TRONG MINH LONG BUI

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INTRODUCTION

I am a Ph.D. candidate in Computer Science with research interests in developing principled and probabilistically grounded methods for efficient and robust decentralized and continual learning systems. My work spans probabilistic frameworks for *model merging, continual adaptation, flow-based models and uncertainty quantification.* I am passionate about building scalable, theoretically sound machine learning systems that bridge statistical rigor with practical deployment. I am currently open to research internship opportunities in machine learning, artificial intelligence, and related fields.

EDUCATION

PhD. in Computer Science (ongoing)

- *Institution*: Washington State University
- *Department*: Electrical Engineering and Computer Science
- *Duration*: 2024 - 2029
- *Topic*: Probabilistic frameworks for model merging and continual adaptation with applications in agentic systems.
- *Supervisor*: Dr. Nghia Hoang

BSc. in Applied Mathematics and Informatics

- *Institution*: Hanoi University of Science and Technology
- *Department*: School of Applied Mathematics and Informatics
- *Duration*: 2018 - 2022
- *Topic*: Monotone Variational Inequality Problems and Applications to Optimization.
- *Supervisor*: Dr. Thuy Nguyen

WORK EXPERIENCES

Research Assistant

- *Institution*: Washington State University
- *Duration*: 2024-Present
- *Responsibilities*: Assisting in research efforts including developing ideas, running experiments and writing papers.

Teaching Assistant

- *Institution*: Washington State University
- *Duration*: 2025-Present
- *Responsibilities*: Designing assignments, grading student work, contributing to curriculum design.
- *Courses*
  1. CPT_S 570 - Machine Learning (Fall 2025)
  2. CPT_S 580 - Generative Artificial Intelligence (Spring 2026)

AI Research Resident

- *Institution*: FPT Software
- *Duration*: 2021-2024
- *Advisor*: Dr. Tan Nguyen
- *Responsibilities*:
  1. Conducting research on Transformers, NeuralODEs, Gaussian Processes and Graph Neural Networks.
  2. Investigating calibration methods to build trustworthy and robust Transformers.

Research Assistant

- *Institution*: Hanoi University of Science and Technology
- *Duration*: 2020-2021
- *Advisor*: Dr. Phi Le Nguyen
- *Responsibilities*: Developing Graph Deep Learning models to predict the air quality measured by sensors placed in various locations in Hanoi, Vietnam.

PUBLICATIONS

Published

T. Khiem Tran, **Long Minh Bui**, Phi Le Nguyen, Mrinal K Sen, Sanjay Srinivasan, Trong Nghia Hoang, Jana Doppa "CoupledFlow: One-Step Neural Operators for Coupled Multi-Physics PDEs", *Neural Information Processing Systems, 2026.*

Long Minh Bui, Nghia Nguyen, Trong Nghia Hoang, Tan M. Nguyen, Thieu N. Vo. "FracGRAND: Graph Neural Diffusion Meets Fractional Differential Equations", *Asilomar Conference on Signals, Systems, and Computers, 2026..*

Long Minh Bui, Tuan Anh Le Van, Tung Phi Duc, Phi Le Nguyen, Jana Doppa, Trong Nghia Hoang. "Model Merging as Probabilistic Inference in Fine-Tuning Parameter Space", *In The 42nd Conference on Uncertainty in Artificial Intelligence, 2026..*

Long Minh Bui, Tho Tran Huu, Duy Dinh, Tan Minh Nguyen, Trong Nghia Hoang. "Revisiting Kernel Attention with Correlated Gaussian Process Representation." *In The 40th Conference on Uncertainty in Artificial Intelligence, 2024.*

Tan Nguyen., Tam Nguyen, **Long Bui**, Hai Do, Duy Khuong Nguyen, Dung D. Le, Hung Tran-The, Nhat Ho, Stan J. Osher, and Richard G. Baraniuk. "A Probabilistic Framework for Pruning Transformers Via a Finite Admixture of Keys." *In ICASSP 2023-2023 IEEE International Conference on Acoustics, Speech and Signal Processing.* - **Top 3% accepted paper.**

AWARDS

EECS Graduate Fellowship Fund

Awarded the EECS Graduate Fellowship Fund from the School of Electrical Engineering and Computer Science at Washington State University for the Spring 2025 semester.

ICASSP 2023 top 3% accepted paper

FPT Software AI Center Hackathon

- Second place out of 12 teams.
- Product: NoiseFree: Deep-learning based noise reducer solution for audio recording

PROFESSIONAL SERVICES

Conference Reviewer

ICLR 2027, UAI 2026, ICLR 2026 Trustworthy AI Workshop, ICLR 2026, UAI 2025.

Journal Reviewer

Transactions on Machine Learning Research, Neural Networks, Journal of Combinatorial Optimization.

Supervision of Undergraduate Students

- **Tuan-Anh Le, Tung Phi** - Hanoi University of Science and Technology
  Project: Probabilistic Model Merging.
  Description: Develop a novel probabilistic framework for uncertainty-aware model merging/fusion.

- **Quang Bui** - Hanoi University of Science and Technology
  Project: Continual model merging.
  Description: Design novel model merging methods for continual learning systems.