HENRY NGUYEN

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EDUCATION

Master of Science in Artificial Intelligence *Exp. May 2026*
San Jose State University San Jose, CA

- Coursework: AI & Data Engineering, Deep Learning, Reinforcement Learning, Autonomous Driving, MLOps

Bachelor of Engineering in Mechatronic Engineering *Apr. 2023*
Ho Chi Minh City University of Technology Vietnam

TECHNICAL SKILLS

AI & Agents: LLMs, LangGraph, GraphRAG, MCP, Vector/Graph DBs, Agentic Workflows
Machine Learning: PyTorch, TensorRT, ONNX, CUDA, Quantization, Transformers, CNNs, RecSys
Robotics: ROS2, LiDAR-Camera Fusion, SLAM, Kalman Filters, Perception Pipelines
Software & DevOps: Python, FastAPI, Docker, Microservices, Prometheus, Edge AI (Android/Jetson)

FEATURED AI PROJECTS

SAM-E: Multi-Agent Enrollment Assistant | *GenAI, RAG, LangGraph, Docker, FastAPI*

- Architected a microservices-based agentic system with three services (Agent, RAG, Enrollment Engine) using **Docker Compose** and **LangGraph** to route user intents to specialized tools.
- Developed a retrieval pipeline using **pgvector** to support academic queries, with planned integration of a **Neo4j** knowledge graph; demonstrated functionality via **FastAPI**, **JWT authentication**, and **Prometheus** metrics.

AI Tutor: RAG-Powered Learning Platform | *GenAI, RAG, MCP, FastAPI, OpenAI Agents SDK*

- Built a full-stack multi-agent educational system that ingests documents to generate cited answers, adaptive quizzes, and lesson notes via a source-filtered **RAG** pipeline using **ChromaDB**.
- Implemented an **MCP server** and secure Python execution with **FastAPI** backend, enabling structured tool use, real-time data visualization from CSVs, and adaptive learning features that track student progress.

ROS2 BEV-Fusion: Real-Time 3D Perception | *Python, ROS2, TensorRT, CUDA, Jetson, Edge AI*

- Developed an optimized **BEVFusion** 3D perception pipeline for multi-camera and LiDAR fusion, validated on NuScenes and deployed as a modular **ROS2** package.
- Optimized end-to-end inference with **TensorRT** and quantization, achieving $\sim$7 FPS for the full BEVFusion pipeline on Jetson Orin Nano and publishing **ROS2** detection outputs with latency metrics.

FastViT Mobile Optimization | *PyTorch, Android, Quantization, Knowledge Distillation*

- Re-architected FastViT by replacing Multi-Head Attention with **Performer Attention** ($\mathbf{O(N)}$) and implementing **FP16 quantization**, achieving a **4.8x speedup** on Android with **identical Top-1 accuracy**.

ADDITIONAL PROJECTS

Image Classification: Engineered a modular **timm** training pipeline with automated **ONNX** export, enabling rapid benchmarking of CNN/ViT architectures.

3D Object Detection Pipeline: Built **MMDetection3D** end-to-end inference pipeline for KITTI/nuScenes.

Anime RecSys: Trained and deployed **NeuMF** and **Two-Tower** recommender system via **FastAPI**.

Client Web Projects: Delivered commercial **WordPress** sites with automated booking, increasing client inquiries.

PROFESSIONAL EXPERIENCE

Software Engineer (Automotive Systems) Jun. 2023 – Dec. 2023
Bosch Global Software Technologies Ho Chi Minh, Vietnam

- Delivered production-ready **ESP** software for 8+ projects and provided technical support for several others, leading **ISO-compliant** integration testing and accelerating defect resolution via optimized **HIL** workflows.

Undergraduate Researcher Aug. 2022 – Dec. 2022
Mechatronics Lab, HCMUT Ho Chi Minh, Vietnam

- Designed an adaptive 3-finger robotic gripper (+200% payload capacity) and developed the C++ control stack for a 5-axis manipulator to execute automated pick-and-place tasks.