

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

AI undergraduate with hands-on experience in computer vision, video understanding, object detection, person re-identification, and deployable deep learning systems. Experienced across research and production-oriented workflows, including dataset preparation, model training and evaluation, real-time video pipelines, ONNX/Docker deployment, and technical reporting. Contributed to peer-reviewed research and AI/robotics projects, with a strong interest in building reliable perception and intelligent systems for real-world applications.

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

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

Deep Learning & Explainable AI

RESEARCH PROJECT

2026

- Developed a similarity-driven Grad-CAM++ framework for person re-identification, generating attribution maps based on query-gallery similarity scores rather than conventional class logits.
- Evaluated explanation behavior on Market-1501 and MSMT17 using ResNet50 and MobileNetV2 backbones, covering true-positive and false-positive retrieval cases.
- Designed quantitative sensitivity analysis to measure person/background attribution distribution and assess the robustness of Grad-CAM++ explanations under image perturbations.
- Built an annotation and validation pipeline for qualitative and quantitative XAI analysis, including fallback handling for invalid or degenerate attribution maps.

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.
- Published by Wiley. DOI: 10.1002/cpe.70811.

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.

Selected Projects

VNNETZERO – Digital Platform for Net Zero & Green Behavior Governance

FULL-STACK DEVELOPER

Vietnam National University, Hanoi

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

PROJECT LEAD

GenAct “STEAM for ALL”

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

UNIVERSITY-LEVEL RESEARCH PROJECT

FPT University

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

RESEARCH MEMBER

FPT University

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.

Experience

FPT Software - AI Valley

AI INTERN

Can Tho, Vietnam

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

TECHNICAL MENTOR

Can Tho, Vietnam

10/2024 - 08/2025

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

Education

FPT University - Can Tho Campus

BACHELOR OF ARTIFICIAL INTELLIGENCE, GPA: 3.5/4.0

Can Tho, Vietnam

2023 - 2027 (expected)

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

Kasem Bundit University

CERTIFICATE, INTENSIVE ENGLISH PROGRAM

Thailand

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

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