

Nhat-Minh Le-Phan

Born: 05 Sep 1999, Nghean, Vietnam

PhD student, School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
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Nhat-Minh Le-Phan

RESEARCH INTERESTS

Multi-agent Control, Intelligent Control, Resilient Control, Nonlinear Control, Missile Guidance and Control , ...

EDUCATION

Nanyang Technological University, Singapore

August 2025 —

PhD Student in Control Theory, School of Electrical and Electronic Engineering

Supervisor: Prof. Lihua Xie

Hanoi University of Science and Technology, Hanoi, Vietnam

July 2022 — Oct 2024

Master of Science in Control and Automation Engineering

Cumulative GPA: 3.95/4.00

Thesis Title: Randomized Matrix Weighted Consensus and Its Applications

Valedictorian

Thesis Grade: 10/10

Supervisor: Prof. Phuoc Doan Nguyen

Hanoi University of Science and Technology, Hanoi, Vietnam

August 2017 — May 2022

Bachelor of Science: Control and Automation Engineering

Cumulative GPA: 3.88/4.00

Ranked 1st in Vietnam in Electrical and Electronic Engineering by QS Rankings.

Valedictorian, rank: 01/496

Supervisor: Assoc. Prof. Nga Thi-Thuy Vu

Phan Boi Chau High School for the Gifted, Nghean, Vietnam

August 2014 — July 2017

Major in Chemistry

EXPERIENCES

Hanoi University of Science and Technology (HUST)

Hanoi, Vietnam

Faculty at Department of Automation Engineering

August 2024 — Present

- Member of Multi-agent control system laboratory
- Teaching assistant for undergraduate-level courses

Viettel Aerospace Institute (VTX)

Hanoi, Vietnam

Guidance and Control Engineer

July 2022 — August 2024

- Member of Control technologies department
- Organize lectures on advanced control theory for flight vehicles
- Design and develop advanced nonlinear/robust/adaptive/intelligent controllers for flight vehicles
- Design and develop advanced guidance algorithms for flight vehicles

Research and Development in Control Systems Laboratory, HUST

Hanoi, Vietnam

Student Member

2019 — 2022

- Design nonlinear control algorithms for Wind Energy Control Systems
- Design nonlinear control algorithms for Robotic Control Systems

PROJECTS

Design a reinforcement learning based adaptive tuning law for the Three-loop Autopilot controller

VTX (signed an NDA)

Guidance and Control Engineer

December 2023 — August 2024

- Apply the DDPG algorithm to the framework of Three-loop Autopilot controller
- Design the training scenario and hyperparameter tuning
- Evaluate the performance of the proposed algorithm with traditional gain-scheduling method using Monte Carlo technique.

Design adaptive controllers for the roll stabilization problem of flight vehicles

VTX (signed an NDA)

Guidance and Control Engineer

July 2022 — July 2023

- Research on flight dynamics and modeling methods for flying vehicles
- Design an adaptive controller for the roll stabilization problem of flight vehicles
- Evaluate the performance of the proposed algorithm with traditional controllers using Monte Carlo technique.

PUBLICATIONS

Journal paper

Published

- **Nhat-Minh Le-Phan**, Phuoc Doan Nguyen, Hyo-Sung Ahn, Minh Hoang Trinh*, "Bearing-Only Solution for Fermat-Weber Location Problem: Generalized Algorithms", *Automatica*, Volume 176, 2025, 112242, ISSN 0005-1098, doi: 10.1016/j.automatica.2025.112242.
- Minh Hoang Trinh*, Hoang Huy Vu, **Nhat-Minh Le-Phan**, Quyen Ngoc Nguyen, "Matrix-Scaled Consensus over Undirected Networks," in *IEEE Transactions on Network Science and Engineering*, doi: 10.1109/TNSE.2024.3471710.
- **Nhat-Minh Le-Phan**, Minh Hoang Trinh*, and P. D. Nguyen, "Randomized Matrix Weighted Consensus," in *IEEE Transactions on Network Science and Engineering (SCIE Q1)*, vol. 11, no. 4, pp. 3536-3549, July-Aug. 2024, doi: 10.1109/TNSE.2024.3376643.
- **Nhat-Minh Le-Phan***, D. L. Dinh, A. N. D. Duc and N. P. Van, "Inverse Optimal-Based Attitude Control for Fixed-Wing Unmanned Aerial Vehicles," in *IEEE Access (SCIE Q1)*, vol. 11, pp. 52996-53005, 2023, doi: 10.1109/ACCESS.2023.3280424.
- **Nhat-Minh Le-Phan**, Duong-Nguyen Tung, Tung-Nguyen Thanh, Nga Thi-Thuy Vu* "ANFIS wind speed estimator based output feedback near-optimal MPPT control for PMSG wind turbine", *Journal of Control, Automation, and Electrical System (ISI Q2)*, doi: 10.1007/s40313-022-00980-5

Submitted/Preprints

- Minh Hoang Trinh, **Nhat-Minh Le-Phan** and Hyo-Sung Ahn, "The networked input-output economic problem", arxiv, doi: 2412.13564
- Duong Tuan Nguyen, **Nhat-Minh Le-Phan** and Nga Thi-Thuy Vu, "Improve Performance Of Proton Exchange Membrane Fuel Cells Via Deep Q-Network"
- Cuong M. Nguyen, **Nhat-Minh Le-Phan** and Nam H. Nguyen, "Robust UAV formation control with collision avoidance via predefined-time attitude control and state observer"
- Tat-Thang Nguyen, **Nhat-Minh Le-Phan** and Nga Thi-Thuy Vu, "Direct Data-Driven H_∞ Missile Autopilot Design via Q-Learning"

Conference Papers

Published

- **Nhat-Minh Le-Phan**, Minh Hoang Trinh*, Phuoc Doan Nguyen, "Dimensional lifting, finite time convergence, and bearing-only solutions to the Fermat-Weber Location Problem," *Proc. of the 12th International Conference on Control, Automation and Information Sciences (ICCAIS)*, Hanoi, Vietnam, 2023.
- **Nhat-Minh Le-Phan**, Minh Hoang Trinh*, Phuoc Doan Nguyen, "Bearing-Based Network Localization Under Gossip Protocol," **Oral presentation** at 12th International Conference on Control, Automation and Information Sciences (ICCAIS), Hanoi, Vietnam, 2023.

Domestic Journal/Conference Paper

Published

- Dung Van Vu, Hieu Minh Vu, **Nhat-Minh Le-Phan**, Hieu Minh Nguyen, Tuynh Van Pham, Minh Hoang Trinh*, "Control of double-integrator systems without velocity measurements and application of matrix-scaled consensus problem," *Proc. of the 7th Vietnam International Conference and Exhibition on Control and Automation (VCCA)*, Hai Phong, Vietnam.
- **Nhat-Minh Le-Phan**, Tung Thanh Nguyen, Duong Tung Nguyen, Nga Thi-Thuy Vu*, "Output Feedback Adaptive Pitch Angle Control for Variable Speed Wind Turbine," *Journal of Science and Technology: Smart Systems and Devices*, 2023.

ACADEMIC SERVICE

Technical reviewer

Journals: *Automatica*, *IEEE Transactions on Network Science and Engineering*, *IEEE Control System Letter*.

Conference: American Control Conference (2025).

SELECTED COURSES

Graduate Level Courses

- Control of Multi-agent systems
- Analysis and Control of Nonlinear Systems
- Reinforcement Learning Based Control
- Optimal Control
- Advanced Process Control
- Convex Optimization
- Robotic and Intelligent Sensors

Bachelor's Courses

- Linear Algebra
- Calculus
- Probability and Statistic
- Linear Control Theory
- Nonlinear Control
- Networked Control
- Control of Mechatronic Systems
- Process Control
- Fundamental of Neural Network and Fuzzy System

SCHOLARSHIPS/AWARDS

NTU PhD Research Scholarship

Full tuition fee waiver and a monthly stipend.

NTU, Singapore
2025-2029

Viettel excellence scholarship

Full Master's Scholarship awarded in recognition of outstanding academic achievement as a master's student.

HUST, Hanoi, Vietnam
2024

Student Scientific Research

Received the third prize for the topic: Application of near-infrared spectral and machine learning methods to sugar quality management

HUST, Hanoi, Vietnam
2022

Academic Incentive Scholarship

Tuition support for undergraduate students with excellent academic performance.

HUST, Hanoi, Vietnam
2020,2021

REFERENCES

Lihua Xie

Fellow of IEEE, Fellow of IFAC, Full Professor, Nanyang Technological University, Singapore

Vice-President of IEEE Control System Society

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Scholar Profiles: Personal Page — Google Scholar

Minh Hoang Trinh, PhD

Lecturer, AI Department, FPT University, Quynhon, Binh Dinh, Vietnam

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Scholar Profiles: Personal Page — Google Scholar — LinkedIn

Phuoc Doan Nguyen

Full Professor

Department of Automation, Hanoi University of Science and Technology, Hanoi, Vietnam

Member of The State Council for Professor of Vietnam

E-mail: phuoc.nguyendoan@hust.edu.vn

Scholar Profiles: Google Scholar