THANH D. PHAM

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RESEARCH INTERESTS

My current research focuses on developing principled approaches that enable AI systems to learn and adapt continuously and efficiently. I have a primary interest in **Knowledge Distillation**, **Neural Collapse**, **Continual Learning** and **DETR-based** model. I am also open to diversifying my research across various areas in the future.

EDUCATION

Bachelor of Data Science and Artificial Intelligence 2021 – 2025
Hanoi University of Science and Technology

High School for Gifted Students, Hanoi National University of Education 2018 – 2021
Mathematics Team Member.

RESEARCH EXPERIENCE

AI Research Resident Jul 2025 – Now
FPT Software AI Center *Hanoi, Vietnam*
Advisor: Prof. Tan Pham

- Exploring Interactive Segmentation in Remote Sensing (ISRS) methods, and its applications. Our research investigates detection-guided interactive segmentation framework that leverages inter-object correlations to propagate user clicks across same-class objects.
- Developing a few-shot learning framework for diffusion-generated synthetic data. Our research introduces novel training paradigm that explicitly balances trade-off between fidelity and diversity when training with synthetic data.

Research Assistant Dec 2022 – Sep 2025
Data Science Laboratory, BKAI, HUST *Hanoi, Vietnam*
Advisor: Prof. Linh Ngo Van

- Worked in the Continual Learning research team. Our research improve prompt-based and prototype-based methods in Continual Learning by exploring its connection to Neural Collapse, leading to mitigating catastrophic forgetting and better performance.

Primary Researcher 2024
Class-Incremental Learning for Fine-Grained Object Detection (funded by Naver)

- Led a Naver-funded project on class-incremental learning strategies for fine-grained object detection.

PUBLICATIONS

1. **Thanh Duc Pham**, Nam Le Hai, Linh Ngo Van, Nguyen Thi Ngoc Diep, Sang Dinh, Thien Huu Nguyen. *Mitigating Non-Representative Prototypes and Representation Bias in Few-Shot Continual Relation Extraction.* Annual Meeting of the Association for Computational Linguistics (**ACL 2025**), Main Conference (**CCF A**).

PREPRINTS

1. **Thanh Duc Pham**, Anh Nguyen, Duong Duc Hieu, Minh-Tan Pham. *ISRS-DETR: Detection-Guided Click Propagation for Remote Sensing Interactive Segmentation.* **Under Review**.
2. **Thanh Duc Pham**, Lan-Cuong Nguyen, Dung D. Le, Minh-Tan Pham. *SyNC: Balancing Fidelity and Diversity of Synthetic Data Representations in CLIP-based Few-Shot Learning via Neural Collapse.* **Under Review**.
3. **Duc Thanh Pham**, Hong Dang Nguyen, Nhat Minh Nguyen Quoc, Linh Ngo Van, Sang Dinh Viet, Duc Anh Nguyen. *Hier-DETR: Hierarchical Neural Collapse Detection Transformer for Class Incremental Object Detection.* **Naver Project**.

AWARDS

Best Thesis Presentation Award 2025
Hanoi University of Science and Technology (HUST)
Awarded for students with outstanding thesis presentation

Silver Medal, National Student Mathematics Olympiad 2022
Vietnam Mathematical Society (VMS)
National mathematics competition for undergraduate students in Vietnam

VIASM Scholarship
Vietnam Institute for Advanced Study in Mathematics
Scholarship for students with exceptional achievement in mathematics

Vietnam Mathematical Olympiad (Encouragement Prize) 2020
High School for Gifted Students, Hanoi National University of Education
The most prestigious math competition for high school students in Vietnam

Gold Medal, Northern Mathematical Olympiad 2019
High School for Gifted Students, Hanoi National University of Education
Regional mathematics olympiad for gifted high school students in northern Vietnam

ACADEMIC SERVICES

Reviewer at AAAI 2025, ACL 2025, ICLR 2026 and ICML 2026

LANGUAGES

Vietnamese	Native
English	Professional working proficiency (IELTS 7.0)

SKILLS

Programming	Python
Technical	Math, Statistics, Machine Learning, Computer Vision
Libraries	PyTorch, Huggingface, NumPy, Pandas, Scikit-learn

REFERENCES

Prof. Minh-Tan Pham
IRISA, Université Bretagne Sud, France

Prof. Thien Huu Nguyen
University of Oregon, USA

Prof. Linh Ngo Van
School of Information and Communication Technology,
Hanoi University of Science and Technology, Vietnam