



# Do Hoang Khoi Nguyen

AI Researcher – Dreamer – Believer

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## EDUCATION

### University of Florida, Gainesville, USA

1<sup>st</sup> year PhD. student in Computer Science

January 2025-Now

### B.E. in Information System

July 2016-November 2021

- **Current GPA:** 3.83/4.0 (Top 1%)
- **Degree Classification:** Very Good

### Main Research Interests:

- Reinforcement learning
- Large Scale Influence Maximization
- Generative AI
- Mixture of Expert
- Optimal Transport
- Unsupervised Learning

**International Conference (\*: First or Co-First author)**

1. **N. D. H. Khoi\***, Bach Ngo, Youval Kashuv, Canh V. Pham, Hanghang Tong, [My T. Thai](#) "Hephaestus: Mixture Generative Modeling with Energy Guidance for Large-scale QoS Degradation", **International Conference on Neural Information Processing Systems (NeurIPS 2025) (Top tier, A\* Conference in Machine Learning, Impact Score: 40).**
2. **N. D. H. Khoi\***, Truc Nguyen, Malik Hassanaly, raed alharbi, Jung Taek Seo, My T. Thai "Swift Hydra: Self-Reinforcing Generative Framework for Anomaly Detection with Multiple Mamba Models", **International Conference on Learning Representation (ICLR 2025) (Top tier, A\* Conference in Machine Learning) (Top 9%, Impact Score: 38.8).**
3. Huyen Nguyen\*, **N. D. H. Khoi\***, Hieu Dam, Cong Tran, Cuong Pham, "REM: A SCALABLE REINFORCED MULTI-EXPERT FRAMEWORK FOR MULTIPLEX INFLUENCE MAXIMIZATION", **The Association for the Advancement of Artificial Intelligence (AAAI 2025) (Top tier, A\* Conference in Machine Learning) (Top 7%, Impact Score: 35.5).**
4. **N. D. H. Khoi\***, Tanmoy Chowdhury, Chen Ling, Liang Zhao, My T. Thai, "MIM-Reasoner: Learning with Theoretical Guarantees for Multiplex Influence Maximization", **International Conference on Artificial Intelligence and Statistics (AISTATS) 2024, (Top tier, A\* Conference in Machine Learning, Impact Score: 15).**
5. Bach Ngo\*, **N. D. H. Khoi\*** "Hexaïssa: Standing on Giants' Shoulders—Routing the Best Chess Engines with Mixture-of-Experts and Latent Reward Learning", **The Association for the Advancement of Artificial Intelligence (AAAI) 2025 (Under Review Phase 2) (Top tier, A\* Conference in Machine Learning, Impact Score: 35.5).**
6. H. T. Duy, D. N. T. Hang, T. T. T. Thanh, **N. D. H. Khoi**, C. D. Cuong, C. D. Truong, "1×2 Switchable Mode Exchange Using Controllable Phase Shifters Based on Silicon Waveguides for High Speed Optical Interconnects", **2020 IEEE International Conference on Communications and Electronics (ICCE).**
7. , **N. D. H. Khoi\***, H.V. Tran, P.V.Cuong, C. D. Truong "Multi-Objective Exploration for Proximal Policy Optimization", **2020 IEEE Applying New Technology in Green Building (AtiGb), Oral paper (Best paper award).**

## International journal (\*: First or Co-First author)

1. **N. D. H. Khoi\*** and My T. Thai "Deductive Exploration in Deep Reinforcement Learning" **Nature Machine Intelligence** (planning to submit) (**Q1 ISI Journal, Impact Score: 25**).
2. Hoang. N. Minh\*, **N. D. H. Khoi\***, Minh N. Vu and My T. Thai "A chain-based reinforcement learning approach for the minor embedding problem" **IEEE/ACM Transaction on Quantum Engineering** (**Q1 ISI Journal, Impact Score: 7.0**)
3. **N. D. H. Khoi\***, M. Hoai, D. N. T. Hang, P.V.Cuong, C. D. Truong, " Self-Controlling Photonic-on-Chip Networks With Deep Reinforcement Learning," in **Nature Scientific Report 2021** (**5th most-cited journal in the world, Q1 ISI Journal, Impact Score: 5.1**).
4. Hai Ta, Duy Nguyen, Thuy Tran, **N. D. H. Khoi**, Hieu Nguyen, Dung Truong, " $1 \times 2$  Switchable Dual-Mode Optical  $90^\circ$  Hybrid Device Based on Thermo-Optic Phase Shifters and  $2 \times 2$  MMI Couplers on SOI Platform," in **IEEE Photonics Journal** vol. 13, no. 1, pp. 1-16, 2021 (**One of the most prestigious journal in Photonic Design field, Q1 ISI Journal, Impact Score: 2.8**).
5. D. N. T. Hang, H. T. Duy, T. T. T. Thanh, **N. D. H. Khoi** and C. D. Truong, "Compact, highly efficient, and controllable simultaneous  $2 \times 2$  three-mode silicon photonic switch in the continuum band," in **IEEE Access** 2021 (**Q1 ISI Journal, Impact Score: 3.9**).

## Professional Services

- **Conference Reviewer: NeurIPS (2025), ICLR (2025), AISTATS (2024–2025), AAAI (2025)**
- **Program Committee: AAAI 2026: Main Conference Track, AI Alignment Track**

## WORK EXPERIENCE

### Connected Brain Corporation, Viet Nam

Feb 2023-Dec 2024

- Research and develop models in NLP and CV related domains.
- Develop language models and machine translation for multilingual processing.
- Design a GPT ChatBot for specific domain.

### Optimization Lab at University of Florida, USA

Sep 2022-Now

- Developed reinforcement learning algorithms and probabilistic graphical models to solve the Multiplex Influence Maximization problem, which involves identifying influential nodes in a multiplex network..
- Incorporated theoretical guarantees, such as approximation bounds or convergence guarantees, to ensure the effectiveness and reliability of the proposed solutions.
- Developed deep reinforcement learning algorithms and graph neural networks to solve the Minor Embedding Problem in Quantum Computing.

### Naver AI Lab, Korea (Remote)

Feb 2020-Oct 2021

- Developed and implemented generative models, such as Variational Autoencoders (VAEs) or Generative Adversarial Networks (GANs), for unsupervised object detection tasks.

- Conducted thorough evaluation and benchmarking of generative models for unsupervised object detection, comparing their performance against state-of-the-art methods.

**Intern at MobiFone Telecommunications Corporation, Viet Nam** **Mar 2019-May 2019**

- Research and develop models for Liveness Detection, Fire Detection in bad condition camera.
- Design an AI device that aid human resources

**Researcher at Samsung Vietnam Mobile R&D Center (SVMC)** **Aug 2018-Feb 2019**

- Build two projects related to the advanced graphic game and autonomous car.
- Research and develop novel algorithms for practical autonomous application.

**AI Photonic Lab, Viet Nam** **Jan 2018-Dec 2018**

- Develop photonic on chip network based on machine learning algorithms
- Simulate and organize structure data in the photonic chip
- Developed novel architectures for on-chip networks, leveraging machine learning techniques to optimize network performance and energy consumption

## HONORS AND AWARDS

- First prize in the innovation and entrepreneurship competition of the Posts and Telecommunications Institute of Technology (2023)
- Best paper award at international conference IEEE ATiGB (2021).
- Excellent quality in Science Research Award of Technology in Post and Telecommunication Institute of Technology: Smart control via speech recognition using Time-Series Data Model (2020)
- Excellent quality in Science Research Award of Technology in Post and Telecommunication Insitute of Technology: DeepNet for smart routing and optimize based on Reinforcement Learning (2020)
- Rank 8/400 (students) in ACM ICPC contest (2019)
- BK Aptech Certification: Professional Mobile Developer on Android (2018)

## ACTIVITIES

- In 2020, I volunteered at a school to support a fundraising event dedicated to upland children. This event aimed to raise funds and resources to provide educational opportunities for children in mountainous areas who may not have the means to attend school. In the event, I contributed to creating awareness and generating support for these children's education.
- Additionally, I have consistently participated in annual charity campaigns focused on assisting families in need, with a particular emphasis on mountainous regions. These campaigns aim to address the educational barriers faced by children in these areas, ensuring they have access to quality education. By actively engaging in these initiatives, I have had the opportunity to make a positive impact on the lives of these families and empower them through education.

## REFERENCES

### 1. Professor My T Thai

Department of Computer Science

University of Florida, USA

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### 2. Professor Minh Hoai Nguyen

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### 3. Professor Minh Tuan Trinh

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### 4. Professor Cuong Pham Van

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### 5. Professor Cao Dung Truong

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