Duc Q. Nguyen

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SUMMARY

My foremost goal is to amplify human potential through artificial intelligence. My research interests lie in human-AI alignment, with a particular focus on generative models and probabilistic methods. I aim to develop methods that can collaborate effectively with humans to enhance their capabilities in critical domains such as healthcare and education.

WORK EXPERIENCE

Teaching Assistant - Vietnam National University - HCM　　　　　　Apr. 2023 - Jul. 2025

I served as a Teaching Assistant for several undergraduate courses, including Programming Fundamentals, Data Structures and Algorithms, and Mathematical Modelling. My responsibilities included assisting with lecture preparation, developing and grading assignments, and supporting students through tutorials and consultations. In addition, I mentored undergraduate students on research projects and theses, providing guidance on technical development and academic writing.

Visiting Student Researcher - Stanford University　　　　　　Sep. 2024 - Dec. 2024

I was a visiting researcher at the STAIR Lab, Department of Computer Science, under the supervision of Professor Sanmi Koyejo. During this time, I worked on developing large language model benchmarks, probabilistic methods for long-term planning in dynamic cost environments, and simulation-based approaches for modeling student learning in programming courses.

Research Assistant　　　　　　Feb. 2022 - Jul. 2025

I contributed to two research projects: one on detecting fake news on social networks and another on developing an AI-based translation system for Vietnamese–Bahnaric, a minority language in Vietnam. My responsibilities included mentoring undergraduate students, collecting data, designing experiments, analyzing results, and assisting in the revision of academic manuscripts.

PROJECTS

Probabilistic Pedagogy for Accelerated Learning　　　　　　Link to Github

I developed a computational framework for simulating interactive teaching scenarios between a teacher and a student. This project implements rational and naive students, along with different teaching and learning strategies, to study effective pedagogical approaches.

Automatically Evolving Multi-agent Deep Research System　　　　　　Link to Github

I developed an automatically evolving system for deep research pipelines. The system is designed to work with any large language models and pipelines, autonomously generating research questions, conducting deep research, evaluating reports, and performing continuous fine-tuning.

EDUCATION

2025 - now	PhD in Computer Science at **National University of Singapore**
2023 - 2025	M.Eng in Computer Science at **Vietnam National University - HCM** (GPA: 3.65/4.0)
2018 - 2022	B.Eng in Computer Science at **Vietnam National University - HCM** (GPA: 3.50/4.0)

PUBLICATIONS

Nguyen, Duc Q., Khoan D. Le, et al. (Oct. 2022). "Towards De Novo Drug Design for the Coronavirus: A Drug-Target Interaction Prediction Approach using Atom-enhanced Graph Neural Network with Multi-

hop Gating Mechanism". In: *2022 9th NAFOSTED Conference on Information and Computer Science (NICS)*, pp. 275–280. DOI: 10.1109/NICS56915.2022.10013437.

Nguyen, Duc Q., Nghia Q. Vo, et al. (May 2022). "BeCaked: An Explainable Artificial Intelligence Model for COVID-19 Forecasting". In: *Scientific Reports* 12.1. Publisher: Nature Publishing Group, p. 7969. ISSN: 2045-2322. DOI: 10.1038/s41598-022-11693-9.

Truong, Sang T., Duc Q. Nguyen, Tho Quan, et al. (Oct. 2023). "Thomas: Learning to Explore Human Preference via Probabilistic Reward Model". In: *ICML 2023 Workshop The Many Facets of Preference-Based Learning*.

Truong, Sang T.*, Duc Q. Nguyen*, et al. (June 2024). "Crossing Linguistic Horizons: Finetuning and Comprehensive Evaluation of Vietnamese Large Language Models". In: *Findings of the Association for Computational Linguistics: NAACL 2024*. Ed. by Kevin Duh, Helena Gomez, and Steven Bethard. Mexico City, Mexico: Association for Computational Linguistics, pp. 2849–2900. DOI: 10.18653/v1/2024.findings-naacl.182. *Co-first author.

Patel, Fagun*, Duc Q. Nguyen*, et al. (Oct. 2025). "The Sound of Syntax: Finetuning and Comprehensive Evaluation of Language Models for Speech Pathology". In: *Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing*. Ed. by Christos Christodoulopoulos, Tanmoy Chakraborty, et al. Suzhou, China: Association for Computational Linguistics, pp. 34895–34913. ISBN: 979-8-89176-332-6. *Co-first author.

Truong, Sang T., Duc Q. Nguyen, Willie Neiswanger, et al. (Mar. 2025). "Neural Nonmyopic Bayesian Optimization in Dynamic Cost Settings". In: *Towards Agentic AI for Science: Hypothesis Generation, Comprehension, Quantification, and Validation*.

Fellowships

2024   Microsoft Accelerate Foundation Models Research (AMFR) - $60.000
2023   Master, PhD Scholarship Programme of Vingroup Innovation Foundation (VINIF) - $5.000

Awards

2021   First Prize in Biomedical - Euréka Student Scientific Research Award
             - *Minister of the Ministry of Information and Communications, Vietnam*
2019, 2021   Certificate of Merit: Students with excellent achievements in learning and research in the field of Information Technology, Artificial Intelligence
             - *Director of the HCMC Department of Information and Communication, Vietnam*

Professional Activities

Organizer   LM4UC Workshop at NAACL 2025, AAAI 2026
Reviewer   AAAI 2026, AISTATS 2026

References

Professor Zhi-Xuan Tan   National University of Singapore, xuan.cs@nus.edu.sg
Professor Sanmi Koyejo   Stanford University, sanmi@cs.stanford.edu
Professor Tho Quan   Vietnam National University - HCM, qttho@hcmut.edu.vn