Tran Ngoc Tuong

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Summary

AI Engineer with over 5 years of experience developing and deploying intelligent systems. My expertise includes 3 years specializing in Computer Vision and Image Processing, and 2 years working on Natural Language Processing projects.

I am particularly interested in Machine Learning, Deep Learning, and AI algorithms, with a strong focus on applying robust software engineering practices to build scalable, real-world solutions.

Education

2015 - 2020 Applied Mathematics and Informatics of Engineering at **HUST** (GPA: 3.11/4.0)

Skills

Operating System	Debian, Ubuntu, CentOS
Data Storage	PostgreSQL, MongoDB, MySQL, Milvus, etc.
Programming Language	Python, Bash
Library and Framework	Tensorflow, Pytorch, ONNX, TorchScript, Transformers, TF-serving, LLMDeploy, Langchain, LlamaIndex, Huggingface, etc.
Version Control	Git, DVC
MLOps	MinIO, Redis, Nginx, Flask API, CI/CD, Github Actions, Docker, Kubernetes
Languague	Vietnamese (native), English (TOIEC: 650)

Work Experience

AI Research Engineer at OmiNext JSC. Sept 2025 — Present

- Lead the design and formulation of the evaluation methodology for the research paper.
- Research and analyze knowledge graph–based, LLMs approaches for chronic disease modeling, focusing on type 2 diabetes.
- Collaborating within a research team to prepare and submit conference papers.

AI Engineer/Data Scientist at Kalapa JSC. Sept 2024 — Sept 2025

- Enhance quality assessment models to detect fraudulent identification cards and passports, and developed a face anti-spoofing module to prevent presentation attacks in the Kalapa eKYC system.
- Research and develop an end-to-end system that uses LLMs, VLMs, and traditional OCR techniques to extract information from an unstructured document, such as financial reports, bank statements.
- Design load test, high available test, and unit test for service APIs.

AI Engineer at Eastgate Software Jun 2021 – Sept 2024

- Develop an end-to-end Retrieval-Augmented Generation (RAG) pipeline using LLMs for both keyword-based and semantic search for a Sustainability Report Scoring system.
- Build an end-to-end document processing pipeline that finetune LayoutXLM, NER models to extract key information from PDF and image-based medical and veterinary reports.
- Research and optimize ML models for key–value relationship extraction, achieving better performance than deep learning approaches, Language Independent Entity Linking.
- Develop and optimize time-series models for real-time forecasting of vehicle counts on road segments using weather data from Hong Kong government sources, HKeMobility - Traffic Information.

AI Engineer at VNPT AI Sept 2019 - May 2021

- Key contributor in developing and optimizing Computer Vision models for VNPT Smart Vision tasks such as Action Recognition, Detection of Elderly and Children, and Weapon Recognition in surveillance cameras.
- Research and implement supporting models for VNPT eKYC

Projects & self-study experience

Re-implementing Machine Learning algorithms from scratch Github profile

In addition to my professional work, I dedicate time to gaining a deeper understanding of core algorithms by re-implementing them from scratch, including OCR models (CRNN, Differentiable Binarization, etc.) and computer vision algorithms such as object detection, segmentation, and human pose estimation (YOLO series, CenterNet, OpenPifPaf, etc).

Face Recognition - Active Learning, VIASM Project profile

The Vietnam Institute for Advanced Study in Mathematics (VIASM) collaborated with the Center for Supporting Development of Science and Technology (CENSTED) to organize training courses under the Active Learning project, an initiative founded by alumni of the Vietnam Education Foundation (VEF) scholarship program, with support from the U.S. Embassy in Hanoi. I successfully completed the program and was awarded a certificate, presenting a final project on Face Recognition.

Language independent Entity Linking Github profile

State-of-the-art VIE/KIE models (e.g., LayoutXLM, LayoutLMv3) sometimes fail in simple cases with clear geometric relations, relying more on semantics than layout. To validate this hypothesis, I experimented with entity linking using geometric features derived from bounding boxes.

Certifications

- Certificated ML/DL course sponsored by Viet Nam Institute for Advanced Study in Mathematics
- Certificated Kubernetes for the Absolute Beginners-Hands-on by Udemy
- AI Agent Course - HuggingFace
- Claude Code in Action - Anthropic

Honors & awards

- Encouragement Award, District Mathematics Competition for Outstanding Students (2009)
- Top 15/30 Final Round - CODEWAR 2019 programming contest organized by FPT
- Best applicability project prize of scientific research contest for students (2019)

Publications

Nguyen, Nhung et al. (2026). "OmiKG: An Ontology and Knowledge Graph for Mechanistic Root Cause Analysis in Functional Medicine". In: *Proceedings of the AMIA Annual Symposium*. Submitted, under review.