Thanh Duy **Huynh**

AI Student · Computer Vision · Applied AI & Intelligent Systems

Can Tho, Vietnam | Open to relocation

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Computer Vision • Deep Learning • Video Understanding • Edge AI • Robotics



Profile

Artificial Intelligence undergraduate specializing in computer vision and applied deep learning, with research in person re-identification, video understanding, efficient object detection, and quantum machine learning. Experienced in experimental design, reproducible evaluation, and production-oriented model deployment using Python, PyTorch, ONNX, and Docker.

Technical Skills

Programming & Data	Python, C/C++ fundamentals, NumPy, Pandas, data preprocessing, statistics, model evaluation
Deep Learning	PyTorch, TensorFlow/Keras, CNNs, attention mechanisms, LSTM, temporal modeling
Computer Vision	OpenCV, YOLO-based detection, image/video preprocessing, tracking, pose estimation, person re-identification, video understanding
Deployment & Tools	ONNX, TorchScript, basic TensorRT, Docker, REST API integration, Linux, Git, Jupyter, Google Colab
Robotics & Edge AI	Real-time camera pipelines, edge inference, sensor integration, ESP32, basic ROS/ROS2

Publications & Research

Resource-Aware Quantum Downstream Classification for Speech Emotion Recognition under Compact Feature Budgets

PDCAT 2026

Accepted Conference Paper — *2026*

- Developed a resource-aware quantum machine learning framework for speech emotion recognition, comparing QSVC, VQC, and QCNN-like architectures under compact 4-, 8-, and 16-qubit feature budgets.
- Benchmarked five feature selection strategies, including QUBO-based optimization, on RAVDESS and CMU-MOSEI using speaker-independent evaluation and matched classical baselines.
- Achieved up to 0.760 Macro-F1 on binary emotion classification with QCNN-like models, highlighting resource-performance trade-offs and limitations of quantum classifiers against classical baselines.

Similarity-Driven Grad-CAM++ for Explainable Person Re-Identification

ICDSAIA 2026

Accepted Conference Paper — *2026*

- Proposed a similarity-driven Grad-CAM++ framework for person re-identification, generating attribution maps from query–gallery similarity scores rather than conventional class logits.
- Evaluated explanation behavior on Market-1501 and MSMT17 using ResNet50 and MobileNetV2, covering true-positive and false-positive retrieval cases.

Attention Placement and Parameter Sharing in Omni-Scale Networks for Person Re-Identification: A Controlled Study

ICDSAIA 2026

Accepted Conference Paper — *2026*

- Conducted a controlled study of attention placement in OSNet, comparing Post, SharedBranch, and IndBranch strategies across multi-scale branches.
- Evaluated Aggregation Gate (AG), ECA, CBAM, and Coordinate Attention on Market-1501 and DukeMTMC-ReID under the same training protocol without ImageNet pretraining, metric-learning losses, or re-ranking.
- Found that Post and SharedBranch were generally more reliable than IndBranch, with AG-Post reaching 93.2% Rank-1 and 81.1% mAP on Market-1501 and CBAM-Post reaching 68.1% mAP on DukeMTMC-ReID.

DySample-ASFFLite YOLO11 for Lightweight Drone-Based Maritime Search-and-Rescue Object Detection

ICDSAIA 2026

Accepted Conference Paper — *2026*

- Developed a lightweight YOLO11s-based maritime search-and-rescue detector by replacing the two main top-down neck upsampling operators with DySample and adding an ASFFConcatLite adaptive feature-fusion block.
- Improved validation mAP50:95 from 0.1854 for the YOLO11s baseline to 0.2130 at epoch 30 while maintaining a lightweight configuration of 10.35M parameters and 24.8 GFLOPs.

An Efficient Human-Centric Violence Detection Framework with YOLOv11-AFNet and TemporalSA-MoViNet

Concurrency and Computation: Practice and Experience

Published Journal Article — *2026*

- Developed a spatial-temporal video recognition pipeline combining YOLOv11-based person detection, AFNet feature learning, and TemporalSA-MoViNet for efficient violence recognition.

Ghost-YOLOv11: A Lightweight and Efficient Deep Learning Model for Real-Time Mango Counting

2026 IEEE 3rd International Conference on Big Data Science and Engineering (ICBDSE)

Published IEEE Conference Paper — *2026*

- Developed a lightweight YOLOv11-based detector for real-time mango counting using GhostConv and C3k2Ghost modules, targeting efficient inference for resource-constrained vision systems.
- Achieved 1.85M parameters and 2.70 GFLOPs, with 0.773 MAE and 422.9 FPS on the reported test split.

HALE-YOLO: Integrating High-Resolution and Lossless Features for Efficient Aerial Tiny Person Detection

HUMAN 2026

Accepted Conference Paper, Paper ID: 207 — *2026*

- Worked on efficient aerial tiny person detection by integrating high-resolution and lossless feature representation for small-object detection.

Experience

FPT Software - AI Valley

Can Tho, Vietnam

AI Intern — *01/2026 - 04/2026*

- Contributed to production-oriented AI workflows for enterprise use cases, including preprocessing, model training and optimization, inference setup, and validation.
- Participated in deployment and integration workflows using ONNX, Docker, Linux environments, and REST APIs.

FPTU AI & Robotics Challenge 2025 / Vietnam Open Robotics Challenge 2024

Can Tho, Vietnam

Technical Mentor — *10/2024 - 08/2025*

- Supported teams with AI problem solving, ESP32, sensors, robotics hardware, connectivity, and on-site troubleshooting during competition deployment.

Selected Projects

VNNETZERO – Digital Platform for Net Zero & Green Behavior Governance

Vietnam National University, Hanoi

Full-Stack Developer — *2026*

- Built a production web platform using Next.js, TypeScript, Payload CMS, and PostgreSQL for publishing Net Zero research, courses, events, and sustainability content.
- Designed CMS schemas, dynamic routing, reusable content modules, multilingual architecture, and SEO workflows supporting Vietnamese, English, Chinese, Korean, and Japanese content.
- Containerized and deployed the platform with Docker and a reverse proxy on a Linux VPS, including domain, HTTPS, database, and production configuration.

SAYNTAX – Voice-Driven Coding for Accessible Web Development

GenAct "STEAM for ALL"

Project Lead — *2026*

- Led an inclusive technology initiative enabling people with disabilities to explore web development through voice-driven coding and accessible interaction methods.
- Designed the technical workshop workflow, participant learning experience, pre/post evaluation, and community ambassador model for pilot implementation.
- Selected as a Top 10 project in the GenAct "STEAM for ALL: Technology for an Inclusive World" challenge, receiving seed funding to implement and evaluate the pilot.

School-Violence Detection System from CCTV Using Video, Deep Learning, and Attention

FPT University

University-level Research Project — *08/2025 - 08/2026*

- Built an end-to-end video analysis pipeline using person detection, feature extraction, attention, and temporal modeling for CCTV footage.
- Contributed to dataset construction and cleaning, model implementation, experiment design, evaluation, reporting, and manuscript revision.

Person Re-Identification on OSNet via MDHA & Dynamic Graph Convolution

FPT University

Research Member — *08/2025*

- Enhanced OSNet with MDHA and Dynamic Graph Convolution; evaluated performance on Market-1501 and DukeMTMC and conducted ablation studies.
- Contributed to module design, experiments, and technical writing; related multi-camera tracking work was presented at Research Festival 2025.

Education

FPT University - Can Tho Campus

Can Tho, Vietnam

Bachelor of Artificial Intelligence, GPA: 3.5/4.0 — *2023 - 2027 (expected)*

- Relevant courses: Computer Vision, Deep Learning, Machine Learning, Data Mining, Linear Algebra, Probability & Statistics, Python for AI.

Kasem Bundit University — *Thailand*
Certificate, Intensive English Program — *01/2024*

Awards & Certifications

08/2025	**Consolation Prize**, Research Festival 2025 - online multi-camera people tracking with MDHA Attention and DGC Convolution	*FPT University*
04/2026	**Specialization**, Natural Language Processing - DeepLearning.AI	*Coursera*
12/2025	**Certificate**, Introduction to Containers w/ Docker, Kubernetes & OpenShift	*Coursera / IBM*
06/2026	**Certificate**, Practical Quantum Computing with IBM Qiskit for Beginners	*Coursera*
03/2025	**2nd Prize**, "Var-Code" programming and problem-solving competition	*FPT University*

Leadership & Activities

WECO Open Training 3 — *Vietnam*
Speaker — *[09/2026]*

- Presented on multidimensional perspective assessment in the context of green transition, with emphasis on environmental, economic, social, and technological trade-offs.
- Discussed practical approaches for comparing stakeholder perspectives and evaluating sustainability challenges beyond single-metric or one-sided interpretations.

FPT Artificial Intelligence Club — *FPT University - Can Tho Campus*
President / Former Academic Chair — *12/2024 - Present*

- Managed club operations and technical activities; designed AI/ML training content, guided mini-projects, and coordinated AI/robotics workshops and competition support.

Green Career Pioneer 2026 & Green Youth Pioneers / SDY — *Vietnam*
Program Manager / Human Resources Lead — *03/2023 - Present*

- Coordinated youth programs related to sustainability, green jobs, and capacity building, including cross-functional planning across people, communications, and event operations.
- Contributed to initiatives that delivered 30+ capacity-building workshops and directly benefited approximately 1,400 youth.

FGE - FPT Green Environment Club — *Can Tho, Vietnam*
Vice President — *09/2023 - 01/2025*