Quang Nhat Nguyen

Doctor of Philosophy Candidate in Engineering & Information Technology
The University of Melbourne

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The University of Melbourne
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Languages: Vietnamese (native), English (proficient), Japanese (fluent – JLPT N2)

Education

2/2024 – present
Doctor of Philosophy in Engineering and Information Technology
The University of Melbourne, Australia

10/2021 – 9/2023
Master of Engineering in Electrical Engineering and Information Technology
Nagoya University, Japan, First-class Honours (4.0/4)

10/2017 – 9/2021
Bachelor of Engineering in Electrical Engineering, Electronics, and Information Engineering
Nagoya University, Japan, First-class Honours (3.94/4), **Valedictorian**

8/2014 – 5/2017
High School Diploma with specialisation in Mathematics
Le Quy Don High School for Gifted Students, Da Nang City, Vietnam

Research and Development Experience

2/2024 – present
Australian Integrated Multimodal EcoSystem (AIMES) Laboratory – AI & DL Research Group
Faculty of Engineering and Information Technology, **The University of Melbourne**, Australia
Experiences:
 Multimodal Perception Intelligence & Representation Learning *(NLP, 1D time series, 2D image, 3D point cloud),*
 Sequence Modelling & Predictive Intelligence *(State Space Models, Transformers, LLMs, GNNs),*
 Hyper-large-scale AI models *(Distributed training on HPC Linux GPU clusters, Distillation, Transfer Learning)*

4/2020 – 9/2023
Takeda Laboratory – Driving Behaviour and Perceptive Intelligence Research Group
Department of Intelligent Systems, Graduate School of Informatics, **Nagoya University**, Japan
Experiences:
 Intelligent Perception of Autonomous Vehicles *(Semantic segmentation, Object detection, CV deep learning),*
 Multimodal Computer Vision & Deep Learning *(Multimodal mapping, 2D-3D fusion & hyperspectral digital-twin)*

6/2023 – 2/2024
MapIV Inc. (Map for Intelligent Vehicles) – Sensing & Perception Team, Nagoya, Japan
Experiences:
 Intelligent Vehicle Multimodal Perception *(Multimodal segmentation & detection, CUDA kernel optimisation),*
 Perception Sensors Fusion & Calibration *(RGB & thermal cameras and multispectral LiDARs)*

9/2022 – 10/2022
RIKEN Centre for Computational Science (R-CCS) – Data Assimilation Research Group
Japan's National Research and Development Agency (RIKEN), Kobe, Japan
Experiences:
 Advanced Mathematical Analysis, Statistics & Data Assimilation *(Probability theories, Ensemble Kalman methods),*
 High-Performance Computing *(Efficient programming, Large-scale parallel computing on Fugaku supercomputer)*

Professional Experience

5/2024 – present, part-time
The University of Melbourne, AIMES Lab – Research Assistant
Experiences: AI (Deep Learning, Computer Vision), DevOps (AWS, Google Cloud).

6/2023 – 2/2024, part-time
Map IV, Inc., Sensing and Perception Team – Research & Development Software Engineer
Experiences: Perception Intelligence, Sensors Calibration & Fusion, Optimisation with C++ and Python, Containerised GUI app development, Git & other team collaboration tools, Robotics Operating System (ROS).

4/2023 – 9/2023, 11/2021 – 3/2022, part-time
JARI (Japan Automobile Research Institute, Japan Government) – Research Assistant
Experiences: Autonomous driving simulators, Unreal Engine C++ API, Robotics Operating System (ROS).

4/2022 – 3/2023, part-time
NEDO (New Energy & Industrial Technology Dev. Org., Japan Government) – Research Assistant
Experiences: 3D design, CAD structural analysis & assembly of sensors vehicle, ROS & Autoware for sensors control.

9/2022 – 10/2022, internship
RIKEN Centre for Computational Science (Japan Government) – Research Intern
Experiences: Data assimilation, Kalman filter theories, High-performance & parallel programming.

10/2018 – 3/2021, part-time
Nagoya University – Tutor
Courses: Mathematics for Machine Learning, Graph Theory, Calculus I, Differential Geometry.

Publications

Mamba-Byte-Traffic: Token-Free Byte-Level Traffic Flow Prediction with State-Space Model
Quang Nhat Nguyen, Majid Sarvi, and Saeed Asadi Bagloee
2025 IEEE International Conference on Intelligent Transportation System (ITSC)

Physics-based LiDAR waveform simulation method for realism improvement of simulators
Quang Nhat Nguyen, Alexander Carballo, and Kazuya Takeda
2021 International Symposium on Future Active Safety Technology toward zero-traffic-accident (FAST-zero)

On radial Schrödinger operators with a Coulomb potential: general boundary conditions
Jan Dereziński, Jérémy Faupin, Quang Nhat Nguyen, and Serge Richard
Advances in Operator Theory 5, pp. 1132 – 1192, July 2020, DOI: [10.1007/s43036-020-00082-6](10.1007/s43036-020-00082-6)

Honours & Awards

Melbourne Plus: People Leadership & Innovation
5-6/2025, awarded by The University of Melbourne, credentials: People Leadership, Innovation

Valedictorian of Nagoya University School of Engineering
9/2021, honoured by Nagoya University.

Outstanding Presentation Award
7/2022, awarded by Nagoya University for master's research presentation.

IBM Quantum Computing Challenge Completion
Awarded by **IBM**, credential: https://www.credly.com/badges/918c0976-1f83-4f02-9b88-a5f5afd02e87/public_url

Scholarships

Melbourne Graduate Research Scholarship
2/2024 – present, total award (projected): AUD $400,000, awarded by the University of Melbourne.

Japan Government's MEXT Scholarships
10/2017 – 9/2021 & 10/2021 – 9/2023, total award: JPY ¥12.6 million, awarded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) – Government of Japan.