

Minh-Huy Mai-Duc

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EDUCATION

Artificial Intelligence | *Bachelor* Aug 2023 - Present
VNU University of Science, Ho Chi Minh, Vietnam GPA: 3.85/4.0 |

EXTRACURRICULAR EXPERIENCE

HCMUS Google Developer Student Club | *Web Specialist* Dec 2023 - Present

- Web Designer and Content Writer.

AI VIET NAM | *Community Member* Dec 2023 - Present

- An organization that host Artificial Intelligence and Data Science courses.
- Provide career networking and roadmaps for research in MSc, PhD.

AIVN Research Group | *Leader* Jul - Sep 2024

- Summarize papers and do literature reviews about Cardiac MRI Reconstruction.
- Host introductory seminars about processing fMRI images.

AngelHack Hackathon |   | *Participant* Jun 2024

- Create a custom-labeled dataset using CVAT for Southeast Asian beer products.
- Finetune YOLOv8 on custom datasets for real-time beers detection & classification.
- Build a website that analyzes crowd and staffs' emotion through ChatGPT's API.

AI Challenge Hackathon (HCMC) | *Participant* Sep 2024

- Extract video features with multiple SOTA models in Video Retrieval Task. (ViT-B16, ViT-B32, ViT-L14)
- Host and query database with Qdrant and FAISS.
- Build a searching system for Video Retrieval - Known Item Search (Textual)

CERTIFICATES & KNOWLEDGE DEVELOPMENT

Coursera | *Mathematics for Machine Learning* Feb 2024

CS50 | *CS50's Introduction to Artificial Intelligence* Feb 2024

learn@inasp | *Getting Started with Writing and Publishing Your Research* Jun 2024

Coursera | *Machine Learning Specialization* Aug 2024

STIC Talent Program | *Science and Technology Track* Aug 2024

VIASM Summer School on Deep Learning | *Statistical Learning* Aug 2024

SKILLS

Technical Skills |

- Language: C/C++, Python, SQL, HTML, CSS, Javascript, C#.
- Libraries & Frameworks: Numpy, OpenCV, Matplotlib, Pytorch, Pandas, SciPy, Streamlit, Unity.
- Machine Learning: Random Forest, KNN, Decision Tree, Boosting Algorithms, Regression & Classification Algorithms.
- Computer Vision: Image Processing, Feature Matching, Stereo Vision

Soft Skills |

- **English:** Fluent | IELTS Academic 7.5 Jul 2022
- **French:** Conversational
- Problem-solving, critical thinking, adaptability
- Hard-working, effective communication, willingness to learn

PROJECTS

Image Depth | | *AI Vietnam Capstone Project*

Aug 2024

- Implemented multiple stereo matching algorithms for 3D depth reconstruction, including pixel-wise matching (L1/L2 metrics) and window-based matching with cosine similarity optimization to handle illumination variations.
- Built a modular disparity map estimation system that processes stereo image pairs using OpenCV, supporting both grayscale visualization and color-mapped depth representation.
- Tech Stack: Python, OpenCV, NumPy, Computer Vision techniques.

Image Retrieval | | *AI Vietnam Capstone Project*

Aug 2024

- Constructed image retrieval systems from basic pixel-level comparisons to advanced semantic search, applied CLIP (Contrastive Language-Image Pre-training) for generating image embeddings.
- Implemented four similarity metrics (L1, L2, Cosine, Correlation) and integrated ChromaDB for efficient vector storage/retrieval, enabling fast and accurate image similarity search at scale.
- Tech Stack: Python, CLIP Torch, ChromaDB, NumPy, PIL.

Maze Solver | | *Team Leader & Core Developer*

May 2024

- Architected and implemented multiple pathfinding algorithms (DFS, BFS, A*, Q-Learning) with interactive visualization, enabling users to understand algorithm behavior in real-time.
- Applied SOLID principles and clean code practices to create a modular, maintainable codebase spanning 5+ core modules, reducing future development time by 30%.
- Programming Language: Python | Library: PyGame | Tools: GIMP, PyCharm.

Tictactoe | | *Team Leader & Core Developer*

Dec 2023

- Developed an optimized Tic-tac-toe game engine in C++ featuring Minimax algorithm with Alpha-Beta Pruning, achieving efficient move computation and challenging AI bot.
- Established coding standards and documentation practices, utilizing Git workflow for cooperation and code integration.
- Programming Language: C++.