Phan Tai Duc

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INTRODUCTION

I am an AI Researcher with 3 years of Python experience and nearly half a year of experience specializing in Computer Vision at the AiTA Lab - Artificial Intelligence of Technologies and Application - at FPT University HCMC. My expertise includes image classification, object detection, and face recognition. Additionally, I work on projects in generative AI and Natural Language Processing.

I am deeply enthusiastic about exploring new AI research and technologies, guided by the phrase I live by: 'Always be curious,' by Josh Starmer. My goal is to transition into an AI Engineer role within the next two years, focusing on advancements in Computer Vision and NLP.

EDUCATION

FPT University - HCMC Campus — **Thu Duc, Ho Chi Minh City**

Bachelor of Software Engineer — 2023 - Present

KEY SKILLS

Operating System	Ubuntu / Windows 10
Tools / IDEs	VSCode, Colab, Kaggle, Git, Docker, Lightning AI
Programming Languages	Python, shell script, Java, C, C++
Frameworks	PyTorch, TensorFlow, CV2, Numpy, Pandas, Seaborn, Hugging Face, Dlib
Soft skills	Knowledge-sharing, Time management, Problem-solving, Communication, Teamwork, Leadership.
Languages	Vietnamese (Native), English (Fluency)

RESEARCH EXPERIENCE

FPT University - HCMC Campus — **Thu Duc, Ho Chi Minh City**

AI Researcher — March 2024 - July 2024

Applying Active Learning Strategies for Traffic Sign Recognition — June 2024 - July 2024

- Handle and process big datasets like VNTSDB (100Gb) and TT100K (20Gb),...
- Train and evaluate YOLOv8 Nano on 3 datasets for each task.

Enhancing Low-Light Observation on Autonomous Driving — April 2024 - June 2024

- Implement various algorithms to simulate the low-light condition in real life to increase the dataset domain.
- Preprocess BDD100K and understand the YUV color space.
- Apply and train LYTNet with enhanced dataset.

Improving Face Attendance system with Ensemble Learning — March 2024 - June 2024

- Implement VGGFace, GoogLeNet, and FaceNet for face recognition task to apply ensemble learning.
- Utilize MTCNN and Dlib toolkit for face detection.
- Apply similarity functions to calculate score for embedding features.

PROJECTS

Horse2Zebra Transfer with CycleGAN — Feb 2023

- Implement CycleGAN from scratch.
- Prepare and preprocess the Horse-Zebra dataset.

Flower Generator with Diffusion model from scratch — Feb 2023

- Utilize WandB for experiment purposes.
- Understand UNet architecture and build a Diffusion model from scratch.
- Understand and implement various algorithms like Positional Embedding (Sinusoidal Embedding), and linear / cosine / offset-cosine diffusion schedules, ...

Manipulating Face Emotion with VAE — Jan 2023

- Explore the latent space of the CelebA dataset.
- Implement Variation Auto-Encoder from scratch.
- Extract “emotion vector” from preprocessed dataset and control the emotion with math operators.

REFERENCES

- **PhD. Dang Ngoc Minh Duc**
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