NGUYEN CONG TRI

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EDUCATION

VNU UNIVERSITY **2024 - Now**
Master of Science in Computer Science, Graduate students

FPT UNIVERSITY **2018 - 2023**
Hoa Lac, Ha Noi
Bachelor of Science in Computer Science, CGPA: 7.51/10.00

- Thesis "Improving Warped Planar Object Detection Network For Automatic License Plate Recognition" with maximum score of A+(10.0/10.0).
- Advisor: Assoc. Prof. Phan Duy Hung

WORK EXPERIENCE

RAG:

Position: AI Engineer **Nov 2024 - Now**
Description:
Implemented a Retrieval-Augmented Generation (RAG) system to enable users to query uploaded files and retrieve relevant information efficiently
My responsibility:

- Research, build and integration AI model
- Design system pipeline chatbot for structured data, unstructured data use RAG and Agent RAG
- Fine-tuning LLM custom dataset in open source models like Llama3, DeepSeek, etc..
- Use cloud platforms to deployment strategies and optimization techniques
- Serving LLM models.
- Fix bugs and implement change requests

Technologies: RAG, LLM, Langgraph, Transformer, Pytorch, Faiss, Amazon, vLLM, Docker

Healthcare Information Extraction

Position: AI Engineer **Sep 2024 - Oct 2024**
Description:

- Extract important information from French users' healthcare documents (image, pdf, doc, handwriting)
- The tasks performed: Object Detection, Text Detection, Text Recognition, Table Recognition, Information Extraction

My responsibility:

- Search and collect data sources
- Synthetics dataset
- Research, build and integration AI model
- Design system
- Serving LLM models
- Fix bugs and implement change requests

Technologies: LLM, Transformer, Pytorch, Docker, Azure

OCR for Japanese document, France document:

Position: AI Engineer **Feb 2024 - Sep 2024**

Description:

- The system recognizes document information from images
- The tasks performed: Text Detection, Text Recognition, Information Extraction

My responsibility:

- Search and collect data sources
- Research, build and integration AI model
- Design system
- Fix bugs and implement change requests

Technologies: LLM, Haddop, PySpark, Transformers, PaddleOCR, ONNX, Docker

TinyML Research:

Position: AI Engineer **Nov 2023 - Jan 2024**

Description:

- Compression model to decrease time and apply model in edge device
- The tasks performed: Pruning, Quantization, Knowledge Distillation, NAS, Parallel Computing

My responsibility:

- Research, build and integration compression AI model
- Design system
- Fix bugs and implement change requests

Technologies: ONNX, Python, C++, OpenMP

Face Recognition

Position: AI Engineer **April 2023 - Oct 2023**

Description:

- The system recognition face attendant on device
- The tasks performed: Face Detection, Face Alignment, Face Recognition.

My responsibility:

- Search and collect data sources
- Research, build and integration compression AI model
- Design system
- Fix bugs and implement change requests

Technologies: ONNX, Python, Faiss, Haddop, Docker, Pytorch

Detection Anomaly Behavior

Position: AI Engineer **July 2022 - April 2023**

Description:

- **The system detection anomaly behavior**
- **The task performed: Video Stitching, Object detection, Object Tracking, Pose Estimation, Action Recognition**

My responsibility:

- Search and collect data sources
- Research, build and integration AI model
- Design system
- Fix bugs and implement change requests

Technologies: Pytorch, Yolo, ByteTrack, Mediapipe, Docker, Onnx, TensorRT

PUBLICATIONS

[1] N. D. Tra, **N. C. Tri**, and P. D. Hung, Improving Warped Planar Object Detection Network For Automatic License Plate Recognition, 2022. DOI:10.48550 / ARXIV.2212.07066

PROJECT

SELF-DRIVING CAR, DIGITAL RACE
Python Machine Learning **Jan 2019 - Sep 2019**

- Build and develop a car simulator of a self-driving car.
- Classify and detect traffic sign detection for the car simulator .
- Support data processing for other models.
- Initiate algorithm ideas for vehicles.

Technologies: Python, Machine Learning, OpenCV, Deep Learning

IMPROVE WPOD-net
Graduation thesis **Jul 2022 - Dec 2022**

- This project is my graduate project. I try to use Sobel filter as a layer in WPOD-net for improve IOU metric for license plate detection task
- The improved model gives significantly better results in qIoU (from 1 to 1.5 percent) than the original model.

Technologies: Tensorflow, OpenCV

Digital Data For Life
Sep 2023 - Oct 2022

- This project I use model Swin Transformer for video detection in anomaly traffic and classify the case of accidents
- Convert model to file ONNX, add distributed training when training

Technologies: Pytorch, OpenCV

HONORS AND AWARDS

- **The Third Qualifying school Competition** in FPT's Driverless Car Challenge
- **Top 30 in** Digital Data For Life organized by Department C06 of the Ministry of Public Security (Team name: Data4Good)

REFERENCES

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