

NGO LUU TAN HUNG

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EXPERIENCE

Machine Learning Intern – Delta Cognition

August 2024 – February 2025

- Wrapped and deployed the YOLO-World-Image model using Nvidia Triton and containerize it using Docker, achieving confidence score above 90% for detecting unknown classes using the combination of text prompt and visual prompt.
- Researched novel methods for few-shot object detection, open-set recognition techniques, and methods related to 3D reconstruction, including NeRF, Gaussian Splatting, etc.
- Developed an optimized ML pipeline for 3D model reconstruction from 2D images, by breaking down the original process and optimizing the runtime of each module. The refined pipeline reduced inference time by 40%.
- Deployed deep learning models to application using FastAPI, and integrated these models with Azurite, the Azure Storage emulator, to facilitate efficient local development and testing of blob storage functionalities.

Research Assistant – International University

June 2023 - Present

- Developed deep learning-based coding schemes for image transmission using PyTorch, OpenCV, and LabelImg.
- Proposed formula for noise generation and loss function to prevent eavesdropping and ensure data integrity.
- Achieved a Structural Similarity Index of 0.96 between the received images and the original images on the authenticated receiver, disrupted eavesdropper channels, and outperformed baseline schemes (JPEG+LDPC+QAM) in various settings.

AWARDS

- Best Paper Award - "Security Improvement for Deep Learning-Based Semantic Communication Systems" 2024 International Conference on Advanced Technologies for Communications (ATC), Ho Chi Minh City, Vietnam.
- Honorable Mention, ICPC 2022 Asia Ho Chi Minh City Regional Programming Contest.
- Full Scholarship for Bachelor study in Computer Science and Engineering, International University - VNU HCMC

PUBLICATIONS

- Hung Ngo Luu Tan, Van-Dinh Nguyen, Thien Huynh-The, Toan-Van Nguyen, and Phuong Luu Vo. "Security Improvement for Deep Learning-Based Semantic Communication Systems." Proceedings of the 2024 International Conference on Advanced Technologies for Communications (ATC), Ho Chi Minh City, Vietnam, October 17-19, 2024.

PROJECTS

AI Knowledge Graph System (<https://github.com/HngNg/ai-knowledgegraph-system> - personal project):

Knowledge Graph System for creating, processing, and querying data from various input sources.

- Developed a microservices-based system to create, process, and query multimodal knowledge graphs from visual, natural language, and audio using Python, Neo4j, and Docker.
- Integrated Whisper and LLM APIs including Gemini Pro 1.5 and OpenAI's ChatGPT for data processing.
- Built a Streamlit-based frontend and deployed scalable services with Docker and AWS S3.

University Healthcare Database (<https://github.com/Minchh/se-university-healthcare-database> - team of 7):

Website for storing university students' healthcare data.

- Led the backend development team in designing, building, and implementing the backend infrastructure
- Developed backend functionalities, including custom APIs to MySQL database using JavaScript, and OAuth 2.0 APIs.

PokeCat&Bat (<https://github.com/nguyenthienchi/pokemon-cat-n-bat> – team of 2):

Pokemon game with two modules of catching and battling Pokemons.

- Utilized Figma, HTML, CSS, and JavaScript for the frontend to create an interactive user interface.
- Developed the backend using Python and Flask-SocketIO, handling data processing and response generation.

SKILLS

- Programming Languages: Python, C/C++, Go, Java
- AI/Machine Learning: PyTorch, Numpy, OpenCV, Triton Inference Server
- Web Development: HTML/CSS/JavaScript, FastAPI
- Others: Docker, Azure/AWS Cloud Services

EDUCATION

International University – VNU, HCMC

August 2021

Bachelor of Engineering, Network Engineer

- Grade Point Average (GPA): 3.2/4.0
- Valedictorian in the 2021 VNU Entrance Examination into School of Computer Science and Engineering