

Duong Thi Thuy Ngan

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Research Interests

- Optimization and reinforcement learning
- Deep learning
- Multi-agent system

Education

Ulsan National Institute of Science and Technology (UNIST), South Korea Aug 2023 – Now
Master in Electrical Engineering

- GPA: 3.81/4.3
- **Courses:** Convex optimization, Linear system theory, Computational geometry, AI Toolkits, AI-based HRI, etc.
- **Thesis topic:** The flying sidekick traveling salesman problem with reinforcement learning approach.

VNU University Engineering and Technology (VNU-UET), Vietnam Aug 2018 – Jul 2022
BE in Robotics Engineering

- GPA: 3.3/4.0
- **Thesis title:** Enhance Multi-Objective Particle Swarm Optimization algorithm for UAV Path planning.

Experience

Master student, Robotics & Mobility Lab, UNIST Aug 2023 – Now
Ulsan, South Korea

- Study optimization-based and RL-based for the vehicle routing problem
- Develop multi-robot planning algorithm with dynamic environments and physical constraints
- Develop algorithm under different network types: centralized and decentralized

C++ Software Engineer, FPT Software Jan 2023 – Jul 2023
Hanoi, Vietnam

- Joined the C++ training program for software engineer
- Developed software embedded in car monitors using Qt and C++.

Undergraduate Research Intern, Faculty of Electronics and Oct 2020 – Jul 2022
Telecommunications, VNU-UET
Hanoi, Vietnam

- Modeled the UAV path planning problem with kinematic constraints
- Implemented heuristics algorithms for optimization, multi-objective optimization problems
- Studied mobile robot control and path planning

Skills


Languages: English: IELTS Academic 7.0 (Listening: 6.5, Reading: 8.5, Writing: 6.5, Speaking: 6.0)


Programming languages: Python, C++, MATLAB

Tools & Frameworks : ROS2, Git, PyTorch, Latex

Publications

Duong, T.T.N., Bui, DN. & Phung, M.D. "Navigation Variable-based Multi-objective Particle Swarm Optimization for UAV Path Planning with Kinematic Constraints". *Neural Computing and Applications* (2025). 

D.N. Bui, T.N. Duong, M.D. Phung. "Ant colony optimization for cooperative inspection path planning using multiple unmanned aerial vehicles". *2024 IEEE/SICE International Symposium on System Integration (SII)*, Ha Long, Vietnam, 2024. 

N. Duong Thi Thuy, D. Nam Bui, M. Duong Phung and H. Pham Duy, "Deployment of UAVs for Optimal Multihop Ad-hoc Networks Using Particle Swarm Optimization and Behavior-based Control". *2022 11th International Conference on Control, Automation and Information Sciences (ICCAIS)*, Hanoi, Vietnam, 2022. 

Poster presentation

T.T.N. Duong, J. Lee, J.H. Jeon. "Cooperative mission planning for heterogeneous robots with energy constraint". *The 12th International Conference on Robot Intelligence Technology and Applications (RiTA)*, Ulsan, South Korea, 2024. 

Teaching assistant

Electrical Engineering Programming, UNIST

2024 Spring semester

Honors and Awards

Scholarship for Master's Student at UNIST

2023-2025

Fully funded by the Korean government, covering tuition fees and providing monthly stipends.

The Student Research Contest - VNU-UET

2020

The second prize

Referees

Asst. Prof. Dr. Jeong Hwan Jeon

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