# Nguyen Nang Hung

*Suitor of Reasons*

Nguyennanghung20@gmail.com (JP) +81-80-1385-9065 github.com/HungNguyen20

## Education

October 2025 – Now

[*Master Student*] **The University of Tokyo (UTokyo)**
*Computer Science*
- Supervised by Prof. Masashi Sugiyama at Sugiyama-Yokoya-Ishida Lab
- At Department of Complexity Science and Engineering, the Graduate School of Frontier Sciences (GSFS), Kashiwa Campus

Aug 2018 – Sep 2023

[*Engineer, Graduated*] **Hanoi University of Science and Technology (HUST)**
*Computer Science*
- The School of Information Communication and Technology (SoICT)
- Higher Education Development Support Project on ICT for Japan (HEDSPI)
- GPA: 4.0/4.0; CPA: 3.58/4.0

## Publications

### Transaction Papers

1. **Nang Hung Nguyen** and Phi Le Nguyen and Thao Nguyen Truong and Trong Nghia Hoang and Masashi Sugiyama, **Causal Graph Learning via Distributional Invariance of Cause-Effect Relationships**, in Transactions on Machine Learning Research (TMLR), ISSN 2835-8856, January 2026. [Paper, Code]
2. **Nang Hung Nguyen**, Truong Thao Nguyen, Trong Nghia Hoang, Huy Hieu Pham, Thanh Hung Nguyen and Phi Le Nguyen, **SAFA: Handling Sparse and Scarce Data in Federated Learning With Accumulative Learning**, in IEEE Transactions on Computers, vol. 74, no. 6, pp. 1844-1856, June 2025, doi: 10.1109/TC.2025.3543682. [Paper, Code]
3. Phi Le Nguyen, **Nang Hung Nguyen**, Tuan Anh Nguyen Dinh, Khanh Le, Thanh Hung Nguyen and Kien Nguyen, **QIH: An Efficient Q-Learning Inspired Hole-Bypassing Routing Protocol for WSNs**, in IEEE Access, vol. 9, pp. 123414-123429, 2021, doi: 10.1109/ACCESS.2021.3108156. [Paper]

### Conference Papers

1. **Nguyen Nang Hung**, Phi Le Nguyen, Nguyen Trong Bang, Nguyen Duc Long, Thao Nguyen Truong, Huy Hieu Pham, **CADIS: Handling Cluster-skewed Non-IID Data in Federated Learning with Clustered Aggregation and Knowledge DIStilled Regularization**, the 23rd International Symposium on Cluster, Cloud and Internet Computing (*CCGRID'23*), Bangalore, India, 2023, pp. 249-261, doi: 10.1109/CCGrid.57682.2023.00032. [Paper, Code]
2. **Nang Hung Nguyen**, Phi Le Nguyen, Thuy Dung Nguyen, Trung Thanh Nguyen, Duc Long Nguyen, Thanh Hung Nguyen, Huy Hieu Pham and Truong Thao Nguyen, **FedDRL: Deep Reinforcement Learing-based Federated Learning for Real-World Non-IID Data**, 2022 International Conference on Parallel Processing (*ICPP'22*), pp. 1-11, August 2022, doi: 10.1145/3545008.3545085. [Paper]
3. Hieu Dinh and **Nguyen Nang Hung** and Trung Thanh Nguyen and Thanh-Hung Nguyen and Truong Thao Nguyen and Phi Le Nguyen, **Deep Reinforcement Learning-based Offloading for Latency Minimization in 3-tier V2X Networks**, the 2022 IEEE Wireless Communications and Networking Conference (*WCNC'22*), Austin, TX, USA, 2022, pp. 1803-1808, doi: 10.1109/WCNC.51071.2022.9771583. [Paper]

## Fields of interest

1. Causal Learning, Graph Structure Learning
2. Statistical Analysis, Density Estimation
3. Representation Learning
4. Distributed optimization in federated systems

## Research Experience and Projects

October 2025 - Now

**MSLab, the Graduate School of Frontier Sciences (GSFS), UTokyo**
***Master Student***: Study the complexity of causal discovery in large-scale scenarios and deep representation spaces.

- Supervisor: Prof. Masashi Sugiyama
- Co-superviors: Prof. Phi Le Nguyen, Dr. Thao Nguyen Truong, Dr. Hoang Trong Nghia
- Description: Causal variables are often hidden in observational systems. In this study, I want to reveal their true selves by delving into their representations in latent spaces.
- Skills: Statistical modeling and learning, Representation learning, Complexity analysis.

April 2024 - September 2025

**MSLab, the School of Information Science and Technology (IST), UTokyo**
***Research Student***: Develop and enhance causality-aware mechanisms in machine learning and deep learning models.

- Supervisor: Prof. Masashi Sugiyama
- Co-superviors: Prof. Phi Le Nguyen, Dr. Thao Nguyen Truong, Dr. Hoang Trong Nghia
- Description: Investigate and develop algorithms to uncover the graph structure given the observational data. The graph type of interest is the Directed Acyclic Graphs (DAGs).
- Skills: Statistical modeling and learning, Machine learning theory.

Jun 2021 - April 2024

**VinUni-Illinois Smart Health Center (VISHC), VinUniversity**
***Research Assistant - VAIPE project***: AI-assisted IoT-enabled smart, optimal, and Protective healthcare monitoring and supporting system for Vietnamese.

- Supervisor: Prof. Phi Le Nguyen and Dr. Pham Huy Hieu
- Description: Investigating and proposing new Federated Learning models, especially for non-iid real world data (e.g. pill data).
- Skills: Distributed simulation design and implementation in Python, Multivariate optimization, Federated learning, Deep learning, Reinforcement learning, Theoretical analysis on the performance of deep learning and federated learning models.

July 2019 - April 2024

**Intelligent Communication Networks research group at BKAI center, HUST**
***Research Assistant - Routing Protocols in WSNs***

- Supervisor: Prof. Phi Le Nguyen and Dr. Thanh Hung Nguyen
- Description: Applying reinforcement learning for multivariate optimization of intelligent hole-bypassing routing protocols in wireless sensor networks.
- Skills: Object-oriented C++, Multivariate Optimization, Reinforcement learning.

***Research Assistant - Charging Algorithms in WRSNs***

- Supervisor: Prof. Phi Le Nguyen and Dr. Thanh Hung Nguyen
- Description: Applying deep reinforcement learning to learn optimal policies for mobile chargers in wireless rechargeable sensor networks.
- Skills: Simulation construction, Python, Multivariate Optimization, Deep reinforcement learning.

***Research Assistant - Offloading in MEC***

- Supervisor: Prof. Phi Le Nguyen and Dr. Thanh Hung Nguyen
- Description: Applying deep reinforcement learning to proposal an offloading strategy in vehicular mobile edge computing networks with an objective of minimizing the latency.
- Skills: Network simulation design and development in Python, Multivariate optimization, Deep reinforcement learning, Deep learning.

## Trainings & Certifications

- **NVIDIA-Certified Associate: GenAI LLMs** - NVIDIA (Digital Badge / Certification here)

- **NVIDIA-Certified Associate: GenAI Multimodal** - NVIDIA (Digital Badge / Certification here)
- **NVIDIA-Certified Associate: AI Infrastructure and Operations** - NVIDIA (Digital Badge / Certification here)
- **Machine Learning** - Coursera *(Credential ID: S74W3X7M7FGV)*
- **Deep Learning Specialization** - Coursera *(Credential ID: 6VM5WPB25JXB)*
- **Reinforcement Learning** - University of Alberta *(Credential ID: S9MA55SQ3E25)*

## Skills

| | |
|---|---|
| **Programmmig Languages** | Python, Java, C/C++, R, Matlab, SQL |
| Machine Learning Libraries | Scikit-learn, Numpy, Pandas, Seaborn, Matplotlib, Plotnine |
| **Deep Learning Frameworks** | Pytorch, TensorFlow |
| **Data analysis tools** | Rstudio, Matlab |
| Others | Teamwork management, Presentation |

## Languages

- Vietnamese (Mother tongue)
- Japanese (JLPT N3 - 2020)
- English (IELTS 7.5/9.0 - 2022, TOEFL 110/120 – 2025)

## Honor and Award

2024 - 2026 | **MEXT Scholarship**
*Accepted as Research Student at the University of Tokyo*
*Research topic: Causality-integrated machine learning/deep learning models.*

2023 | **Best paper finalist award**
*Top 1 on track "Machine Learning for Systems"*
*The 23rd International Symposium on Cluster, Cloud and Internet Computing*
Federated Learning model for cluster-skewed non-iid data.

2023 | **First place at Student Scientific Research Contest**
*Hanoi University of Science and Technology Contest 2023*
*School of Information and Telecommunication Technology*
Research on novel cluster-skewed non-IID data in Federated Learning.

2021 | **First place in Open track theme at IBM Hackathon (Open Track)**
*Hanoi University of Science and Technology*
*School of Information and Telecommunication Technology - IBM Hackathon*
Optimization OCR performance at tabular-formed tasks.

2021 | **Third place at Student Scientific Research Contest**
*Hanoi University of Science and Technology Contest 2021*
*School of Information and Telecommunication Technology*
Optimizing offloading latency for MEC problem.

2019-2020 | **Excellence Scholarship**
*Hanoi University of Science and Technology*
Rewarded for top 1% students with highest CPA.

## References

**Prof. Masashi Sugiyama**
*Director, Center for Advanced Intelligence Projects, RIKEN, Japan*
*Professor, the University of Tokyo, Japan*
*Email: sugi@k.u-tokyo.ac.jp*

**Prof. Phi Le Nguyen**
*Acting Director, Institute for AI Innovation and Societal Impact (AI4LIFE)*
*Hanoi University of Science and Technology*
*Email: lenp@soict.hust.edu.vn*

**Prof. Hoang Trong Nghia**
*Professor, School of Electrical Engineering and Computer Science*
*Voiland College of Engineering and Architecture, Washington State University, Pullman, Washington, US*
*Email: trongnghia.hoang@wsu.edu*

**Dr. Thanh Hung Nguyen**
*Director, Department of Training and Education*
*Hanoi University of Science and Technology*
*Email: hungnt@soict.hust.edu.vn*

**Dr. Pham Huy Hieu**
*Associate Director, VinUni-Illinois Smart Healthcare Center*
*College of Engineering & Computer Science, VinUniversity*
*Email: hieu.ph@vinuni.edu.vn*