



Nguyen Hoang Viet

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SUMMARY

My research lies at the intersection of mathematical theory and machine learning, with an emphasis on bridging theoretical rigor and practical impact. My recent research investigates parameter convergence behavior in Mixture-of-Experts models. I also explore machine learning solutions for real-world problems, particularly in quantum computing. My long-term goal is to advance statistical methodologies that strengthen the reliability and interpretability of machine learning systems.

EDUCATION

2019 - 2022 **High School for Gifted Students, Hanoi University of Science (HUS)** Vietnam
High School Diploma (Specialized in Mathematics)
2022 - 2026 **Hanoi University of Science and Technology (HUST)** Hanoi, Vietnam
(Expected) BSc in Computer Science (Talented Program) (CPA: 3.90/4.0 - top 1% of the cohort)

RESEARCH EXPERIENCE

Independent Researcher Oct 2025 - present
– Supervisor: **Prof. Nhat Ho**, The University of Texas at Austin
– Focused on the theoretical analysis of Mixture-of-Experts models, with particular emphasis on parameter convergence rates
– Conducted research on medical image retrieval methods, focusing on colorectal cancer detection
Undergraduate Research Assistant | NetLab - HUST Jul 2024 - Sep 2025
– Supervisor: **Prof. Trinh Chien**, Hanoi University of Science and Technology
– Formulated the communication channel estimation problem using rigorous mathematical analysis and introduced an evolutionary algorithm to improve channel quality
– Conducted research using the D-Wave quantum computer to solve multi-objective optimization problems via quantum annealing

PUBLICATIONS

Improved Differential Evolution for Enhancing the Aggregated Channel Estimation of RIS-Aided Cell-Free Massive MIMO
Trinh Van Chien, Viet Nguyen, Symeon Chatzinotas, Lajos Hanzo
IEEE Transactions on Vehicular Technology 99, pp. 1-6

PREPRINTS

A Mixture of Experts Vision Transformer for High-Fidelity Surface Code Decoding
Viet Nguyen, Manh Hung Nguyen, Hoang Ta, Van Khu Vu, Yeow Meng Chee
Under Review

Rethinking Multinomial Logistic Mixture of Experts with Sigmoid Gating Function
Tuan Minh Pham*, Thinh Cao*, **Viet Nguyen***, Huy Nguyen, Nhat Ho**, Alessandro Rinaldo**
Under Review

A Statistical Theory of Gated Attention through the Lens of Hierarchical Mixture of Experts
Viet Nguyen*, Tuan Minh Pham*, Thinh Cao*, Huy Nguyen, Nhat Ho**, Alessandro Rinaldo**
Under Review

ACHIEVEMENT

2020	Vietnam Mathematical Olympiad	(Second Prize – ranked 13th)
2023	Vietnam Math Competition for University student	(First Prize – ranked 4th)
2025	Vietnam Math Competition for University student	(First Prize – ranked 8th)

LANGUAGES

Vietnamese	Native	
English	IELTS Overall 7.0	(L – R – W – S: 6.5 – 8.5 – 7.0 – 6.0)

REFERENCES

Prof. Nhat Ho	The University of Texas at Austin
Prof. Trinh Chien	Hanoi University of Science and Technology