Quang Nhat Nguyen

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

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Languages: Vietnamese (native), English (proficient), Japanese (fluent – JLPT N2)

Research Topic

Deep Learning in Transportation Science: develop and enhance Large Language Models, Graph Neural Networks, and Perception Transformers for the analysis of sequential multi-modal driving datasets towards a safe and sustainable intelligent transportation system.

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
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 Group

2/2024 – present
Australian Integrated Multimodal EcoSystem (AIMES) Laboratory
Deep Learning & AI Team
Faculty of Engineering and Information Technology, The University of Melbourne

4/2020 – 9/2023
Takeda Laboratory
Driving Behaviour and Perception Research Group
Department of Intelligent Systems, Graduate School of Informatics, Nagoya University

Research experiences:

Deep Learning *(Large Language Models, Transformers, State Space Models, Graph Neural Networks)*
Intelligent Perception of Autonomous Vehicles *(Semantic segmentation, Object detection, CV deep learning)*,
Sensors Calibration & Fusion *(Optimisation, 3D mapping, 3D digital-twin reconstruction)*,
Physics-based Simulation for Autonomous Driving *(LiDAR intensity simulation, Hyperspectral digital twin)*

Professional Experience

5/2024 – present, part-time

Research and Development Engineer at **The University of Melbourne**, AIMES Lab

Experiences: AI (Deep Learning, Computer Vision), DevOps (AWS, Google Cloud)

6/2023 – 2/2024, part-time

Research and Development Engineer at **Map IV, Inc.**, Sensing and Perception Team

Experiences: Perceptive Intelligence, Sensors Calibration & Fusion, Optimisation with C++ and Python, Containerised GUI app development, Git & other team collaboration tools.

4/2023 – 9/2023, 11/2021 – 3/2022, part-time

Research Assistant at **JARI** (Japan Automobile Research Institute – Japan Government)

Experiences: Autonomous driving simulators, Unreal Engine C++ API.

4/2022 – 3/2023, part-time

Research Assistant at **NEDO** (Japan Government)

Experiences: Assembling perception for instrumented vehicle, Autoware for sensors control.

9/2022, internship

Research Intern at **RIKEN Centre for Computational Science**, Data Assimilation Research Group

Experiences: Data Assimilation, Kalman Filter Techniques, High-Performance & Parallel Programming.

10/2018 – 3/2021, part-time

Tutor at **Nagoya University**

Courses: Mathematics for Machine Learning, Graph Theory, Calculus I, Differential Geometry

Publications

Physics-based LiDAR waveform simulation method for realism improvement of driving simulators

Quang Nhat Nguyen, Alexander Carballo, and Kazuya Takeda
International Symposium on Future Active Safety Technology toward zero-traffic-accident (FAST-zero), September 2021

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

Honours & Awards

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.

Scholarships

Melbourne Graduate Research Scholarship

2/2024 – present, total award (projected): AUD $370,000, awarded by the University of Melbourne.

Japan Government's MEXT Scholarship

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

Certificates

Quantum Computing

IBM Quantum Challenge Certificate of Achievement

Issued by **IBM**, credential ID: https://www.credly.com/badges/918c0976-1f83-4f02-9b88-a5f5afd02e87/public_url