BINH GIA NGUYEN

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EDUCATION

FPT University *2022 – 2026*
B.Sc. in Artificial Intelligence Hanoi, Vietnam
GPA: 8.59/10 Graduated with Honors
Thesis: *LiteVLA-MS: Resolving Motion Under-Specification in Lightweight Vision–Language–Action Models*

RESEARCH INTERESTS

I am interested in **Efficient AI** - specifically model compression, model pruning and sparsity, efficient training and inference acceleration, and scalable deployment of large-scale models. My applied focus spans multimodal and Vision-Language-Action (VLA) models for robotics, which I use as a testbed for developing efficient methods that generalize broadly across architectures and domains

RESEARCH & PUBLICATIONS

CKA-Guided Layer Pruning for VLA Models 2025 – Present
Supervisor: Duy H. M. Nguyen VinUniversity / VinRobotics, Hanoi

> *Finetuning Vision-Language-Action Models Requires Fewer Layers Than You Think*
> **Binh G. Nguyen***, Trong-Bao Ho, Thien-Loc Ha, Khoa Vo, Philip Lund Møller, Quang Tan Nguyen, Long Dinh, Tuan Quan Dam, Vu N. Duong, Tung Minh Luu, Trung Le, Tran Nguyen Le, Minh Nhat Vu, An Thai Le, Ngan Le, Daniel Sonntag, James Zou, Jan Peters, Duy Minh Nguyen Ho, Vien Anh Ngo
> *Under Review* · clpvla.github.io

- Found that current state-of-the-art VLA models exhibit significant layer redundancy, which can be removed without significant performance drop
- Proposed CKA-Guided Layer Pruning (CLP), a training-free structural compression method for VLA models using Centered Kernel Alignment (CKA) layer similarity scores.
- Applied CLP to π_0, GR00T-N1.5, and SmolVLA; evaluated on LIBERO, RoboCasa, and SimplerEnv benchmarks and 10 real-world tasks with significant training time reduction, inference speedup and minimal performance drop.

Future-Oriented Conditioning for VLA Adaptation 2025 – 2026
Supervisor: Duy H. M. Nguyen VinUniversity / VinRobotics, Hanoi

> *FOCA: Future-Oriented Conditioning for Data-Efficient Vision-Language-Action Adaptation*
> Duc M. Nguyen*, Nghiem T. Diep*, **Binh G. Nguyen***, Trong-Bao Ho, Doanh Le, Tan Nguyen, Thien-Loc Ha, Tran Nhiem, Bao Thach, Nhat Tran, Tuan Anh Tran, Artur Habuda, Philip Lund Moeller, Tran Nguyen Le, Daniel Sonntag, Mathias Niepert, Khoa Doan, Vu Duong, Hung Ngo, Minh Vu, Duy MH Nguyen, An Thai Le, Vien Ngo
> **ICML 2026** · focavla.github.io

- Co-developed FOCA, a data-efficient adaptation method for VLA models via future-oriented action conditioning (co-first author).

Collaborative Research in VLA Ecosystem 2025 – Present
VinUniversity / VinRobotics, Hanoi

Start Right, Arrive Right: Asynchronous Execution via Initial Noise Selection
Trong-Bao Ho*, Quang Tan Nguyen*, Thien-Loc Ha*, **Binh G. Nguyen**, Viet-Thanh Nguyen, Long Dinh, Minh Nhat Vu, Duy Minh Ho Nguyen, An Thai Le, Vien Anh Ngo
Under Review · `paint-action-chunking.github.io`

EquiVLA: A General Framework for Rotationally Equivariant Vision-Language-Action Models
Thien-Loc Ha*, Quang Tan Nguyen*, Trong-Bao Ho*, Long Dinh, Minh Duc Nguyen, **Binh G. Nguyen**, Pham Tri Quang, Minh Nhat Vu, Duy Minh Ho Nguyen, An Thai Le, Vien Anh Ngo
Under Review · `equivla.github.io`

Progress-Guided Preference Generation for Aligning Generative Control Policies
Tung Minh Luu*, Tri Ton, Minh Duc Nguyen, Thanh Xuan Nguyen, **Nguyen Gia Binh**, Quang Tan Nguyen, Vu N. Duong, Daniel Sonntag, Duy Minh Ho Nguyen, Vien Anh Ngo, Chang D. Yoo
Under Review

Self-Improving VLA Policies: Selected Diffusion Noise for Spurious-Robust Action Smoothing
Minh Duc Nguyen*, Bao-Ngoc Dao, Tung Minh Luu, **Nguyen Gia Binh**, Vinh Tong, Anji Liu, Vu N. Duong, Dung D. Le, Daniel Sonntag, Trung Le, Ngan Le, Jan Peters, An Thai Le, Minh Nhat Vu, Mathias Niepert, Khoa D. Doan, Duy Minh Ho Nguyen, Vien Anh Ngo
Under Review

OPEN-SOURCE CONTRIBUTIONS

Tavish9/any4lerobot *2025*
A curated toolbox of data-conversion utilities for the LeRobot framework.
Contributed the RoboCasa → LeRobot dataset conversion pipeline.

HONORS & AWARDS

Champion — Funix GenAI Hackathon (Top 1 / 22 teams) *2024*
MindGPT: AI-powered mindmap generation web application.

Finalist — Pixta AI Hackathon, Face Analysis Challenge (Top 8 / 70 teams) *2024*

100% Full Tuition Scholarship *2022 – 2026*
FPT University — Highest Logic Math entrance score (86/90).

Honorable Student Award *2022 – 2026*
FPT University — Awarded every semester throughout undergraduate study.

SKILLS

Programming	Python, C++
Frameworks	PyTorch, HuggingFace Transformers, LeRobot, LangChain, ROS
Tools	Git, Docker, Weights & Biases, Linux, LaTeX
Research Areas	Multimodal AI, Model compression