

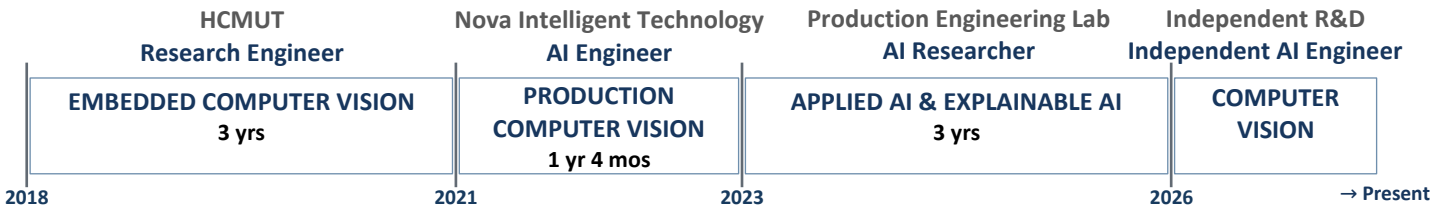
DUC AN NGUYEN

Computer Vision Engineer

7+ Years Across Industry & Research

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LinkedIn | GitHub

CAREER PATH



SKILLS

PROGRAMMING & FRAMEWORKS

Python, C/C++, MATLAB, PyTorch, TensorFlow, OpenCV

LANGUAGES

English (C1), French (A2), Vietnamese (native)

EDGE DEPLOYMENT

TensorRT, TFLite, ONNX, Quantization, Memory optimization, Nvidia Nano Jetson, Raspberry Pi, STM32

OTHER TOOLS

Linux, Git, DVC, Docker, PostgreSQL, MQTT, Grafana, Explainability methods and tools

PROFESSIONAL EXPERIENCE

Independent AI Engineer - Computer Vision

May 2026 - Present

Personal R&D Project

France

- Developed an **object-detection** model for nighttime monitoring in low-contrast infrared imagery
- Analyzed detection failures across varying levels of contrast, noise, and image quality to guide model refinement

AI Researcher - Applied AI & Explainable AI

Feb 2023 - Jan 2026

Production Engineering Laboratory

France

- Built an edge IoT monitoring system on **NVIDIA Jetson Orin Nano** and integrated a federated-learning workflow
- Designed an explainability framework to interpret multimodal deep learning models using image, text, and numerical sensor data
- Developed an intrinsically explainable framework for system-level health monitoring and prognostics

AI Engineer - Computer Vision

Oct 2021 - Jan 2023

Nova Intelligent Technology JSC

Vietnam

Project: Real-Time Multi-Camera Smart City Surveillance System

- Architected and developed HydraNet, a multi-process, multi-threaded shared-backbone **computer vision system** for **real-time multi-camera** detection, tracking, segmentation, classification, and face recognition
- Optimized the AI inference pipeline on **memory-constrained** devices with **ONNX, TensorRT, FP16 quantization**, motion-triggered inference, and resolution scaling to improve system efficiency and maintain stable performance
- Developed lightweight **image processing** algorithms to improve the preprocessing quality, accuracy and efficiency of AI inference pipelines
- Built monitoring applications using object detection and object tracking, and collaborated with software and UI teams to integrate the computer vision pipeline into the production system

Freelance AI Engineer - Signal Processing & ML

Remote

Jun 2022 - Sep 2022

United States

Project: Development of a Neural Recording System

- Developed a MATLAB-based interface for neural signal analysis and visualization
- Designed FIR filters and signal processing algorithms for EEG event detection

Research Engineer - Embedded Computer Vision

Ho Chi Minh University of Technology

Aug 2018 - Aug 2021

Vietnam

Project: Coffee Bean Sorting Machine - Jetson Nano / Raspberry Pi

- Designed and implemented an end-to-end real-time coffee bean sorting system, from hardware setup and image acquisition to a multi-process, multi-threaded computer vision pipeline
- Developed image enhancement, denoising, and segmentation algorithms for robust object isolation under non-uniform lighting and background conditions
- Investigated a CIELAB color space-based classification model using the Pocket algorithm to improve robustness under illumination changes
- Optimized embedded vision pipelines for memory usage and execution speed to achieve real-time performance within the computing and memory constraints of **NVIDIA Jetson Nano and Raspberry Pi 3**

Project: Embedded Fingerprint Recognition System - STM32 (C)

- Implemented fingerprint enhancement, segmentation, thinning, and feature-extraction algorithms to extract reliable ridge features for matching under high-noise conditions
- Improved and adapted the Lin Hong matching algorithm for efficient fingerprint comparison
- Optimized memory and computational performance for deployment on STM32 microcontroller

Other Projects:

- Developed a name card recognition workflow with image processing, PyTesseract OCR, and Regex for extracting structured data (name, phone, address)
- Built a real-time system with OpenCV and MobileNet model to detect objects through Raspberry Pi 3

EDUCATION

PhD, Toulouse INP

Industrial & Computer Engineering | Specialization: Applied AI & Explainable AI

Feb 2023 - Jan 2026

France

M.Sc., Ho Chi Minh City University of Technology

Electronic Engineering | Specialization: Embedded Computer Vision

Sep 2019 - Sep 2021

Vietnam

B.S., Ho Chi Minh City University of Technology

Electronics and Telecommunications Engineering | Specialization: Embedded Systems

Sep 2014 - Apr 2019

Vietnam

REFERENCES

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