NGUYEN Le Hoang

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About Me - A Software Engineer

A recent graduate from INSA Rennes with a strong passion for AI and a keen interest in Software Development.

I possess a solid foundation in Machine Learning algorithms and models, with hands-on experience in building Deep Learning models using PyTorch. My expertise includes working with Large Language Models (LLMs), image processing models, and Multimodal models. My primary strength lies in Computer Vision, with the majority of my experience and projects centered around this domain. However, I am also highly enthusiastic about exploring other related areas.

In addition to my AI expertise, I am equipped with fundamental software engineering skills and have a strong interest in research-oriented work.

Education

The Institut National des Sciences Appliquées de Rennes (INSA Rennes), Rennes, France — Sept 2019 – Sept 2024

- **Engineer's Degree in Computer Science (Master 2)**
- **Academic Performance (GPA):** Third Year: 13.36/20, Fourth Year: 13.43/20, Fifth Year: 13.68/20
- **Coursework:** OOP, Data Structures, Database, Design Patterns, Algorithms, Big Data, OS, Network ...

Pohang University of Science and Technology (POSTECH), South Korea — Feb 2023 - June 2023

- **Exchange Program**
- **Coursework:** Machine Learning, Deep Learning, Computer Vision (CV), Natural Language Processing (NLP), Acceleration for Machine Learning

Le Quy Don High School for the Gifted, Danang, Vietnam — Sept 2016 - Sept 2019

Publications

Efficient Video Retrieval with Advanced Deep Learning Models — Dec 2023

SOICT '23: Proceedings of the 12th International Symposium on Information and Communication Technology 10.1145/3628797.3628995

Experience

Computer Vision Engineer Intern - **Lacroix Impulse, Rennes, France** — Mar 2024 – Sept 2024

- **Project**: Multi-Task Learning for Traffic Estimation
- **Reponsibilities**: Researched, developed, and evaluated a deep learning model from scratch to perform multi-task objectives—including object localization, direction estimation, and velocity prediction—while estimating its inference time on embedded systems.
- **Key words**: Deep Learning, Computer Vision, Research, SSD, RAFT

Software Engineer Intern - **IRISA (Institute for Research in Computer Science and Random Systems), Rennes, France** — June 2023 – Oct 2023

- **Project**: Triangle
- **Reponsibilities**: Improved the user interface of an AI-powered geometry teaching application for tablets
- **Key words**: MVVM, WPF, .NET, C#

Full Stack Developer Intern - **Orient Software Da Nang, VietNam** — June 2022 – Aug 2022

- **Project**: Sample App
- **Reponsibilities**: Developed a basic social networking website
- **Key words**: Fullstack, MVC, HTML, CSS, Ruby, Rails, SQlite

Projects

Advanced Image Retrieval System Multimodal

- **Description**: Developed an advanced image search system that integrates multiple deep learning models to enable fast and efficient image retrieval
- **Key words**: TransNet, VLM, CLIP, SigLIP, YOLO, Docker, Qdrant, React, FastAPI

Visual Question Answering Multimodal

- **Description**: Conducted a comparative analysis of Visual Question Answering (VQA) models with 3 different levels of complexity for yes/no questions, utilizing the VQA COCO dataset
- **Key words**: VLM, LLM, ViT, RoBERTa, LSTM, ResNet18

End-to-End Machine Learning Pipeline MLOps/DevOps

- **Description**: Built an E2E machine learning system by designing and managing multiple pipelines, including data pipeline, training pipeline, and serving pipeline
- **Key words**: Airflow, Feast, MLflow, BentoML, Docker, CI/CD

Pet Image Segmentation Computer Vision

- **Description**: Developed a U-Net-based deep learning model for precise image segmentation of pets using the Oxford-IIIT Pet Dataset
- **Key words**: U-Net

Explainable AI for Movie Poster Generation Computer Vision

- **Description**: Applied Generative Adversarial Networks (GANs) to generate movie posters using the IMDb movie posters dataset, integrating Explainable AI (xAI) techniques to analyze and interpret the model's decision-making process
- **Key words**: xAI, GAN

Languages

Vietnamese: Native
English: Proficient (IETLS B2, TOEIC B2)
French: Intermediate (DELF B2)

Skills

Programming Languages

- **Proficient**: Python, Java, Bash
- **Experienced**: C, C++, C#, Ruby, SQL

Data Science

- **Data Tools**: Pandas, NumPy, Matplotlib, Streamlit, Selenium
- **ML Libraries**: Scikit-learn, PyTorch, Transformers, TensorBoard, HuggingFace
- **Deployment**: MLflow, BentoML

Web Development

- **Frontend**: HTML, CSS, JavaScript, TypeScript, React, Angular, Bootstrap, Tailwind
- **Backend**: Node.js, Spring Boot, Ruby on Rails, FastAPI
- **Tools**: npm, yarn, Maven

Cloud & DevOps

- **Containerization**: Docker, Docker Compose, Kubernetes
- **Big Data**: HDFS, MapReduce, Spark
- **Version Control**: Git, GitHub, GitLab
- **Operating Systems**: Linux, Windows
- **Workflow Automation**: Airflow