

Ha Trong Nguyen

AI Engineer

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Summary

AI Engineer specializing in building production AI services for EdTech platforms. Expertise in developing end-to-end AI pipelines, including OCR, LLM-based grading systems, multi-agent chatbots with RAG, and evidence analysis. Experienced in deploying scalable AI services on cloud infrastructure with Docker, observability, and security hardening.

Research Interests: Large Language Models, Computer Vision, and Applied AI.

Education

Ton Duc Thang University

Bachelor of Computer Science - GPA: 8.4/10 | Conduct Score: 92/100

2022 - Apr 2026

Ho Chi Minh City, Vietnam

Experience

ANZ Innovation

AI Engineer (Backend)

2025 - Present

Remote

- Designed backend architecture serving 3 environments (dev/staging/prod) with Docker Compose; automated CI/CD pipelines.
- Built multi-agent AI orchestration system (Supervisor pattern) with streaming SSE for educational chatbots.
- Deployed PostgreSQL + Milvus vector DB with automated backup; configured GPU containers for ML workloads.
- Implemented Langfuse observability, PII scrubbing, and audit logging for production security compliance.

AI Laboratory – Faculty of Information Technology, Ton Duc Thang University

AI Laboratory Member

2025 - 2026

Ho Chi Minh City, Vietnam

- Explored hybrid optimization techniques and LLMs for solving the Job Shop Scheduling Problem (JSSP) using OR-Tools.
- Built experimental pipelines to benchmark scheduling approaches and contributed to improved optimization performance.

Projects

VTC AI Service | FastAPI, LangGraph, Milvus, Docker

2026 - Present

- Built EdTech AI platform with 5 modules: OCR, Grading, Evidence Analysis, RAG, and Quiz Generation.
- RAG system with Milvus vector database for semantic search; automated grading with rubric parsing.
- Deployed as production Docker service with Next.js frontend integration.

NovaLearn AI Mentor | FastAPI, LangGraph, Milvus, PostgreSQL, PaddleOCR

2026 - Present

- Full-stack AI educational platform with RAG chatbot, multi-agent grading, and OCR document processing.
- LLM agent workflows via LangGraph for performance analysis, lesson planning, and quiz generation.
- GPU-accelerated OCR pipeline with PaddleOCR for document processing.

Golf Tech Analysis - DataStorm 2025 📄 | FastAPI, SwingNet, MediaPipe

2025

- Built backend API integrating SwingNet AI and MediaPipe Pose for golf swing recognition (8 phases, 93% accuracy).
- Automated scoring (0–10) with coaching feedback and corrective drill recommendations; deployed on Hugging Face Spaces.

Product Information & Expiration Date Recognition | YOLOv11, OCR

2024 - 2025

- Led 3-member team on OCR-based extraction for packaging inspection with 97% accuracy; First Prize in university competition, published at SOICT 2025 (Springer CCIS).

Vietnamese OCR from Images 📄 | PyTorch, ResNet, Transformers

2024 - 2025

- ResNet–Transformer architecture for Vietnamese text recognition, achieving 95% accuracy on VinAI dataset.

Skills

- **Deep Learning:** PyTorch, TensorFlow, OpenCV
- **LLM & AI:** Transformers, LangGraph, LangChain, PaddleOCR, LiteLLM, Mem0
- **Backend:** Python, FastAPI, AsyncIO, Pydantic, SSE, httpx
- **Databases:** PostgreSQL (SQLAlchemy Async), Milvus Vector DB
- **DevOps/Infra:** Docker, Linux/Ubuntu, NVIDIA CUDA, Cloud
- **Observability:** Langfuse, Audit Logging
- **Tools:** Git, Alembic, Cursor, Copilot, Antigravity

Publications

- **Ha-Trong Nguyen**, Nguyen-Thai Khoi, Luong-Chi Trung, Han Le, Chung-Thai Kiet, Nguyen-Huu An, & Dung-Cam Quang. (2026). *Revisiting Long-Term Time Series Forecasting: An Empirical Perspective on Recent Approaches*. In Springer CCIS, vol. 2943, pp. 621–632. ICCIES 2026.
- Le-Thanh Tien, Luu-Huu Tri, **Ha-Trong Nguyen**, Nguyen-Huu An, & Dung-Cam Quang. (2025). *VNProductKIE: A Dataset and Three-Stage Pipeline for Key Product Information Recognition on Vietnamese Packaging Labels*. Presented at SOICT 2025. Proceedings to appear in Springer CCIS.

Awards

- **First Prize (Co-winner)**, Vietnam Datathon – DataStorm 2025 (Team AIAI). National data science competition with 700+ participants from 44 universities. (2026)
- **First Prize**, Student Research Competition - Ton Duc Thang University. University-wide research competition among 50+ teams. (2025)

Certifications

- **Machine Learning** • **Computer Vision** • **Deep Learning (CNN)** • **Prompt Engineering**

Languages

- **Vietnamese** (Native) • **English** (Intermediate - Reading & Writing)