

# AN NGUYEN

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## RESEARCH INTERESTS

My current research focuses on developing principled approaches for building scalable and reliable learning systems. I aim to study how model geometry, data distributions, and learning dynamics shape emergent capabilities and make model behavior more predictable. I am also open to diversifying my research across various areas in the future.

## EDUCATION

**Bachelor of Data Science and Artificial Intelligence,** 2020 - 2024  
Hanoi University of Science and Technology – *Valedictorian*  
Cumulative GPA: 4.0/4.0 – *First perfect GPA achieved in the school's 65-year history.*

## RESEARCH EXPERIENCE

**AI Research Resident** Apr 2024 - Now  
FPT Software AI Center *Hanoi, VietNam*  
Advisors: Prof. Thieu Vo and Prof. Tan Nguyen

- Exploring the fundamentals of Transformers and their connections to other fields. Our research investigates hidden symmetries of neurons and the dynamics of tokens within self-attention blocks and leverages these insights to design improved architectures.
- Developing Metanetworks - models capable of processing the weights of other neural networks. Our research examines the functional equivalence of neural network weight spaces and introduces novel equivariant architectures to effectively operate on these spaces.

**Research Assistant** Sep 2022 - Jul 2024  
Data Science Laboratory *BKAI, HUST*  
Advisor: Prof. Linh Ngo Van

- Work in Continual Learning research team. Our research improve prompt-based methods in Continual Learning by exploring its connection to Mixture of Experts models, leading to faster convergence and better performance.

## PUBLICATIONS

(\*) denotes equal contributions.

1. **An Nguyen\***, Duy-Tung Pham\*, Hoang V. Tran, Nhan Phu Chung, Xin T. Tong, Thieu N. Vo\*\*, Tan Minh Nguyen\*\*. [Dynamical Properties of Tokens in Self-Attention and Effects of Positional Encoding](#). *Advances in Neural Information Processing Systems (NeurIPS 2025)*
2. Thieu N. Vo\*, Hoang V. Tran\*, Tho Tran Huu\*, **An Nguyen**, Thanh Tran, Minh-Khoi Nguyen-Nhat, Duy-Tung Pham, Tan Minh Nguyen. [Equivariant Polynomial Functional Networks](#). *International Conference on Machine Learning (ICML 2025)*
3. **An Nguyen\***, Hoang V. Tran\*, Thieu Vo\*, Tho Tran Huu, Minh-Khoi Nguyen-Nhat, Thanh Tran, Duy-Tung Pham, Tan Minh Nguyen. [Equivariant Neural Functional Networks for Transformers](#). *International Conference on Learning Representations (ICLR 2025)*
4. **An Nguyen\***, Minh Le\*, Tien Ngoc Luu\*, Thanh-Thien Le, Trang Nguyen, Thanh Tung Nguyen, Linh Ngo Van, Thien Huu Nguyen. [Adaptive Prompting for Continual Relation Extraction: A Within-Task Variance Perspective Oral Presentation](#). *AAAI Conference on Artificial Intelligence (AAAI 2025)*
5. Minh Le, **An Nguyen\***, Huy Nguyen\*, Trang Nguyen\*, Trang Pham\*, Linh Van Ngo, Nhat Ho. [Mixture of Experts Meets Prompt-Based Continual Learning](#). *Advances in Neural Information Processing Systems (NeurIPS 2024)*
6. Hoang V. Tran\*, Thieu N. Vo\*, Tho H. Tran, **An Nguyen**, Tan Minh Nguyen. [Monomial Matrix Group Equivariant Neural Functional Networks](#). *Advances in Neural Information Processing Systems (NeurIPS 2024)*

## PREPRINTS

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(\*) denotes equal contributions.

1. **An Nguyen**, Anonymous Authors. Quasi-Equivariant Metanetworks. Under Review.
2. **An Nguyen**, Anonymous Authors. Equivariant Metanetworks for Mixture-of-Experts Weights. Under Review.

## AWARDS

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- Scholarship for Students with Excellent Academic Records (6 semesters) 2020–2024
  - Hanoi University of Science and Technology
- Valedictorian of 65<sup>th</sup> Cohort – Hanoi University of Science and Technology 2024
- Outstanding Valedictorians of Universities and Academies in Hanoi 2024
- Rising AI Pioneer – FPT Software AI Center 2024

## INVITED TALKS & PRESENTATIONS

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1. Monomial Matrix Group Equivariant Neural Functional Networks. Oral Presentation. *Robust, Trustworthy and Cost-Optimized Learning Across Multiple Modalities LAMM workshop - ACCV 2024*
2. Equivariant Neural Functional Networks for Transformers. Poster Presentation. *ICLR 2025*

## LANGUAGES

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Vietnamese	Native
English	Advanced (IELTS 8.0)

## PROFESSIONAL SERVICES

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- **Reviewer:** NeurIPS 2025, ICLR 2026, AAMAS 2026.
- **Program Committee:** AAAI 2026.

## SKILLS

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

## REFERENCES

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- **Tan Nguyen**  
Assistant Professor (Presidential Young Professor)  
National University of Singapore  
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- **Thieu Vo**  
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University of Bath  
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- **Linh Ngo Van**  
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