

# Cuong Pham | (or Phạm Anh Cường)

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in anhcuong-pham

My research interests focus on **Theory of AI** (especially about **Mathematics for AI** such as **Optimization**) and **Federated Learning**, based on the motivation to analyze the way Machine Learning/Deep Learning models work after work experience as an AI Engineer/Data Scientist and also from my ten years as a Mathematics competitor. Moreover, with my experience with **Natural Language Processing (NLP)**, **Computer Vision (CV)** research projects and practical problems, I am also interested in the **Applications of AI in other areas**.

## Education

**Mohamed bin Zayed University of Artificial Intelligence (MBZUAI)** **Abu Dhabi, UAE**  
*Master of Science in Machine Learning* *08/2024–*

- Current GPA: 3.73/4.0 (or 93.87/100) [[Transcript](#)].
- Selected courses: Mathematics for AI, Advanced Machine Learning, Optimization, Probabilistic and Statistical Inference.
- Research interests: **Optimization for Machine Learning, Federated Learning, Federated Optimization.**
- Supervised by [Dr. Samuel Horváth](#).

**VNU University of Engineering and Technology (UET-VNU)** **Hanoi, Vietnam**  
*Bachelor in Information Technology (Honors Program)* *08/2019–06/2023*

- GPA: 3.71/4.0 (or 8.77/10) (High Distinction, top 5% of CS department) [[Transcript](#)].
- Thesis: "Building a Vietnamese image captioning dataset and developing a visual-text transformation model for generating image captions" (9.5/10).
- Supervised by [Assoc. Prof. Quang-Thuy Ha](#), [Dr. Van-Quang Nguyen](#) (from RIKEN AIP), [MSc. Thi-Hong Vuong](#).

**Phan Boi Chau High School for the Gifted** **Nghe An, Vietnam**  
*High school diploma (Specialized in Mathematics)* *08/2016–05/2019*

- Attended **Vietnam Mathematical Olympiad (VMO)** for high school students (2019).

## Experience

### Research Experience

**MBZUAI** **Abu Dhabi, UAE**  
*Graduate Research Assistant* *10/2024–*

- Participating in a project use adaptive stepsize for SGD, aims to reduce the effect of hyperparameters during the training process (joint project with group of [Dr. Martin Takáč](#)), the project paper is currently under review.

**DSKT Laboratory at UET-VNU** **Hanoi, Vietnam**  
*Student Research Intern* *09/2021–09/2023*

- Studied about Multi-view Time Series Forecasting.
- Participated in a project about **Continual Learning in NLP**. This project applied a prototype augmentation mechanism to consistent representation learning to reduce saving data for the next phase of continual learning but still alleviate the forgetting problem [[Paper](#)].
- Thesis Project topic about **Image Captioning**. This project created a new image-caption dataset in Vietnamese and developed a tiny Image Captioning model based on the Transformer framework. The proposed dataset and tiny model were evaluated with variants of Deep Learning-based models (including CNN, LSTM, and variants of Transformer). [[Paper](#)].

### Industrial Experience

**Viettel Networks** **Hanoi, Vietnam**  
*Data Scientist* *10/2023–07/2024*

- Researched and applied **Computer Vision** (image processing, segmentation, classification) for tasks with telecommunication images to automate processes instead of using manual works.
- Solved **Big Data** problems: using Machine Learning with GPUs with large-scale telecommunication data (100M to 10B records) for optimizing and automating processes to improve network users' experience.

**Giaohangtietkiem JSC** **Hanoi, Vietnam**  
*R&D Engineer* *09/2022–08/2023*

- Researched and developed a mail spam filtering based on **Deep Learning** models (CNN, LSTM), and **Natural Language Processing** frameworks (BERT, DeBERTa, PhoBERT), achieving the f1-score of 90% after training with 50k emails, it was then deployed to the company's internal email system.
- Participated in building an internal chatbot using rule-based techniques.

- MasterDev Season 4 Internship Program in Research and Development domain. Training about Probability & Statistics, Natural Language Processing, some Big Data frameworks such as Hadoop and Spark.
- Worked on a project about building a text classification for Vietnamese documents using doc2vec.

## Publications

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[2025]: [Polyak Stepsize: Estimating Optimal Functional Values Without Parameters or Prior Knowledge](#)

Slavomir Hanzely, Farshed Abdukhakimov, **Cuong Anh Pham**, Samuel Horváth, Martin Takáč

Under review, 2025

## Undergraduate Research Papers

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[2024]: [KTVIC: A Vietnamese Image Captioning Dataset on the Life Domain](#)

**Anh-Cuong Pham**, Van-Quang Nguyen, Thi-Hong Vuong, Quang-Thuy Ha

arXiv preprint arXiv:2401.08100

[RIVF 2022]: [Memory-Based Method using Prototype Augmentation for Continual Relation Extraction](#)

Quynh-Trang Pham Thi, **Anh-Cuong Pham**, Ngoc-Huyen Ngo and Duc-Trong Le

RIVF International Conference on Computing and Communication Technologies (RIVF), 2022.

## Honors and Awards

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**2024:** Full scholarship for 2 years of the Master of Science program at MBZUAI

**2023:** Third Prize in Linear Algebra, UET-VNU Mathematical Olympiad

**2022:** Third Prize in Linear Algebra, UET-VNU Mathematical Olympiad

**2022:** Yamada Scholarship

**2021:** Third Prize in Linear Algebra, UET-VNU Mathematical Olympiad

**2021:** Excellent Scholarship for top highest GPA from UET-VNU

**2019:** Attended Vietnam Mathematical Olympiad for high school students

## Skills

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**Programming:** Python, Java, C, C++, HTML/CSS, JavaScript, MySQL.

**Technologies:** PyTorch, Scikit-learn, Linux, Docker, Hadoop, Spark, Laravel.

**Additional:** Microsoft Office, LaTeX, Git.

**Language:** English (with TOEIC LR 855, IELTS 7.0), Vietnamese (native).

## References

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1: **Dr. Samuel Horvath**, Assistant Professor at MBZUAI (UAE)

✉ samuel.horvath@mbzuai.ac.ae 🌐 Website

2: **Dr. Nguyen Van Quang**, Researcher at RIKEN AIP and Tohoku University (Japan)

✉ quang@vision.is.tohoku.ac.jp 🌐 Google Scholar

3: **Dr. Ha Quang Thuy**, Associate Professor at VNU-UET (Vietnam)

✉ thuyhq@vnu.edu.vn 🌐 Website

Last updated: February 27, 2025