HUNG (DYLAN) VO

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EDUCATION

Bachelor of Science, Computer Engineering | Minor, Computer Science **Graduating: May 2025**

University of Cincinnati, Cincinnati, OH GPA: 3.79/4.0

- Courses: Advanced Data Structures and Algorithms, Operating Systems and System Programming, Embedded Systems, Computer Architecture, Intelligent Data Analysis, Signals and Systems
- Extracurricular**:** UC Robotics Club, IEEE Member, Vietnamese International Student Association

EXPERIENCE

Teaching Assistant and Grader| *University of Cincinnati: Cincinnati, Ohio* **Aug 2022 – Dec 2024**

- Supported 60 students in-class by encouraging questions for any gap and coordinating out-of-class recitations
- Graded averagely 150 assignments per week in Physics, Engineering Statistics, and Distributed Operating Sytems

Robotics Programming Intern | *Digital Futures: Cincinnati, Ohio* **May 2024 – Present**

- Initiated first stage in Ohio's Department of Transportation's futuristic air-ground traffic coordination with quadcopters and robot dogs with prototyping Linux OS boards such as Raspberry Pi's and Jetson Nano's
- Enhanced the robots with line following, road line detection, SLAM navigation features and designed locomotion control like PID controller, smoothened with Kalman filter for teleoperation with Python, OpenCV, and ROS Foxy
- Planned test scenarios with simulation in Gazebo, as well as validated remote data distribution services, and researched improvements for controls in complex tracks like junctions, pedestrian crossings, and driveway

Software Developer Intern | *EMG Education: Ho Chi Minh City, Vietnam* **Jan 2024 – Apr 2024**

- Automated workflow via Excel VBA and Word's Mail Merge to add for scheduled tuition payment management for financial clerical duties, resolving the previous one-week delay to 300 students per pay period
- Enhanced user-end chatbot applications with open-source language models' APIs such as Llama-2, Mistral, BERT and tools such as Azure, Poe, LangChain, HuggingFace for an expected server usage of 200 people
- Managed beta tests of the newly added feature of Retrieval Augmented Generation and aided prompt engineering on external knowledge for personalized K-12 educational materials for chat-bot queries with FastAPI and PyTest

Master Data Management Intern | *WestRock Company: Atlanta, Georgia* **Sep 2022 – Dec 2022**

- Devised an Alteryx's data preprocessing workflow for the past quarter's evaluation from multiple plants from overseas with record tables enumerating to 2 million rows of data per week to hand over for analysis
- Derived analytical charts and end-of-week statistics and numbers with a daily automated data extraction using mySQL on DBeaver datalake system for evaluation in sequential Sprint meetings as an Agile management team

PROJECTS

Game Development Library **Jun 2024 – Present**

- Recreated a library of nostalgic 2D retro games such as Snake Xenzia, Tetris, Pong, Flappy Bird, Breakout using Pygame, Tkinter, or with C++, SFML, and ImGUI as frameworks from scratch for conceptual understanding
- Leveraged Python and PyTorch to train Deep Q neural network, enabling for a self-learning agent with a current high score of 15 in the first 100 plays, developed roadmap for other games using Gymnasium library
- Recreated a maze generator with Prim, depth-first-search, Wilson, Fractal Tessellation and pathfinding solver with A*, Djikstra, and Flood-Fill with pygame withs a GUI using sun-valley –a tkinter's flavor package

Robotic Arm for Neuro-rehabilitation after Stroke **Aug 2024 – Present**

- Led the electrical subgroup to develop a two degree-of-freedom robotic arm with a novel approach for series elastic actuation to promote human-friendly interaction in sensorimotor training for physical therapy recovery
- Designed physical circuitry for optical encoders and managed information with a Quanser data acquisition board
- Developed controls algorithms for active and passive training, included admittance and impedance control loops and analyzed kinematics and dynamic outputs of the end-effector with Simulink, MATLAB, and C
- Managed beta testing and quality analysis via Simscape and Python for data analysis to benchmark the functionality and devised 3 training modes: supination, pronation, stable motion

Micromouse Design – Robotics Club **Sep 2024 – Dec 2024**

- Modularized tasks for creating an autonomous maze-solving mouse with DC motors with encoders, infrared sensors, ultrasonic sensors controlled via Arduino Uno, Raspberry Pi, and other lightweight microcontrollers

- Designed and programmed maze generation such as randomized Kruskal or Fractal Tessellation and maze-solving algorithms such as A-star or Djikstra for controller unit, as well as efficiency tests on motor for trajectory planning using pygame, PyTest, and tkinter
- Configured compatibility and reading for 4 IRs, 1 LiDAR, 4 ultrasonic sensors and ensured accuracy with regards to 0.1 feet tolerance for inputs into the processor for perception

Kaggle's Housing Price Prediction Competition **Oct 2024 – Dec 2024**

- Built a data analysis project on predicting house prices based on 79 features of different characteristics with supervised learning models such as Lasso, Ensemble Random Forest, Support Vector Machine
- Utilized scikit-learn, SciPy, and seaborn to develop the data analysis pipeline from data cleansing, data preprocessing, to exploratory data analysis, then model training with accuracy of average 75%
- Further feature engineering with of MiniSOM to cluster valuable information for enhanced learning experience

Embedded Design - Internet of Things **May 2024 – Aug 2024**

- Wrote sketches for operations with sensors and actuators using Arduino Uno, ESP32, and integrated chips
- Replicated multiple applications such as 74HC595-controlled traffic lights, humidity and temperature sensor with LCD1602, motion sensor using PIR or IR sensor, personal door lock using RFID card reader
- Simultaneously devised and calibrated deprecated utility communication files with various protocols such as I2C, UART, SPI, CAN, and debugged and organized online resources for compatibility with personal project

Predictive Modeling for Agriculture **May 2023**

- Built a multi-class Logistic Regression model to predict the categories of crop with various measures of soil with an F1-score of more than 0.5 using scikit-learn, Python, seaborn, and Jupyter Notebook

UC On-route Traversal System **Jan 2023 – Apr 2023**

- Managed software development tools such as Docker and Sprint for a small campus-based application in deploying path between classes using Django and Google Map APIs as well as real-time notification features

SKILLS & PROFICIENCY

- **Language & Tools**: Python, C, C++, HTML, CSS, Git, CLI tools, SQL, mermaid, LaTeX, markdown
- **Frameworks**: scikit-learn, openCV, pandas, numpy, matplotlib, seaborn, PyTorch, FastAPI, CMake, gymnasium, ROS 2, SFML, SDL, pygame, pyOpenGL, Django
- **Technologies**: Electronics & Schematics, Multisim, Verilog, LabView, Arduino, Raspberry Pi, Jetson Nano, Linux(Ubuntu), Embedded C, Sensors & Actuators, Jira, MATLAB, Microsoft Azure, Simulink, Simscape, Jupyter Notebook

CERTIFICATES

Coursera – DeepLearning.AI Machine Learning Specialization Certificate
DataCamp Certificates – Python Data Science Skill Track & Machine Learning Skill Track

…AVAILABLE FOR FULL-TIME POSITIONS SUMMER 2025…