

# Duc-Cuong VU, BSc.

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## Education

### Master of Science in Automation and Control (Jul 2024 - present)

School of Electrical - Electronics Engineering,  
Hanoi University of Science and Technology (HUST), Hanoi, Vietnam

- **Research project:** Design control structures for Parallel Platforms in Maritime applications
- **Funded by:** Master, PhD Scholarship Programme of Vingroup Innovation Foundation (VINIF)

### Bachelor of Science in Automation and Control (Oct 2020 - Mar 2024)

School of Electrical - Electronics Engineering,  
Hanoi University of Science and Technology (HUST), Hanoi, Vietnam

- **Excellent degree,** GPA: 3.71/4. Finished the 4-year BSc program in **just 3.5 years**.
- **Ranking:** 22/499 in the same cohort.
- **Bachelor Thesis:** Balancing, motion planning, and tracking control for ballbot systems [[pdf](#)].  
Thesis score: 9.9/10 - The best thesis defense

## Work experience

### Research Assistant (Oct 2021 - present)

The Mechatronics Engineering Group,  
School of Electrical - Electronic Engineering,  
Hanoi University of Science and Technology (HUST), Hanoi, Vietnam

- **Research topics:** Automation, Control Design, Robotics, Multi-agent Systems, Modeling and Simulation, Experiment systems.
- **Supervisor:** [Assoc.Prof.PhD. Tung Lam Nguyen](#) ([lam.nguyentung \[at\] hust.edu.com](mailto:lam.nguyentung@hust.edu.com)).
- **Skills acquired:** hardware design, numerical simulation and modeling, analysis, and interpretation of results, study conception, and design, draft manuscript preparation, ...

## Projects

### Member/Researcher (Mar 2025 - Dec 2025)

Advanced Control of a Ship-Mounted Stewart Platform for Marine Applications

- Field: Marine Robotics and Control Systems.
- International Collaboration of Korea Institute of Science and Technology and Institute for Control Engineering and Automation (HUST).
- Supervisors: [PhD. Minh Nhat Vu](#) and [Assoc.Prof.PhD. Tung Lam Nguyen](#)

### Member/Researcher (Jan 2025 - Dec 2027)

Robot navigation system integrating sensor network and wireless communication

- Field: Robotics and Control systems.
- Funded by Hanoi University of Science and Technology.
- Supervisors: [PhD. Chinh Hoang Duc](#) and [Assoc.Prof.PhD. Tung Lam Nguyen](#).

# Selected publications

**Journal** Ocean Engineering (SCIE Q1) (2025)  
Lagrangian-based modeling and safety-critical controls for Stewart platforms under marine operations  
**Duc Cuong Vu**, Danh Huy Nguyen, Minh Nhat Vu, and Tung Lam Nguyen  
DOI: [10.1016/j.oceaneng.2025.122142](https://doi.org/10.1016/j.oceaneng.2025.122142)

**Journal** IEEE Access (SCIE Q2) (2025)  
CBFs-based Model Predictive Control for Obstacle Avoidance with Tilt Angle Limitation for Ball-Balancing Robots  
Minh Duc Pham, **Duc Cuong Vu**, Thi Thuy Hang Nguyen, Thi Van Anh Nguyen, Minh Nhat Vu, and Tung Lam Nguyen  
DOI: [10.1109/ACCESS.2025.3567474](https://doi.org/10.1109/ACCESS.2025.3567474)

**Journal** Results in Engineering (ESCI Q1) (2025)  
A novel approach of Consensus-based Finite-time Distributed Sliding Mode Control for Stewart platform manipulators motion tracking  
**Duc Cuong Vu**, Danh Huy Nguyen, and Tung Lam Nguyen  
DOI: [10.1016/j.rineng.2024.103872](https://doi.org/10.1016/j.rineng.2024.103872)

**Journal** International Journal of Robust and Nonlinear Control (SCIE Q1) (2024)  
Time-optimal trajectory generation and observer-based hierarchical sliding mode control for ballbots with system constraints  
**Duc Cuong Vu**, Minh Duc Pham, Thi Thuy Hang Nguyen, Thi Van Anh Nguyen, and Tung Lam Nguyen  
DOI: [10.1002/rnc.7358](https://doi.org/10.1002/rnc.7358)

# Academic activities

**Invited review for**  
*Nonlinear Dynamics (this is my first time as a reviewer)*

**Seminars and Talks**  
2025: Talk "MuJoCo for Advanced Physics Simulation: From manipulators to autonomous vehicles" for "Motion Control" master course at HUST and MoCAR seminar

# Conferences

**IEEE 12th International Conference on Control, Automation and Information Sciences (IEEE ICCAIS 2023)**  
*Hanoi, Vietnam*

**2024 International Conference on Advanced Technologies for Communications (IEEE ATC2024)**  
*Ho Chi Minh City, Vietnam*

**International Conference on Intelligent Systems and Networks (Springer ICISN 2023)**  
*Hanoi, Vietnam*

# Honours & awards

**Master, PhD Scholarship Programme**  
Vingroup Innovation Foundation (VINIF)

**Best Thesis Defense Award**  
Hanoi University of Science and Technology