

March - September 2026	Visiting Researcher Technical University of Munich (TUM), Germany Host: Constantinos Antoniou
2023 – Present (Expected graduate in Jan 2027)	PhD Candidate in Machine Learning & Decision Systems Technical University of Denmark (DTU), Denmark Project: Proactive traffic control through AI and Big Data Supervisors: Filipe Rodrigues , Carlos Lima Azevedo
2021-2022	MSc. Supply Chain and Logistics Nanyang Technological University (NTU), Singapore Thesis: Two-echelon Vehicle Routing Problem for Post-disaster Aid Advisor: Rajesh Piplani
2015-2020	BE in Transportation Engineering Hanoi University of Civil Engineering (HUCE), Vietnam Awards: Third Prize, Vietnam Olympiad on Mechanics; Student with Five Good Merits (National Level)

Employment

2022 – 2023	Research Engineer – Intelligent Systems and Optimization Singapore Management University (SMU), Singapore Project: “E-waste must never be wasted: Vehicle Route Planning Optimization for E-Waste Collection” Supervisors: Aldy Gunawan
2020-2021	Research Assistant – Transportation and Traffic Simulation Lab Hanoi University of Civil Engineering (HUCE), Vietnam Project: Optimization Models for Urban Freight Distribution Supervisors: Viet Phuong Nguyen

Selected Publications

- Nguyen, D. V. A., Gunawan, A., Misir, M., Hui, L. K., & Vansteenwegen, P. (2025). Deep reinforcement learning for solving the stochastic e-waste collection problem. *European Journal of Operational Research*.
- Nguyen, D. V. A., Flensburg, J. V., Cerreto, F., Pascariu, B., Pellegrini, P., Azevedo, C. L., & Rodrigues, F. (2026). Multi-Graph Inductive Representation Learning for large-scale Urban Rail demand prediction under disruptions. *Computers & Industrial Engineering*, 111924.

Working papers

Nguyen, D. V. A., Azevedo, C. L., Toledo, T., & Rodrigues, F. (2026). Graph AlphaZero: Planning and Learning in Graph-Structured Multi-Agent Systems. (Working paper)

Nguyen, D. V. A., Azevedo, C. L., Toledo, T., & Rodrigues, F. (2026). Disruption-Aware Learning of Traffic Network Dynamics for Model Predictive Signal Control. (Working paper)

Nguyen, D. V. A., Alma F., Kiristine C., Toledo, T., & Rodrigues, F. (2025). Deep Forecast Reconciliation for Coherent Passenger Demand Prediction in Urban Rail Networks. (Working paper)

Under review / Preprints

Nguyen, D. V. A., Azevedo, C. L., Toledo, T., & Rodrigues, F. (2025). A Framework for Benchmarking Traffic Signal Control Robustness under Incidents: Comparative Study of Reinforcement Learning-Based Methods. arXiv preprint arXiv:2506.13836. (Under review)

Nguyen, D. V. A., Piplani, R. & Gunawan, A. (2024). Two-echelon covering tour vehicle routing problem for post-disaster aid (Under review)

Nguyen, V. P., Nguyen, D. V. A. & Truong, L. T. (2024). Adoption Intentions across e-Mobility Modes: Electric Cars, Hybrid Electric Cars, Electric Motorbikes, and Electric Bikes. (Under review)

Other publications

Nguyen, D. V. A., Gunawan, A., Misir, M., & Vansteenwegen, P. (2024, April). Q-learning based framework for solving the stochastic e-waste collection problem. In *European Conference on Evolutionary Computation in Combinatorial Optimization (Part of EvoStar)* (pp. 49-64). Cham: Springer Nature Switzerland.

Gunawan, A., Hoe, S. L., Lim, X. Y., Tran, L. C., & Nguyen, D. V. A. (2023, December). ExploreLah: Personalised and Smart Trip Planner for Mobile Tourism. In *2023 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)* (pp. 0923-0927). IEEE.

Gunawan, A., Nguyen, D. V. A., Nguyen, P. K. M., & Vansteenwegen, P. (2023, September). Grasp solution approach for the e-waste collection problem. In *International Conference on Computational Logistics* (pp. 260-275). Cham: Springer Nature Switzerland.

Gunawan, A., Nguyen, M. P. K., Vincent, F. Y., & Nguyen, D. V. A. (2023, August). The heterogeneous vehicle routing problem with multiple time windows for the e-waste collection problem. In *2023 IEEE 19th International Conference on Automation Science and Engineering (CASE)* (pp. 1-6). IEEE.

Presentations

Nguyen, D. V. A., Flensburg, J. V., Cerreto, F., Pascariu, B., Pellegrini, P., Azevedo, C. L., & Rodrigues, F. (2025) Large-scale demand prediction in urban rail using multi-graph inductive representation learning. *104th Annual Meeting of the Transportation Research Board (TRB)*, 2025. Lectern Session: Emerging Behaviors of Urban Rail Transit Passengers - A Global Scan.

Nguyen, D. V. A., R. Piplani, A. Gunawan. GRASP reinforced by Evolutionary Path-relinking for two-echelon covering tour vehicle routing problem. *33rd European Conference on Operational Research (EURO)*, 2024.

Gunawan, A., Nguyen, D. V. A., Nguyen, P. K. M., & Vansteenwegen, P. (2023). GRASP based metaheuristic to solve the mixed fleet e-waste collection route planning problem. *17th International Congress on Logistics and SCM Systems*, 2023.

Thesis

Nguyen, D. V. A., (2022). Two-echelon vehicle routing problem for post-disaster aid. *Nanyang Technological University*.

Research Area

Learning-guided combinatorial optimization and rollout-based planning for large-scale multi-agent traffic control (GNN-based surrogate simulators, game-theoretic coordination for multi-agent systems).

Model-based, contextual and semi-offline reinforcement learning under non-stationary and disruption-driven environments.

Graph neural networks for spatio-temporal traffic prediction and control at lane- and intersection-level (hierarchical and multi-graph models).

Large-scale microscopic traffic simulation and digital-twin development using SUMO/TraCI, including incident and rerouting modeling.

Stochastic optimization and vehicle routing (two-echelon VRP, stochastic collection) and hybrid learning-optimization methods.

Software and tools: Python, PyTorch, PyTorch Geometric, NumPy, SciPy, SUMO, TraCI, NetworkX, scikit-learn, pandas, matplotlib, Jupyter, Git/GitHub, Linux, CUDA, multi-GPU training, SLURM/HPC clusters.

Funding & Grants

William Demant Foundation, Research Stay Grant for a six-month research stay at the *Technical University of Munich (TUM)*, Germany (DKK 18,500).

Otto Mønsted Foundation, Research Stay Grant for a six-month research stay at the *Technical University of Munich (TUM)*, Germany (DKK 30,000).

Stibo Foundation, Research Stay Grant for a six-month research stay at the *Technical University of Munich (TUM)*, Germany (DKK 30,000).

Otto Mønsted Foundation, Travel Grant for participation in the *Transportation Research Board (TRB) Annual Meeting 2025*, Washington, D.C., USA (DKK 7,500).

Teaching and Mentoring

Teaching Assistant – *42101 Introduction to Operations Research*, Spring 2024, Technical University of Denmark (DTU).

Teaching Assistant – *42578 Advanced Business Analytics*, Spring 2024 & Spring 2025, Technical University of Denmark (DTU).

Teaching Assistant – *42577 Introduction to Business Analytics*, Autumn 2024 & Autumn 2025, Technical University of Denmark (DTU).

Co-supervisor – MSc Thesis: Damien Fleury. MSc in Transport and Logistics, Spring 2024. Thesis: *Deep Reinforcement Learning for Traffic Signal Control: Adapting the framework for SimMobility*.

Co-supervisor – MSc Thesis: Alma Fazlagic & Kristine Pryds Loft. MSc in Business Analytics, Spring 2025. Thesis: *Forecasting Reconciliation with Origin-Destination Models Using Graph Neural Networks*.

Evaluator for the ELLIS PhD Program – European Laboratory for Learning and Intelligent Systems

Reviewer for Academic Journals

Neurocomputing (NEUCOM), Elsevier

Artificial Intelligence for Transportation (AIT), Elsevier

Engineering Applications of Artificial Intelligence (EAAI), Elsevier

European Journal of Operational Research (EJOR), Elsevier

Transportation Research Part C: Emerging Technologies (TRC), Elsevier

Transportation Research Part E: Logistics and Transportation Review (TRE), Elsevier

Reviewer for Scientific Conferences

Transportation Research Board (TRB) Annual Meeting - 2025

The Conference on Neural Information Processing Systems (NeurIPS) - 2025

The International Conference on Optimization, Modeling, Simulation, and Analytics - 2025

TRC-30: 30th Anniversary of Transportation Research Part C – 2024

Symposium of the European Association for Research in Transportation (hEART) – 2024

Professional Memberships

Sep 2025 – Present IEEE Robotics and Automation Society (IEEE-RAS)

Sep 2025 – Present IEEE Intelligent Transportation Systems Society (IEEE-ITSS)

Sep 2025 – Present IEEE Control Systems Society (IEEE-CSS)

Sep 2025 – Present European Complex Systems Society (ECSS)

Jun 2023 – Present INFORMS – The Institute for Operations Research and the Management Sciences

References

Assoc. Prof. Filipe Rodrigues
Email: rodr@dtu.dk
Relationship: PhD Supervisor

Assoc. Prof. Carlos Lima Azevedo
Email: climaz@dtu.dk
Relationship: PhD Co-supervisor