THONG TIEN DOAN

doantienthongbku@gmail.com | @taft_doan | doantienthongbku
https://doantienthongbku.github.io/ | doan-tien-thong | google scholar

RESEARCH INTERESTS

Multimodal Learning, Spatial Reasoning for Vision-Language Models (VLMs), Large Language Models (LLMs)

EDUCATION

University of Technology - Vietnam National University (VNU-HCM) 2019 - 2023

B.S in Control Engineering and Automation, **GPA:** 8.29/10.0 (**Top 5%** of 700 students in faculty)

Thesis: Real-time Image Super-Resolution with Deep Learning Approach - 9.6/10 (**Top 1%** of faculty)

CS Courses: Probability Statistics (9.0/10), Machine Learning (8.2/10), AI (8.5/10), Digital Image Processing and CV (9.0/10), Database Systems (8.0/10), Programming Fundamentals (8.0/10), Principles of Programming Language (7.5/10)

RESEARCH EXPERIENCE

Singapore University of Technology and Design (SUTD), Research Assistant Oct 2025 - Present
Advisors: *Prof. Roy Ka-Wei LEE*
Research topics: Large Language Models (LLMs), Vision-Language Models (VLMs), Culture Alignment

Ongoing Project: *CuRA: Culture-Conditioned Routing for Safe Agentic AI – colab with **Microsoft Research Asia***

- Investigated methods for enabling agentic AI systems to adapt to Southeast Asian cultural contexts while maintaining safety, responsibility, and alignment with local norms.

FPT Software AI Center, AI Research Resident (*AI Residency Program*) Jun 2024 - Oct 2025
Advisors: *Dr. Quang Pham*
Research topics: Mixture of Experts (MoE), Vision-Language Models (VLMs), Large Language Models (LLMs)

Project: *LibMoE: A Library for Comprehensive Benchmarking of Mixture-of-Experts [Preprint]*

- Developed LibMoE, a modular and resource-efficient framework that unifies the training and evaluation of Mixture-of- Experts algorithms, enabling systematic, large-scale benchmarking of diverse MoE variants even on limited resources.
- Pretrained Implemented and conducted extensive experiments on a variety of state-of-the-art MoE variants within the unified LibMoE framework to rigorously validate its efficacy. The project has also attracted interest from the community, earning 40 stars on GitHub.

Project: *On DeepSeekMoE: Statistical Benefits of Shared Experts and Normalized Sigmoid Gating [Preprint]*

- Theoretically and empirically demonstrated the statistical advantages of DeepSeekMoE's shared expert strategy and normalized sigmoid gating mechanism, highlighting their improvements in sample efficiency and overall model perfor- mance.
- Implemented and conducted comprehensive experiments and in-depth analyses of router behaviors in DeepSeekMoE architectures for both language modeling and vision-language modeling tasks.

VAS Laboratory, Undergraduate Research Student Dec 2023 - Dec 2024
Advisors: *Dr. Hoang Giap Nguyen*
Research topics: Real-time Image Super-Resolution.

Project: *Real-time Image Super-Resolution with Deep Learning Approach [Github][Thesis PDF]*

- Conducted a comprehensive survey on the topic of (real-time) image super resolution.
- Proposed **DyConvSR**, a lightweight image super-resolution network that achieve comparable accuracy with ∼10× fewer parameters than current than state-of-the-art methods, and conducted experiments to validate its effectiveness. This thesis received a score of 9.6/10, ranking in the top 1% among 700 students in the faculty.

PUBLICATIONS & PREPRINTS

(∗) denotes equal contribution.

LIBMoE: A Library for comprehensive benchmarking Mixture of Experts in Large Language Models (URL)
Nam V. Nguyen*, Thong T. Doan*, Luong Tran, Van Nguyen, Quang Pham, *Under Review at TMLR*

On DeepSeekMoE: Statistical Benefits of Shared Experts and Normalized Sigmoid Gating (URL)
Huy Nguyen, Thong T. Doan, Quang Pham, Nghi D. Q. Bui, Nhat Ho, Alessandro Rinaldo. *Under Review at JMLR*

CodeMMLU: A Multi-Task Benchmark for Assessing Code Understanding Capabilities of CodeLLMs (URL)
Dung Manh Nguyen, Thang Chau Phan, Nam Le Hai, Thong T. Doan, *ICLR 2025*
Nam V. Nguyen, Quang Pham, Nghi D. Q. Bui

Real-time Image Super-Resolution with Deep Learning Approach (URL)
Tien-Thong Doan, Hoang-Giap Nguyen *Undergaduate Thesis*

INDUSTRY EXPERIENCE

VNPAY, Data Scientist Aug 2023 - Jun 2024

- As a Data Scientist, I was responsible for end-to-end development and maintenance of predictive machine learning models, from data exploration and feature engineering to deployment and system automation for marketing and business growth.

Emage Development, AI Engineer Apr 2022 - Dec 2022

- As an AI Engineer, I developed and optimized deep learning solutions for product defect detection and electronic circuit board inspection, leveraging advanced methods in object detection and template matching to address manufacturing challenges.

AWARDS & HONORS

- Academic Encouragement Scholarship - VNU-HCM 2021, 2023
- UAVS Hackatrix - Fix the Glitch competition (URL) - 1st Potential Prize (Certificate) 2021
- Microsoft APAC AI for Accessibility Virtual Hackathon (URL) - Top 5 Vietnam (Certificate) 2020
- VietSeeds Full Undergraduate Scholarship (URL) 2019 – 2023
- TA Scholarship, Mirae Asset Scholarship, Saccramento Scholarship 2020, 2021, 2022

TECHNICAL SKILLS

Programing Languages:	Python, C/C++
Frameworks & Tools:	PyTorch, Pytorch Lightning, Tensorflow, PySpark, SQL, Scikit-learn, Pandas, MatplotlibFastAPI, Docker, Kafka, Linux, Git/GitHub, LATEX
Machine Learning:	Vision-Language Model (VLMs), LLMs, Mixture of Experts, ML/DL
Datasets:	Familiar with large-scale language modeling datasets (e.g., SlimPajama, PES2O, C4), Vision-language datasets (e.g., LLaVA, ALLaVA) and evaluation dataset
Language:	Vietnamese (Native), English (Professional working proficiency)

INTERESTS

- Hobbies: Cooking, Running