

Ngoc Hung Nguyen

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RESEARCH INTERESTS

Edge and Networked Systems: Mobile edge computing, cloud/edge computing, IoT, XR systems, deadline-aware task offloading and scheduling

AI for Systems and Networking: Machine learning, deep learning, and deep reinforcement learning for resource allocation, optimization, and intelligent control

Algorithms and Optimization: Greedy methods, graph-based algorithms, metaheuristics, and evolutionary computation

EDUCATION

- **Lund University** Period: 2025 – 2029
Ph.D. studies in Electrical and Information Technology
Research topic: Algorithms for XR in 6G networks
Supervisor: Professor Björn Landfeldt, Ph.D.
Lund, Sweden
- **Hanyang University** 09/2021 – 02/2024
M.Sc. in Electrical and Electronic Engineering
Thesis: *Offloading under Hard Deadline Constraints in Mobile Edge Computing*
Supervisor: Professor Sang-Woon Jeon, Ph.D.
Ansan, South Korea
- **Hanoi University of Science and Technology** 09/2013 – 08/2018
Bachelor Degree in Engineering
Thesis: *Applied Numerical Methods in Chemical Engineering*
Supervisors: Professor Nguyen Dang Binh Thanh, Ph.D.; Professor Bui Minh Dinh, Ph.D.
Hanoi, Vietnam

ACADEMIC AND PROFESSIONAL EXPERIENCE

- **Phenikaa University** 2025 – Present
Researcher and Lecturer (currently on temporary leave)
Hanoi, Vietnam
 - Taught undergraduate courses in *Cloud Computing*, *Computer Architecture*, and *Data Processing with Python*.
 - Supervised and conducted research with students in the ICNL Lab.
 - Contributed to research activities in networked systems, optimization, and applied AI.
- **VinUniversity** 03/2024 – Present
Research Assistant
Hanoi, Vietnam
 - Conducted research on intelligent transportation systems using metaheuristics and deep reinforcement learning.
 - Investigated AI- and IoT-enabled solutions for aquaculture and smart monitoring applications.
 - Collaborated on interdisciplinary projects at the intersection of optimization, intelligent control, and cyber-physical systems.
- **FPT Software** 01/2024 – 12/2024
Senior AI Engineer
Hanoi, Vietnam
 - Applied model quantization techniques to image classification and object detection systems, including ResNet, SSD-ResNet, and DETR-based models.
 - Developed quantized inference pipelines using QAT, PTQ, and TVM-based CPU deployment frameworks.
 - Performed benchmarking and performance analysis of AI models with respect to latency, efficiency, and deployment feasibility.
- **Hanyang University** 09/2021 – 02/2024
Research Assistant
Ansan, South Korea
 - Conducted research in wireless communications and mobile edge computing.
 - Applied deep learning and reinforcement learning to optimization problems in task offloading and scheduling.
 - Designed algorithmic solutions based on greedy methods and learning-based approaches for resource allocation in MEC systems.
- **LG Electronics** 10/2018 – 07/2021
Senior Embedded Engineer
Hanoi, Vietnam
 - Developed Wi-Fi middleware as part of the Wi-Fi core framework for embedded platforms.
 - Implemented SPI middleware components and supporting modules for device-level integration.
 - Performed unit testing using the Google Test framework and developed internal tools for automated unit test generation in C/C++.
 - Built software tools for testing and performance analysis using Qt Creator on Windows.
 - Conducted research and software development for camera sharpness evaluation, autofocus, and low-contrast brightness enhancement.

HONORS AND AWARDS

- **Third Prize – Student Research Award**
Hanoi University of Science and Technology

Hanoi, Vietnam
2017 – 2018

SKILLS

- **Programming:** Python, C/C++, CUDA C++, MATLAB
- **Machine Learning and Data Science:** PyTorch, TensorFlow, NumPy, Pandas
- **Research and Technical Areas:** Mathematical modeling, numerical methods, optimization, mobile edge computing, AI/ML, reinforcement learning, deep reinforcement learning
- **Languages:** Vietnamese (native), English (fluent)

ACADEMIC SERVICES

- **Journal Reviewer:** *IEEE Internet of Things Journal*, *IEEE Communications Letters*, *IEEE Transactions on Intelligent Transportation Systems*, and *Computer Communications*

PATENTS AND PUBLICATIONS

C = CONFERENCE J = JOURNAL P = PATENT S = SUBMITTED T = THESIS

Research profiles:

- Google Scholar: scholar.google.com/citations?user=uOr3eosAAAAJ
- ORCID: orcid.org/0009-0007-7363-5014
- ResearchGate: researchgate.net/profile/Nguyen-Hung-120

- [J.1] **Ngoc Hung Nguyen**, Nguyen Van Thieu, Senura H. Wanasekara, Van-Dinh Nguyen, Quang-Trung Luu, Nguyen Cong Luong, and Anh Tuan Nguyen, "**Oranits: Autonomous Control and Task Allocation in ITS Integrating MEC and Open RAN using Metaheuristic and Deep Reinforcement Learning**," *IEEE Transactions on Intelligent Transportation Systems*, 2026, DOI: [10.1109/TITS.2026.3705751](https://doi.org/10.1109/TITS.2026.3705751).
- [s.1] **Ngoc Hung Nguyen**, Van Thieu Nguyen, and Bjorn Landfeldt. "MoRo: Mobility-Aware Robot Mission Orchestration under Computation-Induced Motion Degradation." Submitted to Proceedings of the IEEE International Conference on Computer Communications (INFOCOM).
- [s.2] **Ngoc Hung Nguyen** and Bjorn Landfeldt. "Learning-Based Collaborative MEC for LLM Inference with Soft-Deadline Awareness via Transformer-Enhanced PPO." Submitted to Proceedings of the IEEE Global Communications Conference (GLOBECOM).
- [c.1] **Ngoc Hung Nguyen**, Van Thieu Nguyen, Quang-Trung Luu, Phi Son Vo, and Van-Dinh Nguyen. "**A Metaheuristic Approach for Mission Assignment and Task Offloading in Open RAN-Enabled Intelligent Transport Systems**," in Proceedings of the IEEE Global Communications Conference (GLOBECOM), Taipei, Taiwan. IEEE, 2025.
- [S.3] Vo Phi Son, Van-Dinh Nguyen, *Ngoc Hung Nguyen*, Trinh Van Chien and Symeon Chatzinotas, "**Multi-Timescale Latent-Action DRL for Joint Optimization in Edge-Cloud Networks**," submitted to *IEEE Transactions on Cloud Computing*, 2026 (under review).
- [S.4] Kim-Hoan Do, Quang-Trung Luu, **Ngoc Hung Nguyen**, Tai-Hung Nguyen, Huu-Thanh Nguyen, and Van-Dinh Nguyen, "**Topology-Aware Network Slicing in Open RAN via Graph-based Proximal Policy Optimization**," submitted to *IEEE Internet of Things Journal*, 2026 (under review).
- [S.5] Nguyen Cong Luong, Shaohan Feng Nguyen Duc Hai, Zeping Sui, Bo Ma, Min Xu, Zhihao Dong,, Qiushi Zhao , Nguyen Duc Duy Anh, Nguyen Quoc Khanh, **Ngoc Hung Nguyen**, Zitian Zhan, Ping Wang and Jie Cao, "**Transformer-Enhanced Reinforcement Learning: Fundamentals and Applications in Communication Networks**," submitted to *IEEE Communications Surveys & Tutorials*, 2026 (under review).
- [J.2] Tran Cong Dao, Nguyen Cong Luong, **Ngoc Hung Nguyen**, Xingwang Li, Dusit Niyato, and Dong In Kim, "**Multi-Hop Routing for IoT-Based Digital Twin: Novel Metaheuristic Approaches**," *IEEE Internet of Things Journal*, vol. 12, no. 15, pp. 30493–30506, Aug. 1, 2025.
- [J.3] Hiep Dao Quang, Nguyen Cong Luong, Shimin Gong, Xingwang Li, **Ngoc Hung Nguyen**, Dusit Niyato, and Dong In Kim, "**Dynamic Multi-layer Aerial System for Latent Diffusion-Based Generative AI Inference at the Edge**," *IEEE Transactions on Communications*, early access / accepted.
- [J.4] **Ngoc Hung Nguyen**, Van-Dinh Nguyen, Anh Tuan Nguyen, Nguyen Van Thieu, Hoang Nam Nguyen, and Symeon Chatzinotas, "**Deadline-Aware Joint Task Scheduling and Offloading in Mobile Edge Computing Systems**," *IEEE Internet of Things Journal*, vol. 11, no. 23, pp. 33282–33295, Oct. 2024.
- [J.5] Nguyen Van Thieu, **Ngoc Hung Nguyen**, and Ali Asghar Heidari, "**Feature Selection Using Metaheuristics Made Easy: Open-Source MAFESE Library in Python**," *Future Generation Computer Systems*, vol. 152, pp. 340–358, 2024.

- [J.6] Nguyen Van Thieu, **Ngoc Hung Nguyen**, Mohsen Sherif, Ahmed El-Shafie, and Ali Najah Ahmed, “**Integrated Metaheuristic Algorithms with Extreme Learning Machine Models for River Streamflow Prediction**,” *Scientific Reports*, vol. 14, 2024.
- [T.1] **Ngoc Hung Nguyen**, “**Offloading under Hard Deadline Constraints in Mobile Edge Computing**,” M.Sc. Thesis, Hanyang University, 2024.
- [P.1] **Ngoc Hung Nguyen**, Sang-Woon Jeon, and Kangyu Gao, “**Job Scheduling with Deadline Constraints**,” Patent No. 10-2023-0035648, Mar. 20, 2023.
- [C.2] Senura Hansaja Wanasekara, Han Huy Dung, **Ngoc Hung Nguyen**, and Van-Dinh Nguyen, “**Lossy Compression of Multi-channel EEG and PPG Signals Based on Golomb-Rice Coding with Parameter Estimation**,” in *Proceedings of the International Conference on Advanced Technologies for Communications (ATC)*, 2024.

REFERENCES

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Trinity College Dublin
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