Le Huy Hong Nhat

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Career Objective

Seeking an AI Engineer internship opportunity to apply my knowledge in Machine Learning and Deep Learning to solve real-world problems. Eager to learn new technologies and enhance software development skills in a professional environment.

Education

Posts and Telecommunications Institute of Technology - PTIT *Sep 2021 - Present*
Major: **Information Systems**

- Key Courses: Python Programming, Machine Learning, Natural Language Processing, Computer Vision, Data Science

Work Experience

AI Engineer Intern at Insight Data *Oct 2024 – Dec 2024*

- Developed a chatbot system for automatic message response using **LangChain**, **LLM**, and **Vector Database**
- Applied the **Retrieval-Augmented Generation (RAG)** technique to enhance answer relevance using context-aware retrieval
- Utilized **Prompt Engineering** methods to refine LLM prompts for higher response quality and coherence
- Built RESTful APIs using **FastAPI** to support chatbot integration and backend communication

Featured Projects

Soccer Player Image Classification with ResNet18 *Computer Vision*

- Developed and trained ResNet18 network for soccer player image classification, achieving **96%** accuracy
- Implemented Learning Rate Scheduling and Data Augmentation for model optimization
- Deployed and optimized performance on Kaggle platform

Football Ball Speed Estimation App *Computer Vision & Mobile Development*

- Collaborating with a freelancer group to build an application that measures the speed of a soccer ball's kick using state-of-the-art models like YOLO and DeTR

- Applied image processing algorithms to accurately compute ball speed from mobile cameras on both Android and iOS platforms
- Collected real-world kicking data under diverse conditions including different weather scenarios, deformed balls, small-sized balls, partially occluded balls, and motion blur caused by powerful kicks
- Continuously optimizing model performance and accuracy through testing and algorithm enhancements

Data Mining System *Data Science & Full-Stack*

- Built a comprehensive data mining web application with a FastAPI backend and an interactive frontend interface
- Implemented robust data preprocessing pipeline including missing value imputation, outlier detection, feature scaling, and encoding
- Integrated multiple machine learning algorithms (Random Forest, XGBoost, SVM, Neural Network, etc.) for classification, regression, and clustering
- Designed evaluation module with cross-validation, hyperparameter tuning, and explainability using SHAP
- Developed RESTful API endpoints for data upload, model training, and preprocessing; deployed system locally with Uvicorn

Vietnamese Sentiment Analysis with PhoBERT *NLP*

- Developed sentiment classification model using PhoBERTbase with **93.8%** accuracy
- Utilized UIT-VSFC dataset combined with **8,000+** self-collected and labeled real-world samples
- Optimized model performance through Learning Rate Scheduling and imbalanced data handling

Restaurant Customer Service Chatbot *NLP & Flask*

- Designed intelligent chatbot using a 2-hidden-layer neural network architecture
- Integrated Word2Vec and Attention Mechanism to enhance response accuracy
- Implemented lightweight solution suitable for small-scale systems

Healthcare Chatbot with LLM *LLM & LangChain & FastAPI*

- Built RAG (Retrieval-Augmented Generation) chatbot using LangChain
- Applied Prompt Engineering techniques to optimize response accuracy
- Designed vector database for efficient query processing

Flower Search System *Computer Vision & Full-Stack*

- Developed a content-based image retrieval system for flowers using deep learning and vector similarity search
- Extracted image features with a pre-trained ResNet50 model and stored vectors in ChromaDB for similarity comparison
- Built a full-stack solution with a FastAPI backend and Streamlit frontend, allowing users to upload images and retrieve top similar results with similarity scores
- Implemented a standardized image preprocessing pipeline and designed system evaluation using precision, recall, and mAP
- Created modular components including preprocessing, feature extraction, vector database, and evaluation scripts

Skills

Technical Skills

- **Languages:** Python, Java, C++
- **Frameworks:** PyTorch, Scikit-learn, TensorFlow, Keras, LangChain, Flask, FastAPI, Streamlit
- **Databases:** MySQL, MongoDB, SQL Server, Neo4j
- **Tools:** Git, Docker
- **AI/ML:** NLP, Computer Vision, LLM

Soft Skills

- **Language:** Proficient in English (reading, writing, listening)
- **Communication:** Strong interpersonal skills
- **Teamwork:** Experienced in team management
- **Leadership:** Led multiple academic project teams