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

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, Vietnam*
  Hanoi University of Science and Technology 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

[S.1] **Ngoc Hung Nguyen**, Nguyen Van Thieu, Senura H. Wanasekara, Van-Dinh Nguyen, Quang-Trung Luu, Nguyen Cong Luong, and Anh Tuan Nguyen, "**ORAN-ITS: Autonomous Control and Task Allocation in Intelligent Transportation Systems Integrating MEC and Open RAN Using Metaheuristics and Deep Reinforcement Learning**," submitted to *IEEE Transactions on Intelligent Transportation Systems*, 2025 (under review).

[C.1] **Ngoc Hung Nguyen**, Nguyen Van Thieu, Quang-Trung Luu, Phi Son Vo, and Van-Dinh Nguyen, "**A Metaheuristic Approach for Mission Assignment and Task Offloading in Open RAN-Enabled Intelligent Transportation Systems**," in *Proceedings of the IEEE Global Communications Conference (GLOBECOM)*, Taipei, Taiwan, 2025.

[J.1] 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.2] 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.3] **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.4] 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.5] 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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