Pham Doan Phuong Anh

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Education

Graduation with Honours - Bachelor of Science *2021 – 2025*
Fulbright University Vietnam, Ho Chi Minh City
Major in Computer Science, Minor in Human-Centered Engineering
GPA: 3.46/4.0

Research Experience

Honors Capstone Project: "Designing a Photorealistic Simulation Platform for Robust Semantic Segmentation in Autonomous Vehicles" *Jun 2024 – Jun 2025*
Advisor: Dr. Huynh The Dang

- Developed a 3D simulation from Houdini and Unreal Engine 5 and generated a synthetic data set ($\sim$ 8000 synchronized images of 3 types: RGB, Semantic, Depth) using EasySynth *(dataset)*.
- Used DeepLabV3 ResNet50 to fine-tune the customized synthetic dataset generated from the simulator for traffic image segmentation for 9 classes (traffic light, road, highway, obstacles, decor, car, margin, skyline, buildings) *(github)*.
- Evaluate model performance through quantitative (Model Accuracy, Confusion Matrix, Dice Coefficients and qualitative methods (Visualize prediction images).

Queer Narrative Game Research: "Queer Women's Stories Through Interactive Gameplay"
Jan 2024 – Jun 2024 Advisor: Dr. Phan Thanh Trung

- Co-developed a 2D narrative-driven RPG game using the Godot Engine that explores the lived experiences of queer women through branching storylines, relationship mechanics, and emotional world-building.
- Conducted in-depth research on the history and representation of queer romance in video games, analyzing how LGBTQ+ narratives have evolved and identifying gaps in inclusive storytelling across mainstream and indie titles.
- Designed dialogue trees, quest systems, and character development arcs to reflect authentic queer experiences, inspired by both historical research and interviews with community members.
- Collaborated on world-building, pixel art assets, and game logic implementation using GDScript, ensuring smooth scene transitions and player choice tracking *(github)*.

Professional Experience

AI and Software Engineering Intern – ForthAI, Singapore *Jun 2024 – Sep 2024*

- Focused on research and implementation of AI Agent technologies using frameworks such as AutoGen, LangChain, LangGraph, and crewAI.
- Built plan-action agents and management agents for autonomous deployment applications.
- Collaborated closely with the CEO, CTO, and founding team to develop an AI-powered platform for developers.
- Gained hands-on experience with early-stage startup operations and technical stacks including Next.js, GCP, and Cloud Build.

Quality Control and Assurance Collaborator – Garena Vietnam *Apr 2024*

- Conducted comprehensive testing of gameplay, UI/UX, and graphics using Garena's internal game engine.
- Coordinated with local and international (Chinese) development teams to ensure rapid resolution and optimization.

Selected Projects

Speech Emotion Recognition (SER) *2024*
Tools: MATLAB, MATLAB Mobile

- Developed a lightweight real-time SER system using SVM and MFCC, trained on RAVDESS, TESS, and SAVEE datasets.
- Achieved 71% accuracy and enabled live voice input, emotion trend visualization, and data logging through MATLAB Mobile and process data on MATLAB.
- Applied data augmentation techniques (noise addition, pitch shifting) to improve model robustness.

Digital Signal Processing Project – Embedded Programming on STM32H747 *2024*
Language: C

- Implemented real-time embedded applications including smart door lock and LED control using STM32H747.
- Integrated sensors and peripheral devices for expanded real-world functionality.
- Optimized firmware using Digital Signal Processing techniques for improved responsiveness and reliability.

SLAM Robot – Intelligent Robot Studio *2024*
Languages: Embedded C, Python
Platforms: ROS2, Arduino, Raspberry Pi 3

- Built a multi-sensor robotic system with camera, LiDAR, Raspberry Pi, and motor drivers (*github*).
- Developed modular software in ROS2 for real-time sensor control and SLAM navigation.
- Implemented A* algorithm for obstacle avoidance and optimized path planning.
- Achieved real-time SLAM through synchronized data processing and embedded control.

Software Engineering Project – OneDegree Website *2023*
Languages: Node.js, Flask API, Python, ReactJS, JavaScript

- Designed and developed a personal academic tracking website based on user interviews and journey mapping.
- Built the frontend using ReactJS and collaborated on backend research and deployment (*github*).

Skills

AI/ML: Deep Learning, LangChain, SLAM, Computer Vision, Autonomous Driving
Engineering: Robotics, Adruino, Embedded C, STM32
Languages: Vietnamese (native), English (fluent), Chinese (intermediate)

Interests

Computer Vision, Robotics and Autonomous Systems, AR/VR Development